In this special issue, we showcase technical and professional communication service courses as rich locations for program administrators, instructors, and researchers to ask and test central questions about technical and professional communication as a field and its role in shaping professional communication practices in both the workplace and the public sphere. Lisa Meloncon and Sally Henschel (2013) define service courses as the “introductory courses to the practice of technical and professional writing and communication” (p. 51).

Service courses cover a range of technical, scientific and professional communication practices, “rhetorical, context-dependent actions guided but not wholly determined by conventional heuristics, procedures, and tools” (Scott, 2008, p. 382–383). Like other scholars in the field (e.g., Grabill, 2006; Johnson, 1998; Scott, 2008), we promote a view of practice as something fundamentally complex, often invisible, socially and culturally situated, necessarily rhetorical, and subject to critique (Jones, Moore, & Walton, 2016). The goal of these courses is not simply to teach practices but to prepare students to effectively transfer that knowledge to new rhetorical situations (Scott, 2008).

It is a particularly appropriate moment to examine the role and content of service courses from a programmatic perspective—the systematic and global analysis of programmatic features, like service courses, across programs and institutions—for three reasons. First,
technical and professional practices are rapidly changing, affecting workplace communication and technology, and making increasingly important the issues of transferability of practice knowledge (Scott, 2008) and the ability to adapt to new technologies and methods. Changing workplace structures likewise suggest communication practices related to leadership and project management will be distributed across diverse teams (Willerton, 2008), making direct collaboration among individuals who do not share the same kinds of expertise an increasing reality. Second, technical and professional communication practices are increasingly relevant in both the workplace and the public sphere, central not only to particular occupations but also to everyday life. These practices shape the way we make health and medical decisions, engage with political issues, and negotiate cross-cultural conversations. Finally, technical and professional communication has been undergoing a period of extreme growth, and some (e.g., Kimball, 2017) have argued that this growth has resulted in the neglect of the service courses.

To provide a context for examining such factors, this introductory editorial begins with a brief history of the service course as it emerged from collaboration with engineering disciplines. Parallel to this history is the emergence of technical and professional communication as a discipline committed to studying, shaping, and teaching professional, scientific, and technical communication practices. Such an overview helps set the stage for both a discussion of the articles included in this issue and as reflection on the ways these roots form the basis for an ongoing tension between technical and professional communication’s service identity and its identity as a discipline and field in its own right.

The Evolution of Technical and Professional Communication Service Course(s)

As we revisit the service course in this special issue, we have to consider how it has changed over the years. Both Robert Connors (1982) and Kitty O. Locker (2003) cited the Morrill Acts of 1862 and 1877 that established land-grant institutions as central to the development of specialized courses in business writing and technical writing. These institutions fundamentally changed university curricula to include more technical and applied fields, particularly engineering, and changed the vision for the humanities as well (Connors, 1982, p. 329–330).
When technical writing courses emerged in these early institutions, they were initially designed to serve engineering departments (see Berlin, 1987; Connors, 1982; Kynell, 1999 for detailed histories), not as an extension of an existing technical and professional communication discipline as we understand it today. During this time, engineering was in the process of professionalizing itself within the university, and, as Teresa Kynell noted, writing was seen as an important aspect of that move to transition engineering from an apprenticeship model to a university model. As such, engineers requested the teaching of writing that was more focused on the practical needs of engineers on the job and less focused on literature. This request was also in part due to the “near illiteracy” (p. 13) of engineering graduates at the turn of the 20th century, as many engineers were unable to adequately produce simple business letters or reports once on the job (Connors, 1982; Kynell, 1999).

Though the original exigency for the technical writing service course was to serve engineering, as early as the 1950s technical writing began to gain traction with other disciplines on campus (Connors, 1982). Today the technical and professional communication service course at most universities casts a wide net in terms of enrolling students from a variety of disciplines, with business and technical writing courses increasingly merged under the banner of professional writing (Locker, 2003).

As technical and professional communication has evolved into a discipline in its own right, the range of courses and degrees available in technical and professional communication have also expanded. In 1958, Rensselaer Polytechnic Institute established the country’s first Master’s degree in technical and scientific writing (Connors, 1982). Technical and professional communication programs in the US have grown to 102 Master’s programs, 34 PhD programs where technical and professional communication is a possible, 51 graduate certificates, 70 undergraduate certificates, 123 undergraduate programs that include a technical and professional communication emphasis, and 82 undergraduate programs focused on technical and professional communication (Meloncon, 2018).

**Technical and Professional Communication and Service Courses**

Part of the research conducted in the technical and professional communication field has, of course, included best practices for teaching service courses. Technical and professional communication researchers
have made pedagogical recommendations and critiqued textbooks by studying how workplace genres emerge and operate, and by studying rhetorical practices of engineers and scientists throughout their curricula and on the job (e.g., Davis, 2010; Ford, 2004; Popham, 2005; Wickman, 2013; Winsor, 2003; Wolfe, 2006 and 2009). Further, technical and professional communication has developed a vast body of scholarship regarding the ethical issues related to professional communication, especially with regard to risk communication, technological determinism and efficiency, and usability (e.g., Lay, 1991; Kostelnick, 2007; Potts & Jones, 2011; Tillery, 2001; Walton, 2011). Finally, technical and professional communication scholars have critiqued and refined best practices as rhetorical, situated and evolving to address changing global and local contexts, various levels of user participation, emerging technologies and economic practices, and issues of social justice (Bernhardt & Mc-Culley, 2000; Dicks, 2010; Simmons, 2008; St.Amant & Flammia, 2016; Zemliansky & Kampf, 2011).

Because our field has developed this body of expertise, scholars have argued the need to go beyond teaching workplace practices to actually shaping and improving them (e.g., Spilka, 1993; Jones, 2016; Lauren & Schreiber, 2018). Technical and professional communication scholars have critiqued the relationships between communication and technology, communication and risk, and communication and scientific knowledge. More recently, in their argument to incorporate disability studies into technical and professional communication courses, Ella Browning and Lauren Cagle (2017) state: “We believe that it is possible and important to both serve students in their pursuit of careers as well as engage in the critical work that enables us to provide social and theoretical analysis of those careers and the systems that produce them, and we believe that TC courses provide the opportunities to do so” (p. 455).

Practices, in other words, contribute to larger systems, and part of our role as teachers and researchers is to critically engage such connections. Pedagogies should be carefully and expertly designed to both accommodate existing practices and prepare students to effectively influence them (Spilka, 1993, pp. 209–10), and the service course is an ideal location for such pedagogical goals. Preparing students to
transfer their knowledge of practices means preparing them to affect the workplace, to think about how best to include users, to develop better practices for international audiences, to improve processes, and to develop and critique models for understanding and analyzing audiences and contexts (Fountain, 2014; Meloncon, 2012; St.Amant, 2015).

The evolution of these two interrelated bodies of research—technical and professional communication practices and technical and professional communication pedagogies—positions those with technical and professional communication disciplinary knowledge as not simply one of many stakeholders in the service courses (along with the disciplines they serve), but as experts in the content and pedagogy of those courses. Thus, instructors must rely more heavily on technical and professional communication disciplinary knowledge in crafting their pedagogies and less on the disciplines served by that knowledge. In other words, technical and professional communication researchers, instructors and administrators have an ethical responsibility to do the “critical work” Browning and Cagle described to ensure students are both prepared for the workplace and prepared to affect discursive systems in order to improve workplace practices.

**Describing and Investigating Service Courses: Special Issue Contents**

This special issue situates the service course as a place for programmatic researchers to promote and shape technical and professional communication best practices in conjunction with a changing workplace, encourages technical and professional communication instructors to look for discipline-grounded answers to pedagogical questions, and helps administrators see the service course as a prominent representation of the technical and professional communication discipline that deserves critical attention and sustained care. The entries included here help answer some traditional questions technical and professional communication has asked about the service course as well as point service courses in new directions. They do so by surveying those teaching the course, interviewing faculty in disciplines representing the students taking the course, recommending strategies for change at individual institutions, and suggesting new pedagogies.
This special issue begins with perspectives on the service courses from the disciplines they are intended to serve. In “Specialized Technical Writing Service Courses as a Program Sustainability Tool?” Lora Arduser presents a case study of her experience working with other stakeholders within the University of Cincinnati to develop and teach specialized writing courses for students of other disciplines. Drawing from ecological approaches and a focus on the common values that shape the results of such collaborations, she highlights the benefits and challenges faced and explores whether such partnerships can function as a way to make technical and professional communication programs more visible and/or sustainable.

Next, Ann Marie Francis’ article, “A Survey of Assignment Requirements in Service Technical and Professional Communication Classes,” reports technical and professional communication instructors’ perceptions of the reading and writing engineers do on the job and compares them to the results of a previous study which surveyed engineers on the types of reading and writing they engage in at work. Francis’ work, in turn, examines the extent to which the assignments technical and professional communication instructors give align with the actual work tasks of engineering professionals. While the results of her comparison indicate that perceptions held by technical and professional communication instructors for the tasks professional engineers engage in is mostly accurate, Francis also raises important questions related to the transfer of writing skills from classroom to workplace. She acknowledges that the technical and professional communication service course is often taught by faculty outside of the field of professional and technical communication (historically, composition and literature) and asks how this affects how the service course is taught. For example, do assignments and pedagogies popular amongst compositionists, such as multimodal projects, have the same relevance in a technical and professional communication service course as they do in a composition course?

This special issue then moves to perspectives provided by those teaching and administering the service course. In “Who Teaches Technical and Professional Communication Service Courses? Survey Results and Case Studies from a National Study of Instructors from All Carnegie Institutional Types,” Sarah Read and Michael Michaud report the results of their study of 220 faculty members teaching the technical and professional communication service course across a variety of institutional types. Their study highlights instructor diversity in terms
of academic position, disciplinary training, professional or industry background, area(s) of research focus, and access to professional development. Their results indicate that many of the graduate students and faculty teaching service courses are interested in technical and professional communication, but it is not clear how many instructors have technical and professional communication backgrounds or receive professional development in the technical and professional communication discipline. Although the authors suggest that the localized nature of the experiences expressed across four case studies do not readily translate into field-wide recommendations for the service course, they encourage readers to look for common ground as a way to foster opportunities for dialogue.

From this point, the focus of the issue moves to sustainability and care. Teena Carnegie’s article, “Sustaining Service Learning in the Service Course,” presents four service-learning models commonly used in technical and professional communication courses and examines the benefits and limitations of each, seeking a sustainable model of service learning for technical and professional communication courses. She draws from her own experiences implementing iterations of these four models at a regional university, showcasing the importance of continuous reflection and revision in the development of service courses that are both sustainable and civicly engaged. Further, her contribution also serves as a reminder that the service course deserves continuous attention and should not be ignored during the pursuit of program development.

Next, we turn to methods for re-evaluating the service course and new pedagogies. Kirk St.Amant’s article, “Contextualizing the Technical Communication Service Course: A Research Approach to Reviewing, Re-thinking, and Revising the Service Course,” begins with the premise that, while program administrators understand the many and layered contexts for examining and evaluating the service course, they lack a clear mechanism or study design to gather that information. Consequently, he offers a systematic framework for collecting data at the institutional, programmatic, department, and classroom levels, including discussion of the objectives and questions, and materials and methods for each level. Although the application of such a framework is necessarily localized to a particular course in context, the clear design allows for replicability and comparison across settings.
The final research article in this special issue is “Design Thinking via Experiential Learning: Thinking Like an Entrepreneur in Technical Communication Courses,” in which Jennifer Bay, Richard Johnson-Sheehan and Devon Cook respond to the changing dynamics of the workplace. Building from recent scholarship on entrepreneurship in technical and professional communication, they recommend incorporating design thinking concepts as a rhetorical approach for supporting an entrepreneurship model. They provide examples of the model’s implementation and argue for scaffolding throughout the curriculum in order to make entrepreneurship a part of larger curricular goals. Acknowledging the continued importance of genres, they position learning in an experiential environment in which traditional genres will be used and advanced and new ones will be invented to support emerging workplace practices. In doing so, they offer an alternative to the traditional genre approach.

We next offer a reflection on the entries in this special issue with Lisa Meloncon’s “Critical Postscript: Where Do We Go From Here With the Service Course,” which complicates the findings and recommendations presented in these articles by raising important questions about labor, disciplinarity, methods, and the necessary messiness of programmatic research. As with most research, the answers provided by the entries in this issue raise a new set of questions. Specifically, Meloncon raises questions about the methods technical and professional communication uses to study the service course, pushing researchers to multi-institutional studies and to develop methods that acknowledge the complexity of technical and professional communication programs.

She also raises important questions about the extent to which other disciplines, particularly composition, are allowed to shape service courses. Further, she offers some specific data from which to build.

It is our hope as editors that, collectively, these entries can serve as a basis for helping the field to critically reflect on service courses as well as serve a place to build programmatic research. In an Afterword titled “Service Courses as an Extension of the Discipline,” we offer suggestions for building from the questions raised in these articles from a programmatic perspective to promote a sustainable identity for the discipline.
References


Specialized Technical Writing Service Courses as a Program Sustainability Tool?

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**Abstract.** This study employs a case study design to report on evidence about a perceived need for and interest in the development of specialized technical writing courses at the University of Cincinnati. The study identifies three challenges and some potential solutions being used in this particular institutional ecosystem that may help other program administrators seeing a similar trend at their institutions.

**Keywords:** course design, service course, sustainability, undergraduate curricula

Curriculum decisions in technical and professional communication programs are influenced by a combination of external and internal pressures. As early as 1982, Robert Connors outlined many of the initial external influences, including the Civil War, the Industrial Revolution, the Depression, World War II, and the GI Bill. More recently, scholars have discussed external forces such as the ever-increasing pace of technological innovation (Albers, 2005; Allen & Benninghoff, 2004; Selber, 1994; Spilka 2009a), societal changes that support an argument that technical writing skills are needed by everyone (Kimball, 2017), and the national financial situation that has forced us to “do more with less” (Tillery & Nagelhout, 2015, p. 1). Many
decisions also are likely fueled by external pressures felt by universities in general (and humanities in particular) for explaining the value of a college degree as it relates to future employment—a concern that has fueled interest in experiential opportunities (see Berner, 2015 and Gallagher, 2016) and classes that teach so-called transferable skills, including technical writing.

As Dave Yeats and Isabelle Thompson (2010) noted in their survey, technical and professional communication programs also have to consider the “unique combination of local constraints, personalities, concerns, politics, and interests” (p. 260) when planning and revising curricula. Such factors can include new faces in universities’ higher administration and the accompanying shift in strategic initiatives as well as institutional decisions and policies about funding for technology and tenure-track lines (see Ford & Lanier, 2011; Johnson, 2009; Leslie & Northcut 2013; Maylath, Grabill, & Gurak, 2010; Meloncon, 2014; Miller, 2017; Sullivan, 2009). Along with these university-wide forces, technical and professional communication administrators need to consider where to focus programmatic resources as both the number of technical and professional communication majors grows (Meloncon & Henschel, 2013) and the need for service courses continues.

Given the heterogeneous nature of technical and professional communication programs, much of the existing research on external and internal forces influencing curricular decisions has involved case studies of individual programs, including those featured in the Program Showcases in past issues of Programmatic Perspectives (Adkins & Frick, 2009; Beard, 2010; Brady, Hayenga, & Ren, 2012; Carter, 2013; Devoss & Julier, 2009; Ford & Lanier, 2011; Gulbrandsen, 2012; Harner, 2010; Ilyasova, 2013; Malone, Wright, & Roberson, 2014; Slattery & Cleary, 2014). In this article, I use a similar case study approach with interviews to examine a trend at the University of Cincinnati (UC)—a demand for specialized versions of the technical writing course—and investigate it as an opportunity for enhancing program sustainability efforts.
The case study presented here joins other technical and professional communication and composition research that employs ecological concepts (Ashe & Reilly, 2010; Bemer & Henning, 2015; Cooper, 1986; Killingsworth, 2005; Reilly, 2015; Sullivan, 2009; Syversen, 1999; Wardle & Roozen, 2012). Specifically, drawing on Diana Ashe and Colleen A. Reilly’s (2010) argument that “academic departments are ecosystems of their own, and that by thinking of them in this way we can highlight the spatial, geographic, and relationship aspects of academic units and the importance of considering these elements for the growth of programs within these units” (p. 93), and Colleen A. Reilly’s (2015) case for seeing the university as an ecosystem, I examine perceptions of the technical writing class in UC’s ecosystem. Paying specific attention to the concept of shared social values (Irvine et al., 2016), the case study focuses on gathering data for what anecdotally seems to be a writing in the disciplines (WID) trend toward interest in more specialized versions of the traditional technical writing service course at UC. Jasper O. Kenter et al. (2015) characterized shared social values of ecosystems as “underlying characterized shared social values of ecosystems as “underlying cultural values that might help shape the institutions necessary to make the ecosystem services framework operational” (p. 87). In technical and professional communication, Jo Allen (2010) argued that mapping such values is useful for grounding program assessment; such mapping also provides data for decisions about allocating resources and connecting with other parts of the university ecosystem.

In this study, identifying these values, institutional opportunities, and constraints can help address the following research question: What internal factors influence a perceived need for specialized technical writing classes and can an expanded service profile be a strategy for increasing a program’s sustainability? In other words, can

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1 It is the beyond the scope of this article to review the considerable literature on the writing across the curriculum (WAC) and writing in the disciplines (WID) movements. Readers will find an excellent introduction to these movements and their histories in David R. Russell’s (1991[2002]) text, *Writing in the Academic Disciplines*, and Charles Bazerman and David R. Russell’s (1994) edited collection, *Landmark Essays on Writing Across the Curriculum*. 
implementing a suite of specialized technical writing courses make our program “less invisible” (Karis, 2001, p. 11) to those outside of the discipline and, in doing so, aid efforts to increase enrollments that support program sustainability? To examine this question, in what follows I describe the ecosystem at UC, detail the case study interviews, and discuss challenges associated with taking advantage of this trend to sustain and grow a technical and professional communication program. Finally, I offer some potential solutions in this particular institutional ecosystem. This discussion offers a starting point from which to identify opportunities and barriers related to such specialization trends in technical and professional communication more broadly.

**Literature Review**

In technical and professional communication, program visibility is linked to disciplinary issues of identity, power, and legitimacy, long-time concerns for the field that have sparked edited collections (see Kynell-Hunt & Savage, 2003, 2004; Scott, Longo, & Wills, 2006) as well as numerous journal articles (see Allen 1990; Bloch, 2011; Faber, 2002; Faber, & Johnson-Eilola, 2002; Hart & Conklin, 2006; Henning & Bemer, 2016; Killingsworth, 1999; Moore, 2006, 2008; Slack, Miller, & Doak, 1993; St.Amant & Meloncon, 2016). Perhaps driven by the perception Rachel Martin Harlow (2010) discussed—a perception that academic homelessness might mean weakness—much of the scholarship on identity, power, and legitimacy has focused on matters of place. Some scholars have talked about our place in terms of the academic and industry spheres (Boettger & Friess, 2016; Bosley, 1988; Bridgeford & St.Amant, 2015; Coppola, 2010; Henschel & Meloncon, 2014; Rehling, 2004; Sapp & Zhang 2009; Smeltzer & Suchan, 1991; Tebeaux, 1985; Thrush & Hooper, 2006; Tovey, 2001). Others discuss situating the field in relation to other fields (Brady, Johnson, & Wallace, 2006; Kent, 2007; Locker, 2003; Longo, 2000; Reave, 2004; Spigelman & Grobman, 2006; Todd, 2008; Wishbow, 1999; Wojahn, Dyke, Riley, Hensel, & Brown, 2001) or our place within the academy (Faber, 2002; Hayhoe, 2006; Rude, 2009; Wishbow, 1999).
Scholarship on departmental homes is a particularly rich vein of literature concerning place. Since the well-documented historical split of technical writing classes from colleges of engineering (Kynell, 2000; Longo 2000), survey data (Harner & Rich, 2005; Meloncon, 2009; Meloncon & Henschel, 2013; Yeats & Thompson, 2010) has shown that programs migrated to a variety of new homes, including humanities, communications, writing and rhetoric, general studies, and engineering. The majority of programs (roughly 61-64 percent), however, are located in English departments (Meloncon & Henschel, 2013). Much of the literature on departmental homes has focused on programs’ ability to thrive in whatever their location is. In their survey, Yeats and Thompson (2010) detailed the existence of thriving graduate and undergraduate programs both inside and outside English departments. In the same special issue of Technical Communication Quarterly, Bruce Maylath, Jeff Grabill and Laura J. Gurak (2010) offered a profile of four programs as evidence for their argument that technical and professional communication programs in the US seem to “flourish” when they are housed outside of large departments, including English departments, and argued that programs “often flourish still more” if the program is in an engineering, applied science college or land-grant school (p. 263). Kathryn Rentz, Mary Beth Debs, and Lisa Meloncon (2010), while acknowledging that English as an academic home is not without issues of marginalization, also concluded that technical and professional communication can flourish in an English department. Eschewing a home at all, Harlow (2010) went so far as to suggest that being “homeless” is a position of power. She commented that because “we have no ‘home’ among the disciplines of the modern-day academy; our research questions, theories, methods, practices, and areas of expertise are so diverse as to suggest to some a muddled identity” (p. 318), which some technical and professional communication scholars see as an indication of both a “disciplinary weakness” and the “lack of institutional value” (Harlow, 2010, p. 319).
The issue of a programmatic home’s impact on program growth and sustainability are often tied to a program’s visibility. As such, technical and professional communication administrators in various homes find themselves in a similar position to Trent Leslie and Kathryn Northcut (2013), whose survey of undergraduate students suggested that their program did not have good visibility at their university. In discussing efforts to make their program more visible by linking a requirement for a technical communication course to general education requirements, Lu Rehling and Neil Lindeman (2010) articulate the frustration related to the lack of program visibility that many in technical and professional communication programs have felt in discussing their effort to increase their program’s visibility by integrating courses within the general education curricula:

Nothing has been more frustrating for us as advisors over the years than meeting students who bemoaned the fact that they “never heard of” our program and “didn’t know it existed” until they were too far along on their paths to graduation to make technical communication a focus of study. A lower division course could help to prevent the existence of our program being unintentionally a well-kept secret. (p. 94).

Various other efforts have been made by program administrators to improve program visibility. Some scholars have suggested making connections external to academic campuses (see Brady, Johnson, & Wallace, 2006; Tovey, 2001). Robert R. Johnson (2009) suggested we need to make our “intellectual identities” visible (p. 53), a suggestion that others have spoken of by more clearly articulating our research and research questions as a field (Blakeslee, 2009; Blakeslee & Spilka, 2004; McKee, 2016; Rude, 2009, 2015; Russell, 2009; Spilka, 2009b; St.Amant & Meloncon, 2016). At UC, Rentz, Debs, and Meloncon (2010) suggested a way to increase visibility through being seen as “visible contributors” (p. 290) to the department. Ford and Lanier (2011), on the other hand, argued that the solution to this vexing problem of visibility is really one of education and marketing. Recognizing that “as technical communication professionals, we certainly possessed the skills to solve those issues” (Ford & Lanier, 2011, p. 97), they took it upon themselves to market the program and instruct others at the university about how their program could interconnect and add value to projects around the campus.
Efforts to grow our own majors have been seen as a way to make our programs more visible as well. In her epilogue in “Technical Communication 1950–1998: Where Are We Now?” Katherine Staples noted that the changes in technical communication education between 1950 and 1998 led to “disciplinary maturity” (1999, p. 160) and this disciplinary maturity meant moving away from the service course that had been the foundation of technical communication as a discipline. Barry Maid (2015) and Corinne Renguette, Marjorie Rush Hovde, and Wanda L. Worley (2015) discussed such efforts in the age of austerity, while others have added to the literature on these efforts through their work in tracking program growth (Meloncon, 2009, 2012; Meloncon & Henschel, 2013; Nugent, 2009). In contrast to these views that growing majors is the way to grow programs, Miles Kimball (2017) and Yvonne Cleary and Madelyn Flammia (2012) have argued for a WID approach to grow and sustain technical and professional communication programs. These views suggest that although the service course has been seen as disempowering to the discipline, the need for technical communication skills in today’s world nevertheless points to this approach as the direction to take to grow technical and professional communication programs (Kimball, 2017).

The UC Case Study
Case studies can be used to elicit the perspectives of a specific group of people in a particular setting and are appropriate for a variety of reasons (Yin, 1994). They typically “combine data collection methods such as archives, interviews, questionnaires, and observations” (Eisenhardt, 2002, p. 9). This case study draws on interviews gathered through a purposeful sampling strategy (Koerber & McMichael, 2008), which was designed to elicit information-rich cases related to the phenomenon of interest through selecting individuals who are especially knowledgeable about or experienced with a phenomenon of interest (Cresswell & Plano Clark, 2011). Along with being knowledgeable, it is important for these individuals to be available and willing to communicate their experiences and opinions in a reflective manner (Bernard, 2002; Spradley, 1979). Given these criteria, it is equally important for the researcher to be able to identify such individuals. My own knowledge of the UC system and my relationship with various departments enhanced my ability to identify appropriate faculty to interview in order to get the full range of perceptions about technical writing courses in this ecosystem.
This study was approved by UC’s IRB. Interviews took 30-60 minutes and were audio recorded. The individual, face-to-face interviews were conducted after the consenting process was completed. Along with the interview transcripts, data for the study included curriculum documents from interviewees’ departments, department website text, and information from departments’ curricula meetings.

The Case Setting
An urban public research university, UC was chartered in 1819 as Cincinnati College, and in 1870, the city established the University of Cincinnati. UC joined the university system of Ohio in 1977 (University of Cincinnati, 2016). In all, the university enrolled more than 44,000 students in 2016. Approximately 33,000 of these students are undergraduates. As described by Rentz, Debs, and Meloncon (2010), the Professional Writing program at UC began in 1977, as an undergraduate certificate in the English department writing program, which included the areas of professional writing, creative writing, and journalism. In 1984, two tenure-track faculty were hired for the professional writing area. In 1985, the writing program was awarded $1.3 million in funding from an Ohio Board of Regent’s Academic Challenge Grant. The grant provided funds for a third tenure-track faculty in professional writing along with full-time non-tenured faculty in journalism, creative writing, and professional writing. A fourth tenure-track faculty was hired in 2006, and the following year a non-tenure track faculty member was added. Given these additional resources, the program was able to move the undergraduate professional writing certificate to a track in the English BA in 2008. In addition, the MA, which started as a track within the department in 1986, was approved by the Ohio Board of Regents as its own MA in Professional Writing in 2015 (M. B. Debs, personal communication, 2017).

At UC, the Technical and Scientific Writing service class (ENGL 4092) has been taught by professional writing faculty as a part of the engineering students’ curriculum since 1985. Since 2008, all undergraduate professional writing majors have been required to take ENGL 4092 or ENGL 4091 (Writing for Business) as part of their curriculum as well. Over the last five years, members of our faculty also have approached and been approached by faculty in other departments to discuss the possibility of designing specialized classes based on the technical writing class. In the following sections, I provide data from
Specialized Technical Writing Service Courses

interviews with members of four departments that we have worked with in these efforts. Conversely, in order to better understand why departments might not see such a class as a benefit for their students, I also provide data from an interview with the undergraduate studies director of the neuroscience department, a department with which our program has not collaborated (Table 1).

Table 1. Study Interviewees

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<tr>
<th>College</th>
<th>Department</th>
<th>Interviewee’s Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of Education, Criminal Justice, and Human Services (CECH)</td>
<td>Information Technology (IT)</td>
<td>Capstone Instructor</td>
</tr>
<tr>
<td>College of Medicine</td>
<td>Medical Sciences</td>
<td>Undergraduate Program Director and Curriculum Committee Head</td>
</tr>
<tr>
<td>College of Arts &amp; Sciences</td>
<td>Pre-Professional</td>
<td>Program Advisors (2)</td>
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<tr>
<td>College of Arts &amp; Sciences</td>
<td>Psychology</td>
<td>Undergraduate Studies Director</td>
</tr>
<tr>
<td>College of Arts &amp; Sciences</td>
<td>Neuroscience</td>
<td>Undergraduate Studies Director</td>
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Challenges and Potential Solutions: Cases in Point at UC
My findings suggest that efforts to specialize the traditional technical writing service course can increase program enrollments in what has been characterized as an age of austerity (Tillery & Nagelhout, 2015). However, program administrators need to be aware of the complications of such efforts as they consider their own local institutional ecosystems. In UC’s ecosystem, challenges include concerns about limitations to students’ schedules, the demands of constant contact for faculty, and a lack of the shared social value of writing at the institution.
Challenge and Potential Solution 1: Students’ Schedules
My interviewee in the department of neuroscience expressed a number of concerns about adding a specialized writing class to the curriculum for the department’s majors. According to the interviewee, their students are varied in terms of their interests; some are more biology focused and medically inclined, and others are interested in mechanics of brain and nervous system. Still others are interested in human behaviors, personality, and psychology. Students, therefore, can take one of three majors: brain, mind, behavior; neurobiology; or neuropsychology. Neuroscience students may go on to graduate school, medical school, law school, and/or health-related fields including clinical psychology, nursing, genetic counseling, physical therapy, and public health. Although my interviewee recognized that strong writing skills are important to these students in their undergraduate work and thereafter, he appeared to leave the acquisition of these skills to an ambiguous source, stating, “Clearly they know how to write… hopefully they learn how to write well.” He also noted that the faculty in neuroscience take on students’ writing as part of their courses in the major. In this department, the faculty incorporate writing into their students’ lab course. Students are required to write a scientific article for a specific journal in their field. The instructors (the course is team-taught) handle grading by imitating the journal peer review process. Students also write several reports throughout the course.

Given the fact that students in the natural sciences and some social sciences have extremely inflexible schedules and that the neuroscience faculty already incorporate writing assignments into their existing major classes, my interviewee did not see the value in adding an additional requirement even though he thought the writing class would benefit their students. He did suggest, however, that students might be interested in such a class if it replaced one of the existing English requirements, the English composition courses (ENGL 1001 and ENGL 2089) taken as part of the university’s general education requirements. He said that switching required classes rather than adding a required class would decrease the likelihood that students would see the class as something “tacked on” on to their degree requirements. In other words, students would see the class as an opportunity rather than an obstacle standing between them and graduation.
To address this challenge at UC, we are currently working on mid-collegiate, specialized technical and scientific writing courses that carry a Breadth of Knowledge (BoK) code so that students could fulfill a university requirement with the course. At UC, BoK courses are defined as those that “are of general value and interest and might be ones that programs recommend to their students on a routine basis” (UC, 2017a). These courses run at the 1000-, 2000-, and 3000-level. Therefore, creating specialized writing courses at the 3000-level could be beneficial in generating enrollments for those courses.

**Challenge and Potential Solution 2: The Demands of Constant Contact**

Although some departments, like neuroscience, have little interest in encouraging their students take a specialized technical and scientific writing class, other departments at UC are interested in such a mid-collegiate writing class. Therefore, these classes could offer avenues for increasing our technical and professional communication enrollments. As my findings suggest, however, efforts to increase enrollments through such specialized instruction requires that we maintain constant contact with a variety of individuals in different academic departments to be successful. The cases from our efforts with UC’s new medical sciences undergraduate degree and the Information Technology (IT) program in the College of Education, Criminal Justice, and Human Services (CECH) point to this particular challenge.

The first case, our work with the medical sciences program, involved time-intensive collaborations with the program’s curriculum committee. After accidentally finding the website for the College of Medicine’s new undergraduate program—a program that started in Fall of 2015—, I contacted the curriculum committee chair to see if there was interest in a writing class for their upper-level majors to help them prepare for graduate work as clinicians or research scientists. The capstone instructor in this program and another faculty member who had taught scientific writing in the past were particularly interested in working with me on the content of this class. With the committee’s and my department’s approval, I developed Writing in the Medical Sciences (ENGC 4096), a course that would fit in their curriculum as an elective in the fall of the fourth year.
The program director also was effusive in his support of literature and the arts as being valuable for the researchers and doctors they would be training saying:

Our interest in the whole program to start with had to do with the fact that most of the physicians and scientists we’ve worked with had difficulties communicating their thoughts both orally and in written form. And part of this has to do with the fact that they frequently don’t have a background in organizing their thoughts and presenting them. It’s not something that is taught in scientific curricula and the assumption has always been made that they will somehow imbibe this through osmosis…so our interest was to turn to the arts. And we think that people in the arts and literature have communicated ideas and thoughts and symbols for a long time—have mastered the art and actually made a science of it. And it was quite appropriate for scientists and medical people to actually go and learn these things from the artists…We think this [the ability to communicate thoughts] can be taught not just through scientific writing, which of course is very important, but a strong core in writing and poetry, especially poetry. Thoughts can be communicated in a deep and true way in the great poems as they can be in great science.

Because of his interest, I convinced our department head and director of the composition program to attend some of the curriculum meetings with me and encouraged them to collaborate with the medical sciences program to devise other sections of classes in the English department that the students could take together in their learning communities.

Along with putting other members of my department in contact with faculty in this program, my work on the medical sciences curriculum committee resulted in additional collaborations. One such collaboration was with the advising staff from the university’s pre-professional programs. These programs do not offer writing courses, but each semester non-faculty advisors do offer seven workshops that focus on writing personal statements for applications to graduate, medical, and law schools. If a student attends a workshop, advisors will provide one-on-one feedback on drafts. As my two interviewees from the pre-

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Pre-professional tracks in the college include pre-dentistry, pre-law, pre-medicine, pre-optometry, pre-pharmacy, and pre-veterinary medicine.
professional advising staff noted, they do not have formal training in teaching students to write, and, therefore, they feel “intimidated” in their efforts to help students. Because of this apprehension, these advisors, similar to the capstone instructor and other members of the medical sciences curriculum committee, were extremely enthusiastic about what the specialized writing course I developed could offer their students. Yet, when we offered the first two sections in 2016 and 2017, even though the advisers in the pre-professional program advertised the courses and encouraged students to take them, the sections were drastically under-enrolled and canceled.

Of course, it can be expected that advising and promoting classes that are electives for students will require time and effort. We found, however, that these efforts were just as important for required classes, such as the specialized section of ENGL 4092 we developed for the IT majors in the college of education. The IT capstone instructor that I interviewed wanted such a course to prepare the students for their capstone experience in the program. The course spans students’ entire fourth year with Senior Design Project Management I in the fall semester and Senior Design Management II in the spring. The course we developed, ENGL(T) 4092, is scheduled in either the fall or spring of the student’s third year. The course goals are to help prepare students for the writing they will do as part of their senior design capstone projects, which are presented at the college’s annual IT expo. The students produce a paper, an abstract, a poster, and a five-minute oral presentation. In our conversation, my interviewee also indicated that he was interested in specializing the section of technical writing for his students because it would help them to “learn to write like a tech person writes.” Therefore, much like WID classes, he has made efforts to build writing into the curriculum beyond the single specialized writing class offered by us, including multiple writing and presentation opportunities in a series of their other required courses.

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3 UC requires a senior-year capstone experience for all students. These capstones are designed to demonstrate proficiency in the university’s “baccalaureate competencies (effective communication, critical thinking, knowledge integration, social responsibility, and information literacy) and in the content/skills of the program/major” (UC, 2017b, para 2).
The course development process with our IT collaborators started in 2013 when the capstone instructor contacted our program director who asked a faculty member to work with the IT faculty member to develop the specialized section. The process was described by my interviewee as a collaborative one: “She wanted to hear what I was saying.” Their collaboration included meetings between the professional writing and the IT instructors to discuss the particular capstone writing needs of the IT program. Additionally, the IT instructor participated in class presentations to the specialized section of 4092 to familiarize the students with how the technical writing class was connected to their future work in the capstone class and the professional writing instructor visited the IT capstone classes to help her make decisions regarding course development. Finally, the instructors continued correspondence about advising and enrollment so that the students would be directed to the section that was designed for them.

Much like our experience with the specialized medical sciences writing course, this effort at specialization was only partially successful. Although the professional writing faculty developed the content for the IT section and was prepared to teach it for the IT students, in my conversations with our instructor, I found that the IT department was not advising students to register for this section nor did the department identify the specialized section on their curriculum sheet for majors. Instead, the sheet just listed ENGL 4092. Therefore, students working from this document alone would not realize their major had a specific section they should enroll in. As a result, the IT students were registering for and enrolling in any one of the 13 sections of the traditional technical writing class we have been offering. This outcome suggests that even more effort is needed on our part to reach out to the IT advisors and students.

Efforts for promoting both ENGC 4096, an elective for medical sciences majors, and ENGL 4092(T) demanded time and effort from the technical and professional communication faculty. Some of these efforts were short-term, such as sending the majors’ advisors emails to remind them about the classes. However, more long-term and time-intensive work was involved as well. The time it took to collaborate with the IT capstone instructor on developing course materials and the extra service responsibility undertaken by a faculty member as the advisor for the medical sciences majors reading club included significant time commitments on the part of these technical and professional communication faculty members. These longer-term
obligations, including my own commitment to participate on the pre-professional programs advisory board, further tax the already limited resources of UC’s professional writing program and potentially shift resources away the program’s own majors.

Developing such specialized sources or course sections also results in additional planning time for course development. Quite frankly, when comparing the descriptions and learning outcomes of the three classes at UC (the traditional technical writing course, the course developed for the medical sciences majors, and the class developed for psychology), one is compelled to ask whether these efforts in specialized course development and instruction are real or perceived. This perception is supported by my interviewee with the faculty member from the IT department. When he described the types of writing his students do, it became clear that there was strong overlap with what was already being taught in the typical section of ENGL 4092 including in the following topics: 1) style, 2) collaborative writing with team projects, 3) proposals, 4) posters, 5) project management, and 6) audience analysis. As such, the specialized section developed for this major looks similar in terms of the assignments the instructor makes and faculty efforts to specialize sections of the class are simply resulting in duplication.

At UC, we are currently working on a strategy to address these drawbacks. It involves specializing the classes by focus rather than discipline. Rather than teaching a technical/scientific writing class for chemistry majors, for example, chemistry majors (as well as biology and physics majors) could take a writing class that concentrates on writing in technical/scientific workplaces or a class that emphasizes research writing. With this approach, planning efforts could be limited to developing materials for two classes rather than dozens. Additionally, these efforts increase our chances for finding qualified future hires because we will not have to necessarily find instructors with a specific disciplinary knowledge as well as the ability to teach writing.

Our first experience with this strategy involved our work with the psychology department. In the fall of 2015, a member of the university’s psychology department sent an email to our department head to ask about having our department working with them on a writing course for their majors. The faculty had concerns similar to those of the IT faculty—ensuring students had strong writing skills to bring into their capstone courses. They also recognized the importance of
writing skills for a successful career in graduate school and for getting jobs after college. The impetus for the request came from discussions between faculty members in the psychology department about a major revision of their undergraduate curriculum. The university underwent a shift from a quarter system to a semester system in 2012, and according to my interviewee from psychology, it became clear to the faculty that they needed to look at curricular changes that did occur in that transition. A recurring theme in these conversations was their students’ writing. In describing their curricular review, my interviewee explained:

We started at the end. We looked at what skills we want students to leave with, so we talked to employers—What do they want to see our students have?—we talked to faculty who are teaching upper level courses—What do students need more of?—and we talked to the students. One of the big needs identified was writing skills. Students were saying that they felt as though they had not had enough direct instruction in technical writing or that it was sporadic throughout their major.

Although writing is embedded in many of their 3000-level courses, the faculty curriculum committee saw a need for a course that specifically focused on writing taught by people trained to teach writing. The psychology faculty interviewee continued, “It’s not necessarily a strength of ours to teach writing. We have many people in the department who are very well published and are excellent writers, but they’ve not been training people to write. So we said, Why don’t we partner with English and let the experts do it?”

In a series of conversations with myself, my department head, and the faculty of the psychology curriculum committee, we identified the department’s needs and our interest in helping them to fulfill these, as well as our constraints in doing so. As a small faculty (7) with teaching loads for our own professional writing majors as well as a long-time relationship in serving the College of Engineering majors, we had obvious concerns about being able to fulfill the psychology department’s request with our existing resources. As such, the English department head, with the backing of the head of the psychology department head, requested a non-tenure track hire for professional writing. This request was approved, and the search committee began its work in 2016, resulting in a hire. The person hired to teach the
sections of the psychology writing class—Writing in the Behavioral Science (ENGL 3062)—does not have a background in psychology but does have one in scientific research writing. In addition, the syllabus for the class is designed so that it teaches students to engage in scientific research writing practices. As such, the course materials can be adapted to other science, technology, and social science programs interested in having students take this type of writing class.

**Challenge and Potential Solution 3: Writing as a Social Value**

The final challenge identify through this study was that at UC the value of developing technical and scientific writing skills is not a shared one across the institution. In my interview with the undergraduate director from neuroscience, it was clear that their faculty do not necessarily see the value of the expertise of teachers of technical and scientific writing, and, by extension, the value of a specialized writing course. The curriculum on the department’s website seems to reinforce this interpretation: a technical writing class is not specifically listed as an out-of-track elective for students.

Although the faculty in the psychology department saw the value of requiring such a class and having someone in our discipline teach it, my assessment of their curriculum documentation suggests that even if departments value such a course for their students, they do not necessarily value technical and professional communication as a discipline. In the psychology curriculum map, for example, the specialized writing class is listed as Skills course (Figure 1), suggesting a perception that writing is useful for students’ learning but also de-emphasizing technical communication’s position in the humanities (see Miller, 1979) and its ability to attend to “history, artistry, and well-developed social relations” (Moeller & McAllister, 2002, p. 185) and to create critical thinkers and ethical decision makers (Miller, 2017).

Similarly, while both the humanities in general and writing more specifically were touted as highly important areas for the medical sciences majors to take, these values are absent on the program’s website, which describes the program as “an innovative pathway that provides students with integrated academic, experiential, and mentored opportunities that will prepare them for advanced training in biomedical science, medicine, and other health professions” (UC, 2017c, para 2).
Figure 1. Revised Curriculum for BS in psychology at UC.  
Source: The University of Cincinnati’s website.

Additionally, even though free electives such as Psychology 1001 and Sociology 1001 are “recommended” in the curriculum lists found online, no humanities or writing classes are specifically suggested for medical science majors. This absence includes the specialized technical writing class we had been discussing, even though the medical sciences curriculum committee was enthusiastic about the fact that such a course would specifically address particular needs of their students: advanced writing skills for their capstones, training for the critical thinking part of the Medical College Admission Test (MCAT) and crafting personal statements for medical school applications.
Given the findings from this case study, program administrators interested in aiding program sustainability efforts through a larger service portfolio may need to do additional work in creating a robust, shared university value of technical writing and technical and professional communication to overcome the current, non-use value ascribed to it, a value that people acknowledge but never directly use or plan to use. To do so requires less concrete efforts than those offered for the previous two challenges discussed. At UC, our work toward such culture change takes place formally by having technical and professional communication faculty attend other department’s faculty meetings and university recruiting events to make the technical and professional communication program more visible and engage in a type of education about what the field offers students. Just as importantly, we are creating collaborations within our own department that help encourage our colleagues in literature, creative writing, and composition to help with these efforts at a more grassroots level.

Conclusion
The findings from this study revisit a recurring question in technical and professional communication but suggest taking a different view. As we develop new alliances through efforts of specialization and otherwise, we find ourselves circling back to the question Sam Dragga asked: “Is it better to be a separate department or a separate division within a department? Is it better to be allies of English, allies of Communication, or allies of Engineering?” (2010, p. 1). As we reach out to areas such as IT, psychology, medicine, and the pre-professional disciplines, do we need to revisit this question of location? If so, would it make a difference in weighing the opportunities and costs of increased specialization in the service course and our efforts to grow programs for our own majors? Harlow’s (2010) argument for homelessness to allow for greater administrative flexibility and marketability might make sense as we undertake such a variety of interconnections, but an ecosystem approach such as the one presented here can be more valuable because it can better account for the ability of a “home” to change. As the literature in ecosystems services has noted, these systems change through both direct and indirect drivers, and change occurs in the long term and short term (Millennium Ecosystem Assessment, 2000).

Our institutional landscapes also change, as evidenced by departments revising curricula, higher administration rolling out new strategic plans, and department heads and chairs shifting. Similar to studies
by Ford and Lanier (2011) and Rehling and Lindeman (2010), the findings from this study suggest that opportunities for collaborative initiatives that might benefit our programmatic goals are best received at times of such change—when a new program is launched like our medical science undergraduate program or when curriculum undergoes a significant revision, as in the case of our work with the psychology department at UC. Of course, mapping and assessment efforts also require much of our scarce time. Such mapping at the level of an ecosystem, however, can help to identify options, better understand the trade-offs involved, align efforts on all scales (Millennium Ecosystem Assessment, 2000), and ultimately help program administrators be more strategic than reactive in their efforts to sustain programs and generate evidence needed to argue for resources such as graduate student support and faculty hires. By drawing on an ecosystem perspective at UC, for example, we were able to align efforts within our own department: the elective course developed for the medical sciences resulted in a TA position for a PhD student in our department’s literary and cultural studies program. As stated, the support we saw from the efforts with the psychology department also culminated in a new hire for the professional writing program. Mapping similar efforts in other technical and professional communication programs could help administrators identify their own institutional challenges and opportunities in discovering novel ways to use service courses for program sustainability. Future research undertaking to examine the national landscape of specialized technical writing class programming also might generate new insights into the issues of program homes and program visibility.
Specialized Technical Writing Service Courses

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Specialized Technical Writing Service Courses


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Appendix

1. How long has your program existed?

2. What kinds of writing do your majors do in your classes?

3. What specialized writing courses do you teach (or do you have in your program)?
   a. Has this “roster” changed over the years? If so, how?

4. What is the background of the people teaching these courses? (degree – MA or PhD? Area of specialization?)

5. What relationships/arrangements/initiatives does your department have at the college for helping students with writing? What resources from campus do you use to assist in assigning/assessing writing?

6. What type of writing instruction would benefit your students?

7. What external bodies (e.g., accrediting organizations) influence your curriculum decisions?

8. What internal forces influence your curriculum decisions?
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A Survey of Assignment Requirements in Service Technical and Professional Communication Classes

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Abstract. This study explored the connection between assignments in technical and professional communication classes and the reading and writing demands of professional engineers. Two specific questions were researched: what perceptions do technical and professional communication instructors have about the reading and writing requirements of professional engineers, and how well do the assignments given in technical and professional communication classes align with the reading and writing requirements of professional engineers. Surveys were used to collect data from technical and professional communication instructors and the results were compared to Don Cunningham and Jill Stewart’s (2012) study that surveyed engineers to determine what types of writing they are required to do. This study found that the respondents had some misconceptions about the types of documents engineers read and write and the amount of time engineers spend reading and writing in their professional careers. The results also indicate that instructors do not emphasize reading as much as writing in their classes, although they do feel that engineers spend considerable time reading specific documents in their careers. Additionally, the participants in the study did not always emphasize the same types of reading in writing in their classes as they perceive that engineers do in their jobs.

Keywords: assignments, classroom and workplace alignment, engineering communication, instructor perceptions, on-the-job writing

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When ABET (Accreditation Board for Engineering and Technology), the organization that offers accreditation for engineering programs, adopted the Engineering Criteria 2000 (EC2000) requirements for accreditation, they considered a variety of factors, including faculty qualifications, program goals, facility resources, and curriculum development. As the organization evaluated acceptable curriculums, it focused on student outcomes and preparation for job demands, basically looking to verify that the engineering curriculums adequately prepare students for all aspects of their future careers (Soundarajan, 1999). While the accreditation requirements focus on engineering programs, the new criteria prompted a distinct shift in technical writing pedagogy.

Julia Williams (2001) was one of the first to assert that the new ABET certification requirements would force changes in technical writing programs at universities that offer engineering degrees. She noted that while it is easy for technical communication instructors to see the new requirements as affecting only engineering departments, the changes should instead be seen as an opportunity for “both engineering and technical communication faculty to re-fashion their curricula” (p. 150). She specifically called for changes that would allow students to see the connection between their academic work and their future professional careers, essentially reiterating what Johndan Johnson-Eilola (1996) had pushed technical writing instructors to do six years earlier: connect the assignments to the students’ future educational and career goals and make the work relevant for more than just a classroom assignment.

Williams was not the only person to stress the importance of ensuring that technical and professional communication classes align with workplace expectations. Kelli Cargile Cook (2002) noted the importance of students developing skills that would transfer to the workplace and identified six key literacies necessary for students to be successful in their future careers: basic literacy, rhetorical literacy, social literacy, technological literacy, ethical literacy, and critical literacy. Highlighting the importance of knowledge transfer, Julie Dyke Ford (2004) researched students’ ability to apply rhetorical strategies from technical communication classes to classes within the engineering discipline, finding that the students she studied were able to transfer skills learned in technical communication classes to writing assignments in their engineering courses. Discussing the distinct differences between
academic writing and workplace writing, she argued that “for students to fully grasp rhetorical strategies that call for conceptual thinking and problem solving, they need to have experience writing texts in a context besides the classroom” (p. 310). Pia Lappalainen (2009) also noted the importance of academia preparing students for industry. As part of her research, she studied engineers who were already in the workforce and explored their professional communication demands. She found that although many engineers strive to move to management positions—positions that require strong communication skills—, engineering students feel that communication training is an unnecessary distraction; it is not until after the students are working that they realize the disadvantages of minimal communication training. With these findings, she agrees with Ford and asserts that universities must make changes by “bringing together academic research knowledge with the corporate reality” and “match the quality and content of the course supply with industrial needs” (p. 128).

When considering how best to improve engineering students’ writing skills, Olivier Buzzi, Susan Grimes, and Alistair Rolls (2012) concluded that the groundwork must reside with the engineering faculty, rather than with technical and professional communication instructors. They note that writing in the engineering classes helps students understand the importance of writing as a part of their discipline and future careers, something a sole technical communication class taught in a different department does not do as effectively. While the idea of concentrated writing instruction in engineering classes is favorable to some, others adjust their technical and professional communication classes to align the coursework with workplace writing. Karen Gulbrandsen (2012) felt that a revision of the technical and professional communication class would help meet the course objectives that highlighted a connection to the workplace. To improve the effectiveness of the course, she altered the course requirements and added assignments that reinforce collaborative learning, a skill she considers essential in the workplace. Dana Rus (2015) also strived to improve course effectiveness, but worked first to identify the key characteristics of technical documents. Highlighting the need for instructors to carefully select technical and professional communication assignments, she asserts that “the instructor has the responsibility of equipping students with relevant experience which the students can put to practical use when they enter the labor market” (p. 1110). Rus
A Survey of Assignment Requirements

emphasizes the use of materials that accurately represent those used in the professional world, remarking that doing so not only prepares students better, but also improves student motivation. Jonathan Balzotti and Jacob Rawlins (2016) agree. When they found their students were not connecting the lessons in their communication classes to their future careers, the researchers redesigned their technical and professional communication classes by incorporating a client-based project and workplace simulation designed to “guide students to make connections between their university learning and their future careers” (p. 140). In an effort to determine how best to connect the classwork to the workplace, Balzotti and Rawlins interviewed representatives from engineering firms known to hire their graduates to help facilitate their course design and ensure they were able to identify corporate expectations.

While the research clearly shows a trend for instructors of technical and professional communication classes to develop assignments that represent workplace writing, there have not been recent studies that compare technical and professional communication assignments to industry writing requirements. Don Cunningham and Jill Stewart (2012) initiated the process when they researched the writing demands of professional engineers. The researchers from Radford University conducted an eight-month research project in which they surveyed over 100 engineers in seven different states to analyze “perceptions of time spent by architects and professional engineers on reading, writing, and evaluating various information products, as well as their perspectives of the importance of these activities in meeting work goals” (p. 2). The data from their study provides valuable information on how engineers spend their time. To date, though, there has not be a continuation of Cunningham and Stewart’s study. While Cunningham and Stewart argue that there should be “close parity between what professors teach and what practitioners find important” (p. 9), there have been no recent studies comparing what is taught in the introductory technical and professional communication classroom to the workplace demands of the professionals Cunningham and Stewart surveyed. This study works to continue the conversation by exploring how instructors perceive the time engineers spend reading and writing different types of documents and what assignments those same instructors require in their introductory technical and professional communication classes.
Research Questions
With the primary goal of exploring how well technical and professional communication course assignments replicate engineering workplace reading and writing, I wanted to focus on two things. First, I was interested in how well technical and professional communication instructors understand the reading and writing demands of professional engineers. For instructors to be able to create assignments that accurately represent the workplace, the instructors must have a clear idea of the different types of reading and writing engineers do and the frequency that engineers perform the different tasks. Second, I wanted to know how well the assignments required in technical and professional communication classes parallel the reading and writing required of professional engineers. As noted, there is a push to ensure the technical and professional communication classes are preparing students for the demands of their professional careers, and often instructors work to create assignments that replicate the workplace. I wanted to explore how well technical and professional communication instructors are meeting that goal with their class assignments.

In that vein, I focused on the following research questions as I designed and implemented the research study:

1. How well do instructors’ perceptions of the reading and writing requirements of professional engineers match the actual reading and writing requirements of professional engineers?
2. How well do the reading and writing assignments required in technical and professional communication classes duplicate the reading and writing requirements of professional engineers?

Methods
Because the purpose of the study was to examine how well technical and professional communication assignments parallel the writing requirements of professional engineers, I designed the study to be completed by instructors of college-level introductory technical and professional communication classes. I worked to determine the types of reading and writing the instructors believe engineers do, as well as the types of assignments the instructors require in their classes. Using the data collected, I was able to identify both the instructors’ perceptions of the reading and writing requirements of engineers and the assignments the participants most often required in their technical and professional communication classes. I then compared the results to
consider how well the instructors’ assignments parallel the requirements of professional engineers.

Participants

A total of 62 instructors completed the survey, which accounts for 25% of the 248 listserv members (Dilger, 2015). Of the respondents who completed the demographic questions (60 instructors), 60% were full-time (FT) tenured or tenure-track faculty, with Associate Professor being the most represented rank. Twenty-four (40%) of the respondents were non-tenure track, including 16 (27%) FT-Non-Tenure-Track instructors, five (8%) Graduate Assistants, and three (5%) Adjunct Faculty members. The majority of respondents, 87%, taught at a public college or university with 93% indicating that their school offered engineering degrees. A breakdown of the participants’ job titles is shown in Figure 1.

**Figure 1. Breakdown of Participants' Job Titles**

![Pie chart showing job titles]

The discipline of highest degrees earned by participants varied. The two most common disciplines were professional/technical communication and rhetoric/composition. Twenty-two participants (37%) indicated that their highest degree fell into the field of professional or technical communication, and 16 of the participants (27%) held degrees in rhetoric/composition. English degrees were a close third, with 15 respondents (25%) choosing English as the field of their highest degree earned. Four participants (7%) reported their highest degree was in an education-related field, including instructional technology and design, literacy education, and educational psychology. The following disciplines had one respondent (2% for each discipline): communication, engineering, and reading. Figure 2 shows the breakdown of the discipline of participants’ highest degree.
Procedure
I collected data for the study in the fall of 2015 through an IRB-approved survey. Because my research project considered technical and professional communication instructors’ perceptions and course assignments, I solicited participants for the survey from the Association of Teachers of Technical Writers (ATTW) listserv by sending an email to the listserv explaining the purpose of the study and providing a link to the survey, which was conducted using the Qualtrics research platform. The survey (a copy of which is in the Appendix), was open for 31 days. Participants clicked on the link to access the survey, which was completely online. After verifying that they had taught at least one college-level technical and professional communication class in the past two years, participants were asked to answer questions related to how much time they felt engineers spent reading and writing different types of documents as part of their professional careers. Participants were then asked to consider how heavily they weight different reading and writing activities in their introductory technical and professional communication classes. Next, participants were given the option of uploading copies of their syllabi and assignment prompts, although submitting supplemental documents was not required. The survey asked general demographic questions before thanking the participants and concluding the survey. Participants spent an average of 13 minutes completing the survey.

Measures
The survey was designed with both quantitative and qualitative components. The quantitative portion included questions about participants’ perceptions about the different types of reading and writing engineers do in their professional careers as well as the types
of assignments required in the instructors’ technical and professional communication classes. The questions regarding the instructors’ views of the reading and writing demands of professional engineers asked respondents to rate how frequently they felt engineers were required to read or write specific types of documents, from Very Rarely to Very Often. The questions regarding the instructors’ technical and professional communication assignments asked respondents to indicate how much the assignments are weighted in relation to the final course grade, from Very Little to Very Heavily. The questions used a Likert scale to allow for comparison and ranking (Very Rarely/Very Little = 1; Very Often/Very Heavily = 5). In addition, the quantitative portion of the survey included demographic information such as education level, job title, and primary discipline.

The survey concluded with the option for respondents to provide supplemental materials, including syllabi and comprehensive assignment prompts (prompts that provide details of the assignment, the requirements, and often an outline of grading expectations or rubric). The documents, while not required, provided additional insights into the various assignments required for technical and professional communication classes and how much weight the different assignments are given when calculating the final course grades.

Each supplemental document was reviewed to determine what assignments the instructors require in their introductory technical and professional communication classes. Assignments were classified according to the types of assignments in the survey: correspondence (letters, emails, memos, and/or faxes), meeting minutes, technical reports, proposals, management reports, and manuals. The biggest challenge with the classification of assignments listed on the syllabi and comprehensive assignment prompts was determining how to group different types of reports. To help determine the difference, I emailed five engineers who work for different companies and asked each how they would differentiate technical reports and management reports. The overall opinions from the engineers I contacted were the same: management reports are high level while technical reports provide implementation details that can be replicated. Mark Stevens simply explained that management reports “analyze productivity and profitability” (personal communication, January 2, 2016). When asked about progress reports, Mark Farren elaborated, “Management reports give progress without enough details to replicate the work. I can’t think of a
progress report that would be detailed enough for a technical report” (personal communication, December 30, 2105). Based on their replies, progress reports, recommendation reports, reports to decision makers, and usability test reports were classified as management reports, while technical reports, analytical process analysis reports, and implementation reports were grouped as technical reports.

Locating assignments that would be classified as manuals was not as difficult. Although none of the syllabi and comprehensive assignment prompts included the term manual, several assignments were classified as manuals for the purpose of this study. I grouped both technical instructions and procedures as manuals because the assignments asked students to create documents similar to manuals, such as outlining the steps to complete the task or providing instructions. While all the engineers I contacted about technical versus management reports noted that technical reports are often designed to include implementation details and enough information so the work can be duplicated, they also stressed that technical reports did not stop with the instructions. Technical reports also include “project specific issues…such as cost, population at risk, etc.” (Joe Monroe, personal communication, January 2, 2016). The assignments that were identified as manuals did not incorporate the extra elements that would classify them as technical reports but rather focused on the step-by-step instructions to complete a task or build a project.

The final two types of documentation were the easiest to identify on the syllabi and comprehensive assignment prompts. The first type, proposals, was straightforward. Because several instructors used the term proposal on their syllabi and comprehensive assignment prompts, there was little question about how to group the assignments. Any assignment named proposal on the syllabi and comprehensive assignment prompt was classified as proposals for data analysis. There were no assignments that did not include the term proposal that were included as proposals for the purpose of this study. In addition, there were no syllabi or comprehensive assignment prompts that indicated the instructors require meeting minutes as part of the course requirements, nor were there any assignments that resembled meeting minutes, such as note taking. Some instructors required journal entries, but they were reflective assignments that did not resemble taking minutes during a formal meeting, so they did not match the genre of meeting minutes.
In addition to the assignment types already discussed, several instructors also asked their students to complete assignments that were not included as one of the types of documentation listed in the quantitative portion of this study. The most common additional assignments fell into the category of employment materials. Anything related to obtaining a job was categorized as employment materials, including job application packets, resumes, employment packets, and interview materials. Other assignments that instructors commonly asked students to complete in their technical and professional communication classes included evaluating other students’ work, writing journals, and creating multimodal assignments.

Results
The research looked at two primary areas: what types of reading and writing technical and professional communication instructors think engineers do on the job and what instructors assign in their introductory technical and professional communication classes. For each type of writing included in the study (correspondence, meeting minutes, technical reports, proposals, management reports, and manuals), I provide survey results for both areas as well as information collected from the supplemental documents. Not all participants responded to each section; the averages are based on the total number of respondents for the specific question.

Correspondence
Overall, the respondents report that they believe engineers spend considerable time both reading and writing correspondence, defined as letters, emails, memos, and/or faxes. All of the 61 participants who responded to this question indicated that they perceive that engineers read correspondence either Often or Very Often. Eighteen respondents (29.5%) believe that engineers read correspondence Often, and 43 (70.5%) selected Very Often for how frequently they believe engineers read correspondence as part of their job requirements. The mean score for how much time engineers spend reading correspondence was 4.70 (Very Rarely = 1; Very Often = 5).

The results for writing correspondence were similar. Instructors agreed that engineers spend considerable time writing correspondence. Of the 61 participants who responded, 59 selected either Often (14 responses; 23%) or Very Often (45 responses; 73.8%) when asked how much time they thought engineers spend writing letters, emails, memos and/or faxes. Two participants (3.3%) selected Neutral. The mean score for how much time instructors believe engineers spend writing correspondence was 4.70, the same as the mean score for how much time instructors perceive engineers spend reading correspondence. Table 1 outlines survey participants’ view of the time engineers spend reading and writing correspondence.
A Survey of Assignment Requirements

Table 1. Participants’ views of the time engineers spend reading and writing correspondence, N=61.

<table>
<thead>
<tr>
<th></th>
<th>Very Rarely</th>
<th>Rarely</th>
<th>Neutral</th>
<th>Often</th>
<th>Very Often</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Correspondence (letters, emails, memos, faxes)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>43</td>
<td>4.70</td>
</tr>
<tr>
<td>Writing Correspondence (letters, emails, memos, faxes)</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>14</td>
<td>45</td>
<td>4.70</td>
</tr>
</tbody>
</table>

While the instructors surveyed noted the emphasis on both reading and writing correspondence in professional engineering jobs, the activity was not as heavily emphasized in their classes. When asked how much emphasis the respondents place on reading correspondence in their classes, the most common response from survey participants was Heavily, with 25 participants (40.3%) selecting that option, while Very Heavily was selected by six participants (9.7%). However, more than half selected either Neutral (14 participants; 22.6%), Little (14 participants; 22.6%), or Very Little (3 participants; 4.8%). The mean score for the emphasis that instructors place on reading correspondence fell just above Neutral, at 3.27 (Very Little = 1; Very Heavily= 5).

The instructors who participated in the study placed more emphasis on writing correspondence than reading correspondence in their technical and professional communication classes, with 46 of 62 respondents (74.2%) indicating either Very Heavily (24 participants; 38.7%) or Heavily (22 participants; 35.5%) when asked how much emphasis they put on writing correspondence in their technical writing classes. Only two participants (3.2%) indicated that they put Very Little emphasis on writing correspondence, and three (4.8%) indicated Little. With 11 participants (17.7%) selecting Neutral, the mean for emphasis instructors put on writing correspondence was 4.02. Table 2 shows the breakdown of how survey participants emphasize reading and writing correspondence in their classes.
Almost two-thirds of the instructors who provided syllabi and comprehensive assignment prompts incorporated some assignment component that included correspondence. Of the seventeen syllabi and assignment prompts used for data analysis, eleven (64.7%) had an assignment that included writing a memo, letter, or email for a grade. The average weight of the correspondence assignment was 11.2% of the students’ final grade, with a spread of 5% to 25%. The assignments included business letters, reflective memos, and introductory emails; none of the assignments mentioned the category of faxes which was included in both Cunningham and Stewart’s (2012) survey and my survey as a type of correspondence.

### Meeting Minutes

The instructors of technical and professional communication classes who responded to the survey do not perceive meeting minutes as crucial to professional engineers’ success as they do other types of communication. Of the 61 participants who responded to the survey question, only 2 (3.3%) indicated that they believe engineers read meeting minutes Very Often, and 12 participants (19.7%) responded Often. The most common response to the question “How often do professional engineers read meeting minutes?” was Rarely, with 26 people (42.6%) selecting that option. The second most common answer was Neutral; 18 participants (29.5%) selected Neutral. Only three participants (4.9%) selected Very Rarely. The mean for how often engineers read meeting minutes was just under Neutral at 2.74 (Very Rarely = 1; Very Often = 5).

---

**Table 2. Participants’ emphasis of reading and writing correspondence in their classes, N=62.**

<table>
<thead>
<tr>
<th></th>
<th>Very Little</th>
<th>Little</th>
<th>Neutral</th>
<th>Heavily</th>
<th>Very Heavily</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading Correspondence</strong>&lt;br&gt;(letters, emails, memos, faxes)</td>
<td>3</td>
<td>14</td>
<td>14</td>
<td>25</td>
<td>6</td>
<td>3.27</td>
</tr>
<tr>
<td><strong>Writing Correspondence</strong>&lt;br&gt;(letters, emails, memos, faxes)</td>
<td>2</td>
<td>3</td>
<td>11</td>
<td>22</td>
<td>24</td>
<td>4.02</td>
</tr>
</tbody>
</table>
Even fewer instructors believe that engineers write meeting minutes in their professional careers. The majority of survey participants selected either Neutral (22 participants; 36.1%) or Rarely (20 participants; 32.8%) when asked how much time engineers spend writing meeting minutes. Nine participants (14.8%) felt that engineers write meeting minutes Very Rarely. Only 10 (16.4%) of the instructors in the survey indicated that engineers write meeting minutes either Often or Very Often, with eight (13.1%) responding Often and two (3.3%) responding Very Often. The mean score for how often engineers write meeting minutes was 2.57 or Neutral. Table 3 outlines survey participants’ view of the time engineers spend reading and writing meeting minutes.

Table 3. Participants’ views of the time engineers spend reading and writing meeting minutes, N=61.

<table>
<thead>
<tr>
<th></th>
<th>Very Rarely</th>
<th>Rarely</th>
<th>Neutral</th>
<th>Often</th>
<th>Very Often</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Meeting Minutes</td>
<td>3</td>
<td>26</td>
<td>18</td>
<td>12</td>
<td>2</td>
<td>2.74</td>
</tr>
<tr>
<td>Writing Meeting Minutes</td>
<td>9</td>
<td>20</td>
<td>22</td>
<td>8</td>
<td>2</td>
<td>2.57</td>
</tr>
</tbody>
</table>

Based on the results above, it makes sense that instructors would not emphasize reading or writing meeting minutes in their technical and professional communication classes. The survey indicates that respondents do limit the emphasis on reading meeting minutes, with only 3 of 58 (5.2%) putting either Heavy (1 participant; 1.7%) or Very Heavy (2 participants; 3.4%) emphasis on reading meeting minutes in their technical and professional communication classes. Instead, the majority, 33 participants (56.9%), put Very Little emphasis on reading meeting minutes, and sixteen participants (27.5%) put Little emphasis. Six respondents (10.3%) selected Neutral when asked how much emphasis they put on reading meeting minutes in their technical and professional communication classes. The mean response for how much emphasis instructors put on reading meeting minutes was between Very Little and Little at 1.67 (Very Little = 1; Very Heavily = 5).
While fewer instructors responded that they put Little to Very Little emphasis on writing meeting minutes in their classes, the numbers were similar to the results for reading meeting minutes. Forty-six of the 59 instructors who responded (78%) specified that they put Little (17 participants; 28.8%) to Very Little (29 participants; 49.2%) emphasis on writing meeting minutes in their classroom, while only 4 respondents (6.8%) emphasize writing meeting minutes either Heavily (2 participants; 3.4%) or Very Heavily (2 participants; 3.4%). Nine instructors selected Neutral for how writing meeting minutes are weighted in their technical and professional communication classes. The mean score instructors gave when asked what emphasis they put on writing meeting minutes in their technical and professional communication classes was just under Little at 1.83. Table 4 shows the breakdown of how survey participants emphasize reading and writing meeting minutes in their classes.

**Table 4. Participants’ emphasis of reading and writing meeting minutes in their classes, N=58 (Reading); 59 (Writing).**

<table>
<thead>
<tr>
<th></th>
<th>Very Little</th>
<th>Little</th>
<th>Neutral</th>
<th>Heavily</th>
<th>Very Heavily</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Meeting</td>
<td>33</td>
<td>16</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>1.67</td>
</tr>
<tr>
<td>Minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing Meeting</td>
<td>29</td>
<td>17</td>
<td>9</td>
<td>2</td>
<td>2</td>
<td>1.83</td>
</tr>
<tr>
<td>Minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on the responses given for the quantitative questions about meeting minutes, it is logical that meeting minutes were not included as an assignment or a component of an assignment in any of the syllabi or comprehensive assignment prompts provided by participants. Nor were meeting minutes mentioned in any of the other documents provided by the instructors who supplied syllabi and/or assignment prompts for the study.
Technical Reports

Technical reports rated much higher than meeting minutes, both in how much time the instructors feel engineers spend reading and writing technical reports and in how heavily the documents are weighted in the participants’ technical and professional communication classes. No survey participants responded that engineers Very Rarely read technical reports and only three (4.9%) indicated that engineers Rarely read technical reports. Instead, the vast majority, 54 of 61 participants (88.5%), indicated that engineers read technical reports either Often (25 participants; 41%) or Very Often (29 participants; 47.5%) in their professional careers. Four of the 61 instructors (6.6%) responded Neutral. The mean response to how much time instructors believe engineers spend reading technical reports was 4.31, a little more than Often (Very Rarely = 1; Very Often = 5).

Similar responses were given when asked how often engineers write technical reports; none of the instructors surveyed believe that engineers Very Rarely write technical reports and only five of 61 respondents (8.2%) believe that engineers Rarely write technical reports. Almost half of the respondents (29 participants, 47.5%) indicated the engineers write technical reports Often; the option Very Often was ranked close to Often with 25 instructors (41%) indicating that they feel engineers write technical reports Very Often. Only two instructors (3.3%) responded Neutral. The mean for how often instructors believe engineers write technical reports, 4.21, was just under the mean for how often the participants believe engineers spend reading technical reports. Table 5 outlines survey participants’ view of the time engineers spend reading and writing technical reports.

Table 5. Participants’ views of the time engineers spend reading and writing technical reports, N=61.

<table>
<thead>
<tr>
<th></th>
<th>Very Rarely</th>
<th>Rarely</th>
<th>Neutral</th>
<th>Often</th>
<th>Very Often</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Technical Reports</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>25</td>
<td>29</td>
<td>4.31</td>
</tr>
<tr>
<td>Writing Technical Reports</td>
<td>0</td>
<td>5</td>
<td>2</td>
<td>29</td>
<td>25</td>
<td>4.21</td>
</tr>
</tbody>
</table>
With the strong indication from the respondents that instructors perceive engineers spend considerable time reading and writing technical reports, it comes as no surprise that the instructors surveyed also emphasize technical reports when they design their technical and professional communication classes; however, they do not emphasize reading technical reports as much as writing. Almost a third of the respondents, 20 of 62 (32.3%) emphasize reading technical reports Heavily, and 12 (19.4%) emphasize it Very Heavily. A close second to Heavily was Neutral, which 18 participants (29%) selected. Twelve instructors selected either Little or Very Little, with ten (16.1%) selecting Little and two (3.2%) selecting Very Little. At 3.48, the mean was almost evenly between Neutral and Heavily (Very Little = 1; Very Heavily = 5).

Respondents place more emphasis on writing technical reports in their technical and professional communication classes than other documents, with only one instructor (1.6%) putting Very Little emphasis on writing technical reports and none putting Little emphasis. On the contrary, over a third weight writing technical reports either Heavily (27 participants; 43.5%) or Very Heavily (27 participants; 43.5%). Seven of the 62 respondents (11.3%) were Neutral on how much they weight technical report writing. Overall, instructors gave the writing of technical reports a rating of just over Heavily, with a mean of 4.27. Table 6 shows the breakdown of how survey participants emphasize reading and writing technical reports in their classes.

<table>
<thead>
<tr>
<th></th>
<th>Very Little</th>
<th>Little</th>
<th>Neutral</th>
<th>Heavily</th>
<th>Very Heavily</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Technical Reports</td>
<td>2</td>
<td>10</td>
<td>18</td>
<td>20</td>
<td>12</td>
<td>3.48</td>
</tr>
<tr>
<td>Writing Technical Reports</td>
<td>1</td>
<td>0</td>
<td>7</td>
<td>27</td>
<td>27</td>
<td>4.27</td>
</tr>
</tbody>
</table>

Technical reports, which included analytical research reports, usability reports, and technical reports, were required as part of the course requirements in almost 25% of the participants’ technical communication classes, according to qualitative portion of the survey. Four of the 17 syllabi and comprehensive assignment prompts (23.5%) required some type of technical report. These reports had a decent impact on
the final grade, with an average weight of the technical reports being 16.2% of the final course grade, with a range of 10% to 25%.

**Proposals**

When considering how much time engineers spend writing different documents, the instructors who participated in this survey ranked proposals as third, after writing correspondence and technical reports. The respondents did not feel that engineers spend as much time reading proposals, though. In addition to correspondence and technical reports, respondents also felt that engineers spend more time reading management reports than they do reading proposals. Overall, respondents gave reading proposals a mean score of 3.66, with 42 (68.9%) reporting that they believe engineers read proposals either Often (35 participants; 57.4%) or Very Often (7 participants 11.5%). Nine instructors (14.8%) responded that engineers Rarely read proposals, and ten (16.4%) selected Neutral. At 3.66, the mean score was between Neutral and Often (Very Rarely = 1; Very Often = 5).

Similarly, most instructors feel that engineers spend considerable time writing proposals; 46 of 61 instructors (75.4%) indicated that engineers write proposals Often (31 participants; 50.8%) or Very Often (15 participants; 24.6%) in their professional careers. Of those who responded, two instructors (3.3%) felt engineers write proposals Very Rarely, and twice as many (4 participants; 6.6%) responded Rarely. Nine instructors (14.8%) who answered the question selected Neutral. A mean of 3.87 was given by instructors of technical and professional communication for the time they believe engineers spend writing proposals. Table 7 outlines survey participants’ view of the time engineers spend reading and writing proposals.

**Table 7. Participants’ views of the time engineers spend reading and writing proposals, N=61.**

<table>
<thead>
<tr>
<th></th>
<th>Very Rarely</th>
<th>Rarely</th>
<th>Neutral</th>
<th>Often</th>
<th>Very Often</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Proposals</td>
<td>0</td>
<td>9</td>
<td>10</td>
<td>35</td>
<td>7</td>
<td>3.66</td>
</tr>
<tr>
<td>Writing Proposals</td>
<td>2</td>
<td>4</td>
<td>9</td>
<td>31</td>
<td>15</td>
<td>3.87</td>
</tr>
</tbody>
</table>
Respondents value the reading of proposals in their classes more heavily than they do the reading of any other document covered in this survey, with a mean value of 3.61 (Very Little = 1; Very Heavily = 5). Of the 62 instructors who participated in this section of the survey, the majority (39 participants; 62.9%) indicated that they rank the reading of proposals either Heavily (26 participants; 41.9%) or Very Heavily (13 participants; 21%). Only eleven instructors (17.7%) responded that they rank the reading of proposals Very Little (3 participants; 4.8%) or Little (8 participants; 12.9%) in their technical and professional communication classes.

In addition, instructors strongly emphasize writing proposals in technical communication classrooms. Proposal writing is emphasized more than any other type of writing by the technical and professional communication instructors surveyed. Fifty-four of 62 instructors (87.1%) reported that they rank proposal writing Heavily (24 participants; 38.7%) or Very Heavily (30 participants; 48.4%), with no instructors indicating that they rank the writing of proposals Very Little in their classes and only four (6.5%) saying that they rank writing proposals Little and four (6.5%) responding Neutral. The mean for proposal writing in technical and professional communication classes was 4.29. Table 8 shows the breakdown of how survey participants emphasize reading and writing proposals in their classes.

**Table 8. Participants’ emphasis of reading and writing proposals in their classes, N=62.**

<table>
<thead>
<tr>
<th></th>
<th>Very Little</th>
<th>Little</th>
<th>Neutral</th>
<th>Heavily</th>
<th>Very Heavily</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Proposals</td>
<td>3</td>
<td>8</td>
<td>12</td>
<td>26</td>
<td>13</td>
<td>3.61</td>
</tr>
<tr>
<td>Writing Proposals</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>24</td>
<td>30</td>
<td>4.29</td>
</tr>
</tbody>
</table>

Proposals were the most common introductory technical and professional communication courses assignment given by respondents who provided supplemental documents. Of the seventeen syllabi and comprehensive assignment prompts evaluated, thirteen (76.5%) required a proposal as part of the course requirements. Although the
proposals were required by more instructors, the proposal assignments were not weighted as heavily as the management reports when calculating the final course grade. While the management reports were weighted as much as 60% of the final course grade, proposals averaged only 15.1%, with the highest weight given to a proposal being 30%. The overall spread of the weight for proposal assignments was 5.3% to 30%.

Management Reports
The instructors who participated in the survey reported that they felt engineers spent less time reading and writing management reports than technical reports. Of 61 respondents, 41 (67.2%) indicated that they believe engineers read management reports Often (24 participants; 39.3%) or Very Often (17 participants; 27.9%), while only nine (14.8%) answered Rarely and none answered Very Rarely. Eleven instructors (18%) responded Neutral. The mean of the instructors’ perceptions of how much time engineers spend reading management reports was not quite Often, at 3.8 (Very Rarely = 1; Very Often = 5).

The instructors’ responses indicate that they feel engineers spend less time writing management reports than reading them, although the responses for times spent writing and reading management reports are very close. Again, nine participants (14.8%) responded that engineers Rarely write management reports and none responded Very Rarely; however, the instructors surveyed indicated they feel that engineers spend more time reading management reports than writing them, with (11 participants; 18%) responding Very Often. The most common response was Often, which almost half of the instructors selected (29 participants; 47.5%), and the second most common answer was Neutral; twelve of the instructors (19.7%) responded Neutral. The mean for writing management reports is between Neutral and Often, falling closer to Often at 3.69. Table 9 outlines survey participants’ view of the time engineers spend reading and writing management reports.

Even with the perception that engineers spend significant time reading management reports, technical and professional communication instructors who participated in this survey do not rank reading management reports heavily in their classes. Of 61 instructors who responded, only 14 (23%) rank reading management reports either Heavily (9 participants; 14.8%) or Very Heavily (5 participants; 8.2%); conversely, 31 participants (50.8%) rank reading management reports Very Little (10 participants; 16.4%) or Little (21 participants; 34.4%).
Table 9. Participants’ views of the time engineers spend reading and writing management reports, N=61.

<table>
<thead>
<tr>
<th></th>
<th>Very Rarely</th>
<th>Rarely</th>
<th>Neutral</th>
<th>Often</th>
<th>Very Often</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Management Reports</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>24</td>
<td>17</td>
<td>3.80</td>
</tr>
<tr>
<td>Writing Management Reports</td>
<td>0</td>
<td>9</td>
<td>12</td>
<td>29</td>
<td>11</td>
<td>3.69</td>
</tr>
</tbody>
</table>

Over a quarter of the respondents (16 participants; 26.2%) re-sponded Neutral when asked how heavily they weight reading management reports in their technical and professional communication classes. The mean was between Little and Neutral at 2.64 (Very Little = 1; Very Heavily = 5).

Interestingly, there is a fairly large spread between how instructors weight reading management reports and how they weight writing management reports. Sixty instructors responded to the question asking how heavily they weight writing management reports; the mean was close to Neutral at 3.17, with Neutral being the option selected most often (18 participants; 30%). Twenty-four respondents (40%) selected either Heavily (15 participants; 25%) or Very Heavily (9 participants; 15%), and 18 (30%) selected either Little (13 participants; 21.7%) or Very Little (5 participants; 8.3%). Table 10 shows the breakdown of how survey participants emphasize reading and writing management reports in their classes.

Table 10. Participants’ emphasis of reading and writing management reports in their classes, N=61 (Reading); 60 (Writing).

<table>
<thead>
<tr>
<th></th>
<th>Very Little</th>
<th>Little</th>
<th>Neutral</th>
<th>Heavily</th>
<th>Very Heavily</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Management Reports</td>
<td>10</td>
<td>21</td>
<td>16</td>
<td>9</td>
<td>5</td>
<td>2.64</td>
</tr>
<tr>
<td>Writing Management Reports</td>
<td>5</td>
<td>13</td>
<td>18</td>
<td>15</td>
<td>9</td>
<td>3.17</td>
</tr>
</tbody>
</table>
A Survey of Assignment Requirements

Not quite half the respondents who supplied syllabi and comprehensive assignment prompts required a report similar to a management report in their technical and professional communication classes. Of the 17 sample syllabi and comprehensive assignment prompts, seven (41.2%) included some type of management report, including progress reports, recommendation reports, reports to decision makers, and usability reports. The management reports were worth an average of 23.1% of the final course grade, with a range of 5% to 60%.

Manuals
Respondents of the survey believe that engineers spend more time reading manuals than they do writing them. When asked how much time they believe engineers spend reading manuals, participants gave a mean score of 3.64 (Very Rarely = 1; Very Often = 5). No respondent indicated that they felt engineers Very Rarely read manuals, and only nine (14.8%) believe engineers Rarely read manuals. Instead, most (38 participants, 62.3%) believe that engineers Often (28 participants; 45.9%) or Very Often (10 participants; 16.4%) read manuals while in their professional careers. Fourteen instructors (23%) responded Neutral when asked how much time engineers spend reading manuals.

Overall, the instructors did not feel that engineers spend as much time writing manuals as they do reading manuals. Nineteen instructors (31.1%) responded that engineers Rarely (18 participants; 29.5%) or Very Rarely (1 participant; 1.6%) wrote manuals while at work, and thirty (49.2%) felt that engineers Often (20 participants; 32.8%) or Very Often (10 participants; 16.4%) spent time writing manuals. With 12 instructors (19.7%) responding Neutral, the mean score for time engineers spend reading manuals is 3.33. Table 11 outlines survey participants’ view of the time spend reading and writing manuals.

Table 11. Participants’ views of the time engineers spend reading and writing manuals, N=61.

<table>
<thead>
<tr>
<th></th>
<th>Very Rarely</th>
<th>Rarely</th>
<th>Neutral</th>
<th>Often</th>
<th>Very Often</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Manuals</td>
<td>0</td>
<td>9</td>
<td>14</td>
<td>28</td>
<td>10</td>
<td>3.64</td>
</tr>
<tr>
<td>Writing Manuals</td>
<td>1</td>
<td>18</td>
<td>12</td>
<td>20</td>
<td>10</td>
<td>3.33</td>
</tr>
</tbody>
</table>
While most respondents feel that engineers spend considerable time reading manuals, they do not weight the activities as heavily as one may assume. The mean score for the emphasis that instructors put on reading manuals is 3.26 (Very Little = 1; Very Heavily = 5), with not quite half (30 participants; 49.2%) weighting reading manuals Heavily (21 participants; 34.4%) or Very Heavily (9 participants; 14.8%). Five instructors (8.2%) weight reading manuals Very Little in their classes, and 13 (21.3%) put Little weight on reading manuals. Thirteen of the participants (21.3%) responded Neutral when asked how heavily they weight reading manuals in their technical and professional communication classes.

The instructors who responded to the survey weight writing manuals more heavily than reading manuals in their classes. Of 62 instructors, 41 (66.1%) indicated that they weight writing manuals Heavily (19 participants; 30.6%) or Very Heavily (22 participants; 35.5%). While only three respondents (4.8%) weight the writing of manuals Very Little in their classes, 12 instructors (19.4%) weight writing manuals Little. Six respondents (9.7%) responded Neutral, bringing the mean for the question to 3.73, just under Heavily. Table 12 shows the breakdown of how survey participants emphasize reading and writing manuals in their classes.

Table 12. Participants’ emphasis of reading and writing manuals in their classes, N=61 (Reading); 62 (Writing).

<table>
<thead>
<tr>
<th></th>
<th>Very Little</th>
<th>Little</th>
<th>Neutral</th>
<th>Heavily</th>
<th>Very Heavily</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Manuals</td>
<td>5</td>
<td>13</td>
<td>13</td>
<td>21</td>
<td>9</td>
<td>3.26</td>
</tr>
<tr>
<td>Writing Manuals</td>
<td>3</td>
<td>12</td>
<td>6</td>
<td>19</td>
<td>22</td>
<td>3.73</td>
</tr>
</tbody>
</table>

Few instructors listed the word manual on their syllabi or comprehensive assignment prompts, but several required instructions, which were classified under manuals for the purpose of this study. Seven of the 17 syllabi and comprehensive assignment prompts (41.2%) required an assignment that had components of a manual, including technical instructions and procedures. These manual assignments accounted for an average of 15.2% of the students’ final grade, with a range of 5% to 30% of the final course average.
Other Assignments
In addition to the assignments listed in the survey, an analysis of the syllabi indicated that instructors also require other common assignments in their technical and professional communication classes. The most common assignment other than those already discussed was presentations. Of the seventeen syllabi and assignment prompts provided, thirteen (76.5%) required some type of presentation. The presentation tied with proposals for the most common assignment in the technical communication classes for those who participated in the study. The presentations account for an average of 9% of the final grade, with the most common weight given being 10%. The highest weight for presentation grades was 15% and the lowest was 4%.

Instructors who responded to the study also require definitions, case studies, and employment application materials in their technical and professional communication classes according to the supplemental documents collected. Of those assignments, the most common was employment materials, including resumes and interview sessions, which close to a third of instructors who provided supplemental documents (5 instructors; 29.4%) required. The weight of those materials on the final course grade was moderately high; the overall average weight for employment materials on final course average was 16.8%. The highest weight of employment materials was 23.1%, and the lowest weight was still fairly high at 10%.

Three instructors of the seventeen who supplied syllabi or comprehensive assignment prompts (17.6%) required case studies, and the same number required definitions. The definitions were worth slightly more of the final course grade than the case studies. Definitions were worth an average of 8.28%, while the case studies were worth an average of 7.91%. The weight of the case studies, however, had a larger spread in the documents supplied by participants. Case studies accounted for 3.75% to 15% of the final course grade, while definitions were worth no more than 10% with the lowest weight for a definition the same as the lowest weight for a case study at 3.75%.

Interestingly, a third of the respondents who provided a syllabus or a comprehensive assignment prompt incorporated some type of multimodal assignment. Five of the 17 syllabi (29.4%) have an assignment with a multimodal component, including assignments that required students to create wikis, incorporate visual rhetoric, design websites, and author blogs. While the multimodal assignments did not impact
the final grade as much as the employment materials, they were worth more than the definitions and case studies. The average weight of the multimodal assignments on the final course grade was 14.98%, with a range of 7.69% to 22.2%.

Another common theme in the syllabi and comprehensive assignment prompts collected by this study was the requirement for students to do some collaborative work. Over three-quarters of the syllabi and comprehensive assignment prompts required some type of collaborative work. Of the 17 respondents, 13 (76.5%) included group work as part of the course requirements. The group work was usually combined with other assignments, such as requiring students to work together and create a proposal, so most of the assignments that were classified as collaborative were also categorized as another type of assignment. The collaborative work was worth an average of 30.32% of the final course grade, with a range of 5% to 55%.

**Discussion**

When the results of the study are compared to Cunningham and Stewart’s (2012) study that surveyed engineers to determine the time they spend reading and writing specific documents, we find that the instructors who responded have a fairly clear understanding of the time engineers spend reading different types of documents. The instructors of this survey had less than a half a point difference (on a five-point scale) than the engineers in Cunningham and Stewart’s survey when asked how much time engineers spend reading correspondence, technical reports, proposals, and manuals. The time engineers spend reading meeting minutes and management reports provided the largest gap between the instructors who responded to this survey and the engineers in Cunningham and Stewart’s survey. The respondents of this survey felt engineers spend more time reading management reports (a mean of 3.8 compared to the engineers in Cunningham and Stewart’s study who reported a mean of 3.24). The largest gap was the time engineers spend reading meeting minutes; the instructors who responded to this survey indicated that they believe that engineers spend a mean of 2.74, but the engineers reported spending 3.68 (Cunningham and Stewart, 2012).
When looking at the time that engineers spend writing documents, there were larger discrepancies between what the engineers in Cunningham and Stewart’s (2012) study reported and what the instructors who completed this survey believed engineers do. According to Cunningham and Stewart’s research, engineers spend a mean of 2.74 (on a five-point scale) writing management reports; however, the instructors in this study believed that engineers spend considerable more time writing management reports, with a mean of 3.69. Management reports were not the only document the instructors perceived engineers spend more time writing than they do. The instructors of this survey also indicated that engineers spend more time writing manuals; the engineers reported a mean of 2.48 when asked how much time they spend writing manuals, and the instructors reported they believe engineers spend a mean of 3.33. Interestingly, the respondents of this survey underestimated how much time engineers spend writing meeting minutes. The instructors who participated in this survey reported a mean of 2.57, while the engineers in Cunningham and Stewart’s study reported a mean of 3.29. When comparing the instructors’ responses to the engineers’ responses regarding writing, the other types of writing in this survey (documents, correspondence, technical reports, and proposals) were all less than half a point.

When looking at how instructors weight their assignments when calculating course grades, the participants of this study consistently indicated that they put less weight on reading documents than on writing the same documents. The instructors who took the survey indicated that they weight both reading and writing technical reports more than the reading of any other type of document in the study. Cunningham and Stewart’s (2012) survey indicated that engineers do not spend quite as much time reading and writing technical reports as the participants in this survey believe, but they still spend more time reading and writing technical reports than all other writing in the study except correspondence. According to Cunningham and Stewart (2012), the engineers reported spending more time reading and writing correspondence than meeting minutes, technical reports, management reports, proposals, or manuals.

Conclusion
The purpose of technical and professional communication classes is to give students the skills necessary to be effective communicators in their future careers (Kynell, 2000). Typically, technical and professional
communication courses are offered to engineering or science majors (Yeats & Thompson, 2010). As such, the classes have specific objectives to improve students’ understanding of the necessary techniques to communicate effectively in their future STEM careers. Of course, to prepare students for the demands of their future careers, instructors of technical and professional communication classes must have a clear understanding of the demands of professional engineering. Using the results of Cunningham and Stewart’s (2012) study that explored the reading and writing demands of professional engineers, this study surveyed instructors of technical and professional communication classes to identify their perceptions of the time professional engineers spend reading and writing specific documents. As instructors work to design assignments and projects for their introductory technical and professional communication classes, it is important that they consider the types of writing engineers are required to do in their daily jobs.

The study is not inclusive, and there are numerous avenues of future research to help minimize the divide between technical and professional communication classroom assignments and industry writing requirements. One key area of research continues to be transferable skills. While the instructors who participated in this study reported that they do not typically teach certain document types, like reading and writing meeting minutes, the question remains how many of those same instructors teach concepts that are applicable to reading and writing meeting minutes. For example, many instructors require collaborative assignments in their technical and professional communication classes. When part of the collaborative assignment is for the teams to submit notes of the project plan, details of the team contract, outlines of progress, and reviews of peers, the skills may transfer to other types of documentation. When team members are asked to submit periodical outlines of progress, the students are often creating documents that have qualities similar to meeting minutes. The project plan and team contract both contain elements that can be found in technical reports and proposals. The idea of transferability is important because it is virtually impossible to teach every document that students will face in their future careers. A bigger, more important key is to teach skills that the students can transfer to multiple areas of their professional careers. Research can be done to help identify the
relevance of the assignments that are commonly given in technical and professional communication classes and determine how the skills to create those assignments can be applied to other documents and situations in professional engineering.

In addition, the syllabi and assignment prompts that were provided by instructors who participated in this study indicated that instructors often assign multimodal work in their technical and professional communication classes. There is little research on how often engineers write using multimodal technology in their professional jobs, which would be an interesting area to explore to determine the workplace relevance of the assignments. As the world of communication is changing and becoming more reliant on technology, the role of multimodal assignments may be changing as well. Along those lines, a study considering the motivation to include multimodal assignments would help determine if the push is coming from the world of technical writing or from rhetoric and composition pedagogy that is then being applied to technical writing classes.
References


# Appendix

In your opinion, how much time do engineers spend doing the following tasks in their professional jobs?

<table>
<thead>
<tr>
<th>Task</th>
<th>Very Rarely</th>
<th>Rarely</th>
<th>Neutral</th>
<th>Often</th>
<th>Very Often</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading correspondence (letters, emails, memos, faxes)</td>
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<td>Reading meeting minutes</td>
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<tr>
<td>Reading technical reports</td>
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<tr>
<td>Reading management reports</td>
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<tr>
<td>Reading proposals</td>
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<tr>
<td>Reading manuals</td>
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<tr>
<td>Evaluating documents</td>
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<tr>
<td>Writing correspondence (letters, emails, memos, faxes)</td>
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<tr>
<td>Writing meeting minutes</td>
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<tr>
<td>Writing technical reports</td>
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<td>Writing management reports</td>
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<td>Writing manuals</td>
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<tr>
<td>Editing other people’s writing</td>
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</table>

Based on your personal experience, how heavily are the following activities/assignments weighed in your technical communication classes?

<table>
<thead>
<tr>
<th>Task</th>
<th>Very Little</th>
<th>Little</th>
<th>Neutral</th>
<th>Heavily</th>
<th>Very Heavily</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading correspondence (letters, emails, memos, faxes)</td>
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<tr>
<td>Reading meeting minutes</td>
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<tr>
<td>Reading technical reports</td>
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<td></td>
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<tr>
<td>Task</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Reading management reports</td>
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<tr>
<td>Reading proposals</td>
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<tr>
<td>Reading Manuals</td>
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<tr>
<td>Evaluating documents</td>
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<tr>
<td>Writing correspondence</td>
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<tr>
<td>Writing meeting minutes</td>
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<tr>
<td>Writing technical reports</td>
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<tr>
<td>Writing management reports</td>
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<tr>
<td>Writing manuals</td>
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<tr>
<td>Editing other people's writing</td>
<td></td>
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</tbody>
</table>

Are you willing to provide a copy of your syllabus for your technical writing, technical communication, or professional writing class? (Answering NO will not affect your responses or lessen the usefulness of your participation.)

☐ Yes    ☐ No

If yes, participants were directed to upload a file with the following instructions: Please upload a sample syllabus for a technical writing, technical communication, or professional writing class you have taught in the past two years. Before uploading the syllabus, please remove any identifying information, such as name, school, address, office location, email, and phone number.

Are you willing to provide sample assignment prompts from your technical communication, technical writing, or professional writing classes? (Answering NO will not affect your responses or lessen the usefulness of your participation.)

☐ Yes    ☐ No

If yes, participants were directed to upload a file with the following instructions: Please upload sample assignment prompts for a technical communication, technical writing, or professional writing class you have taught in the past two years. Before uploading the document, please remove any identifying information, such as name, school, address, office location, email, and phone number.
<table>
<thead>
<tr>
<th>What is your job title?</th>
<th>Adjunct (PT)</th>
<th>FT-Non-Tenure Track</th>
<th>Assistant Professor</th>
<th>Associate Professor</th>
<th>Full Professor</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□</td>
<td>□</td>
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<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What is your highest level of education?</th>
<th>MA</th>
<th>MFA</th>
<th>EdD</th>
<th>PhD</th>
<th>Other</th>
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<td></td>
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<td>□</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>What is the discipline of your highest degree?</th>
<th>English</th>
<th>Prof/Tech Writing</th>
<th>Rhet/Comp</th>
<th>Communication</th>
<th>Engineering</th>
<th>Other</th>
</tr>
</thead>
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<td></td>
<td>□</td>
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</table>

<table>
<thead>
<tr>
<th>At what type of institution do you teach?</th>
<th>2-year college</th>
<th>4-year college</th>
<th>University</th>
</tr>
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<tr>
<td></td>
<td>□</td>
<td>□</td>
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</table>

<table>
<thead>
<tr>
<th>Is the institution public or private?</th>
<th>Public</th>
<th>Private, non-profit</th>
<th>Private, for-profit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Does your college or university offer engineering degrees?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
Author Information

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Who Teaches Technical and Professional Communication Service Courses?: Survey Results and Case Studies from a National Study of Instructors from All Carnegie Institutional Types

Sarah Read
Portland State University
Michael Michaud
Rhode Island College

Abstract. In this article, we offer answers to the question, “Who teaches the technical and professional communication service course and in what institutional situations?” We present data from a national online survey of technical and professional communication instructors from across all Carnegie institutional types (2- and 4-year). In addition, we share four case-studies of survey respondents whose situations present the greatest challenges facing those who seek to improve or reform the technical and professional communication service course. We close the article by putting the case studies into the context of the reported survey data and arguing for how advocates for the technical and professional communication course might use the data to initiate a national discussion that accommodates all stakeholders.

Keywords: instructor data, instructor profiles, labor conditions, service course
students, faculty, and institutional situation. In this article, we report on only the data from the full survey that is relevant to the question we have posed above—about who teaches the course and in what institutional situations.

For the purposes of our research, we set the scope for what counts as the technical and professional communication service course as broadly as possible. We asked respondents to self-identify their courses as technical and professional communication service courses, with the expected result that course titles would vary widely, including terms such as business, workplace, technical, professional (and often more than one of these terms). The broadness of our scope with regard to what counts as a technical and professional communication service course reflects the difficulty previous researchers have encountered when trying to categorize or define curricula or programs in business, professional, and technical writing (e.g., Sullivan & Porter, 1993; Yeats & Thompson, 2010). In order to avoid rediscovering the same problems of categorization posed by the diversity of technical and professional communication curriculum, programs, and institutional situation, we chose to bring the many instantiations of the course under one larger umbrella so that we could focus on trends across Carnegie institution classifications.

Prior research has demonstrated that across all types of higher education institutions, the majority of technical and professional communication service courses are taught by non-tenure track faculty, including adjunct, part-time, full-time non-tenure track, and graduate-student faculty. Data gathered by Lisa Meloncon & Peter England (2011, p. 405) show that as many as 83% of technical and professional communication service course sections are taught by contingent faculty (data do not include two-year institutions). But what else do we know about the instructors who teach this course? The answer is very little, because, as we have argued elsewhere (Read & Michaud, 2018), the technical and professional communication service course is understudied as a unit of analysis in its own right. The course has not been studied laterally across the diverse institutional contexts in which it is taught. We do not know, for example, the levels of instructor-training across institutional ranks and types or the areas of instructors’ scholarly
interest. Most importantly, we have little documented sense of the institutional conditions under which technical and professional communication instructors teach the course. These are questions that our research intended to investigate.

Our purpose in undertaking a broad examination of the technical and professional communication service course was to document what we sense, based on anecdotal and personal experience, are widely held observations and hunches about the status of the course. The utility, however, of documenting what experienced professionals already know, talk about, or experience in relation to the technical and professional communication service course is to make available data that can be used to move the realm of evidence about the course beyond the anecdotal and to advocate for systematic discussion about and reflection on the service course.

In the first half of this article, we share findings about technical and professional communication instructors, including their level(s) of training, area(s) of scholarly interest, and years of teaching experience. Additionally, we report on the institutional situation within which instructors work, including institution classification, number of sections taught per year, curricular standardization, and status of instructors who teach the greatest number of sections of technical and professional communication courses at their institution. In the second half of the article, we share four case studies gleaned from follow-up interviews that provide a more fully contextualized look at the experiences and institutional situations of four respondents. We argue that, in order to remain relevant to the broadest possible group of stakeholders, discussion of the status of the technical and professional communication service course must account for both strong trends in the survey data and the localized experiences of individual instructors.

Methods

We built our survey in Qualtrics and disseminated it during summer 2015 via professional listservs and social media sites related to writing studies and professional and technical writing (e.g. ATTW-L, WPA-L, NCTE Two-Year College Section email list, etc.). Overall, 220 respondents

1 The survey was conducted with the approval of the Internal Review Boards of DePaul University and Rhode Island College. This research was supported by a Research Initiative Grant from the Conference on College Composition and Communication (CCCC).
consented to take the survey, and 154 completed it in its entirety. Per our study design, the distribution of respondents across all 2- and 4-year Carnegie-classification types was proportional to the percentage of students enrolled nationally at each institution (see Appendix A). This proportional representation and especially the relatively balanced representation of respondents from associates and doctoral-granting institutions (38% and 37%, respectively), gave us confidence that our results account for the diversity of institutional contexts in which the technical and professional communication service course is taught. Additionally, our respondents, only 38% of whom were on the tenure-track, represent the diversity of institutional statuses that characterize those who teach the service course (see Appendix B).

After we closed the survey, we conducted ten follow-up interviews via Skype with respondents who opted-in to a follow-up interview. These interviews were audio-recorded and transcribed. We chose interviewees to ensure representation of experience across all institutional types, which was one of the major variables in the survey. We asked these individuals to develop and expand upon their survey answers to provide us with additional context for our data. In choosing the four cases that we report on below, we have intentionally given voice to experiences that illustrate a range of challenges that technical and professional communication service course instructors face. Some of these will likely be unfamiliar to those who teach at medium or large, 4-year colleges and universities serving largely traditional student populations. Other challenges are common across all 2- and 4-year institution types, although they are not experienced to an equal degree across all faculty ranks.

**Part I: Survey Data About Who Teaches the Course and Their Institutional Situations**

In this part of the article we report on data from the survey that develops the question “Who teaches the technical and professional communication service course?” In addition, we include tables of data about the institutional situation that instructors navigate to teach the course. It is important to read the trends in our data as reflective of only our respondent pool and not as a representative sample of the course nationally (we have done what we can using quotas to reasonably accommodate variation in institutional type and instructor status within our respondent pool). This study was not a population study.
because no documented population (i.e., in a census) of technical and professional communication instructors exists, and therefore it cannot be studied using inferential statistical methods. The idea of this section is to get a broad view of the survey data and to provide context for the four case studies in Part II.

Survey Data on Who Teaches the Course

Highest degree obtained. Table 1 reports on the background and training of the technical and professional communication instructors who took our survey. Not surprisingly, instructors come from a range of different backgrounds and bring many different kinds of academic training to their teaching. A positive finding is that just over half of our respondents have achieved the degree of the PhD. Only half of those respondents, however, are on the tenure track, although a large majority have full-time positions. When it comes to respondents with an MA/MFA/MS/M.ED, more than half of the respondents are in tenure-track or full-time positions. This is good news and likely reflects the large number of respondents at 2-year colleges.

Table 1. Highest degree obtained

<table>
<thead>
<tr>
<th></th>
<th>MA</th>
<th>MFA</th>
<th>MBA</th>
<th>MS</th>
<th>PHD</th>
<th>M.ED/MAT</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Instructor/Teaching Assistant</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Tenure-Track</td>
<td>8</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>46</td>
<td>0</td>
<td>3</td>
<td>59</td>
</tr>
<tr>
<td>Full-time non-tenure track</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>17</td>
<td>0</td>
<td>1</td>
<td>35</td>
</tr>
<tr>
<td>Part-time adjunct or contingent faculty</td>
<td>15</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>31</td>
</tr>
<tr>
<td>Full-time staff with teaching responsibility</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>0</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>47</td>
<td>6</td>
<td>0</td>
<td>42</td>
<td>82</td>
<td>5</td>
<td>10</td>
<td>154</td>
</tr>
</tbody>
</table>
**Primary field of graduate training.** Table 2 further clarifies the backgrounds and training of our survey respondents by reporting on their fields of graduate training, which at first glance appear diverse and include non-writing related fields (19 write-in responses). However, we find that around two-thirds of our respondents do bring training in a writing-related field to their work (i.e., creative-writing, composition and rhetoric, technical and professional communication). This finding is overall good news, although it is highly variable how relevant (from highly relevant to not at all relevant) training in composition and rhetoric and creative writing are to teaching the technical and professional communication service course. We note, also, that a higher number of our respondents come from an English or literature background than from a technical and professional communication background. This finding is both not entirely surprising and also a potential cause for concern.

**Table 2. Primary field of graduate training**

<table>
<thead>
<tr>
<th></th>
<th>Creative Writing</th>
<th>Composition/ Rhetoric</th>
<th>Cultural or American Studies</th>
<th>Digital Media and Design</th>
<th>Eng Lit.</th>
<th>TPC</th>
<th>Write-in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Instructor/ Teaching Assistant</td>
<td>1</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Tenure-Track</td>
<td>4</td>
<td>25</td>
<td>0</td>
<td>1</td>
<td>11</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Full-time non-tenure track</td>
<td>0</td>
<td>13</td>
<td>1</td>
<td>0</td>
<td>11</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Part-time adjunct or contingent faculty</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>11</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Full-time staff with teaching responsibility</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
<td><strong>58</strong></td>
<td><strong>3</strong></td>
<td><strong>1</strong></td>
<td><strong>36</strong></td>
<td><strong>28</strong></td>
<td><strong>19</strong></td>
</tr>
<tr>
<td>(n = 154)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Relevant industry or other non-academic experience. Table 3 reports on the extent to which survey respondents brought industry experience to their teaching. On what is a definite positive note, almost two-thirds of our respondents brought some level of industry experience to their work. However, because we left for interpretation what we meant by the term “industry experience,” respondents were asked to describe their experience in a write-in box. Their answers to this question revealed that our respondents counted a wide range of professional experiences as “industry” experience: working as a professional in industries such as banking, non-profits, construction, information technology, human resources; working as an executive secretary; being employed as a technical writer or technical editor or doing this work as an independent contractor; careers in journalism, publishing and other media industries. We note, further, that among those respondents who teach the technical and professional communication course off the tenure-track, industry-experience is more likely.

Table 3. Relevant industry or other non-academic experience

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>I Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Instructor/Teaching Assistant</td>
<td>7</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Tenure-Track</td>
<td>33</td>
<td>24</td>
<td>2</td>
</tr>
<tr>
<td>Full-time non-tenure track</td>
<td>23</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Part-time adjunct or contingent faculty</td>
<td>22</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Full-time staff with teaching responsibility</td>
<td>5</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Total (n = 154)</td>
<td>99</td>
<td>45</td>
<td>10</td>
</tr>
</tbody>
</table>

Technical and professional writing as scholarly area of interest. At first glance, Table 4 seems to suggest that roughly three-quarters of those who teach the service course consider technical and professional communication as an area of scholarly interest. This is good news. However, we want to clarify this finding by pointing out that, as with the term “industry experience,” we did not define the term for our respondents. Scholarly interest could therefore mean reading or doing research in a wide variety of areas. A surprising finding is that a higher percentage of faculty off the tenure-track
report being engaged in technical and professional communication as an area of research than those on the tenure-track.

### Table 4. Professional/technical writing as scholarly area of interest

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Instructor/Teaching Assistant</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Tenure-Track</td>
<td>41</td>
<td>18</td>
</tr>
<tr>
<td>Full-time non-tenure track</td>
<td>26</td>
<td>9</td>
</tr>
<tr>
<td>Part-time adjunct or contingent faculty</td>
<td>22</td>
<td>9</td>
</tr>
<tr>
<td>Full-time staff with teaching responsibility</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Total (n = 154)</td>
<td>111</td>
<td>43</td>
</tr>
</tbody>
</table>

**Years of experience teaching the technical and professional communication course.** Table 5 reports the years of experience that our respondents bring to the teaching of the technical and professional communication course. The good news here is that the relatively robust number of respondents in each category above suggests that the technical and professional communication service course is taught during all different periods of a career: the data do not suggest that this course is taught primarily by new faculty. One exception to this trend is the relatively high percentage of adjunct faculty with 1–5 years of experience. This exception is likely attributable to the high turnover of adjunct faculty and the lower level of incentive for adjunct faculty to remain in these positions over the long term.

### Table 5. Years of experience teaching the TPC course

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1–5</th>
<th>6–10</th>
<th>10+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Instructor/Teaching Assistant</td>
<td>1</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tenure-Track</td>
<td>0</td>
<td>20</td>
<td>14</td>
<td>25</td>
</tr>
<tr>
<td>Full-time non-tenure track</td>
<td>2</td>
<td>11</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Part-time adjunct or contingent faculty</td>
<td>3</td>
<td>19</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Full-time staff with teaching responsibility</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Total (n = 154)</td>
<td>7</td>
<td>61</td>
<td>29</td>
<td>57</td>
</tr>
</tbody>
</table>
Survey Data on Institutional Situation

Department, program or college in which service course is offered. Table 6 reports on where technical and professional communication service courses are housed at the institutions of survey respondents. Among our respondents, two-thirds of technical and professional communication courses are housed within departments of English. If departments of writing or rhetoric are factored into this number, we can say that over three-quarters of respondents’ technical and professional communication courses are housed within either an English or writing department. Because there were a sizeable number of write-in responses (20) to this question, we looked more closely at this data and found that around half of write-ins indicated that technical and professional communication courses at their institution are housed within a program of general education or liberal studies. This fact raises interesting questions about the pros and cons of the service course as an aspect of general education. Overall, this data further underscores how the technical and professional communication course continues to be largely “owned” by the humanities and liberal arts.

Table 6. Department, program or college TPC service course is offered

<table>
<thead>
<tr>
<th></th>
<th>English Dept.</th>
<th>Writing Program or Dept.</th>
<th>Comm Dept. or College</th>
<th>Business Dept.</th>
<th>Engineering Dept.</th>
<th>Write-In</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Instructor/Teaching Assistant</td>
<td>8</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Tenure-Track</td>
<td>40</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Full time non-tenure track</td>
<td>26</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Part time adjunct or contingent faculty</td>
<td>16</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Full time staff with teaching responsibility</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Total (n = 154)</td>
<td>101</td>
<td>22</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>
Types of students who take the service course at your institution. In Table 7, we see that students who enroll in technical and professional communication courses at the institutions of survey respondents come from a wide swath of majors and that, perhaps not surprisingly, the largest numbers overall come from business and engineering programs. We do note that, in combination, students from the categories of English or rhetoric minors and majors have numbers that are roughly equal to the numbers who come from either business or engineering. For English or rhetoric students, the technical and professional communication class is not taken as a service course but as part of a curriculum in English or writing. Due to their numbers, we can conclude that students from English, writing, and/or rhetoric departments are significant stakeholders in the technical and professional communication course.

Table 7. Types of students who take the TPC service course at your institution

<table>
<thead>
<tr>
<th></th>
<th>Bus &amp; Mgt</th>
<th>Eng &amp; CS</th>
<th>Science &amp; Pre-Med</th>
<th>Liberal Arts</th>
<th>Social Sciences</th>
<th>Comm Arts</th>
<th>Fine Arts</th>
<th>English or Rhetoric Minors</th>
<th>English or Rhetoric Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate</td>
<td>6</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Instructor/Teaching Assistant</td>
<td>17</td>
<td>24</td>
<td>13</td>
<td>5</td>
<td>11</td>
<td>8</td>
<td>3</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Tenure-Track</td>
<td>16</td>
<td>18</td>
<td>13</td>
<td>10</td>
<td>10</td>
<td>3</td>
<td>8</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Full-time</td>
<td>18</td>
<td>20</td>
<td>10</td>
<td>8</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Part-time</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Full-time staff with teaching responsibility</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Full-time staff with teaching responsibility</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
<td>74</td>
<td>44</td>
<td>24</td>
<td>33</td>
<td>29</td>
<td>13</td>
<td>28</td>
<td>34</td>
</tr>
</tbody>
</table>

86
Who Teaches Technical and Professional Communication Service Courses?

Type of faculty member who teaches THE MOST sections of the service course at your institution. Table 8 shows which types of faculty members are most likely to teach the technical and professional communication service course at our respondents’ institutions. We note the roughly equal distribution among tenure-track, non-tenure-track, and contingent faculty, a fact that makes sense in light of the institutional diversity of our respondent pool. We also, however, note that about two-thirds of our respondents report that most sections of the technical and professional communication service course at their institution are taught by faculty off the tenure track (i.e. FT-NTT, Adjunct, Pro. Staff).

Table 8. Type of faculty member who teaches THE MOST sections of the TPC service course at your institution

<table>
<thead>
<tr>
<th>Type of faculty</th>
<th>GTA Track</th>
<th>Tenure Track</th>
<th>FT-NTT</th>
<th>Adjunct</th>
<th>Pro. Staff w/ Teaching</th>
<th>Don’t Know</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Instructor/Teaching Assistant</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Tenure-Track</td>
<td>3</td>
<td>37</td>
<td>7</td>
<td>8</td>
<td>0</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Full-time non-tenure track</td>
<td>1</td>
<td>3</td>
<td>26</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Part-time adjunct or contingent faculty</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>25</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Full-time staff with teaching responsibility</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong> (n = 154)</td>
<td>9</td>
<td>48</td>
<td>41</td>
<td>43</td>
<td>4</td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>
Existence of standardized course outcomes for the service course at your institution. Table 9 reports two pieces of information that speak to the level of standardization of the technical and professional communication course at respondents’ institutions. First, it provides information on whether or not respondents work in a context in which a standardized set of outcomes is provided. Second, it shows, for those who do work in such a context, whether or not an assessment procedure is in place. Here we find that over two-thirds of our respondents work under a set of established outcomes and that just over half of these work in a context in which outcomes are assessed. We are encouraged by the data on established outcomes and not entirely surprised by the fact that fewer of our respondents’ institutions assess their outcomes than have them in the first place.

Table 9. Existence of standardized course outcomes for the TPC service course at your institution

<table>
<thead>
<tr>
<th></th>
<th>Outcomes</th>
<th>Outcomes</th>
<th>Outcomes</th>
<th>Assessment</th>
<th>Assessment</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Don’t Know</td>
<td>Yes</td>
<td>No</td>
<td>Don’t Know</td>
</tr>
<tr>
<td>Graduate Instructor/Teaching Assistant</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Tenure-Track</td>
<td>43</td>
<td>13</td>
<td>3</td>
<td>20</td>
<td>21</td>
<td>2</td>
</tr>
<tr>
<td>Full-time non-tenure track</td>
<td>29</td>
<td>4</td>
<td>2</td>
<td>18</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Part-time adjunct or contingent faculty</td>
<td>26</td>
<td>5</td>
<td>0</td>
<td>17</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Full-time staff with teaching responsibility</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td>6</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong> (n = 154/120)</td>
<td>120</td>
<td>29</td>
<td>5</td>
<td>70</td>
<td>34</td>
<td>16</td>
</tr>
</tbody>
</table>
**Common syllabus and textbook.** Table 10 also reveals the level of standardization of the technical and professional communication service course, as well as the level of autonomy that instructors have over their syllabus and their choice of textbook. With regard to the question about a common syllabus, we find that just under three-quarters of our respondents are not obligated to follow a common syllabus. With regard to required textbooks, we find that among those who use a textbook to teach the course (142 out of 154 respondents), nearly two-thirds (taking into account write-ins) had autonomy over their textbook choice. We feel that these data-points, when placed side-by-side, suggest that our respondents are able to exert quite a significant degree of control over their teaching of the technical and professional communication service course.

<table>
<thead>
<tr>
<th>Instructor Access</th>
<th>Common Syllabus?</th>
<th>Required Textbook?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Syllabus?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Graduate Instructor/Teaching Assistant</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Tenure-Track</td>
<td>14</td>
<td>44</td>
</tr>
<tr>
<td>Full-time non-tenure track</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>Part-time adjunct or contingent faculty</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>Full-time staff with teaching responsibility</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Total (n = 154/142)</td>
<td>44</td>
<td>107</td>
</tr>
</tbody>
</table>

**Instructor access to professional development.** Table 11 reports respondents’ answers to a question asking about professional development. It shows that a little over half do have access to such opportunities but also that slightly over ten percent do not know whether professional development is available to them. If we combine the category of “I Don’t Know” with the category of “No,” we find that nearly half of our respondents work in contexts where professional development is either not available or is unknown to them.
Table 11. Instructor access to professional development

<table>
<thead>
<tr>
<th>Instructor Type</th>
<th>Yes</th>
<th>No</th>
<th>I Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Instructor/Teaching Assistant</td>
<td>7</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Tenure-Track</td>
<td>33</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>Full-time non-tenure track</td>
<td>20</td>
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<tr>
<td>Part-time adjunct or contingent faculty</td>
<td>11</td>
<td>12</td>
<td>3</td>
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<tr>
<td>Full-time staff with teaching responsibility</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total (n = 154)</strong></td>
<td><strong>84</strong></td>
<td><strong>51</strong></td>
<td><strong>19</strong></td>
</tr>
</tbody>
</table>

Part II: Case Studies That Present Challenges for Stakeholders Who Are Trying to Think About How to Improve Conditions for the Course

In this part of the article we present four case studies that we chose because they present unique challenges for stakeholders thinking about improving conditions for the course. We assume each case study speaks only for itself—certainly, none of the cases represent what might be considered fully typical or average cases based on the data in Part I. The first case study, Mandy, falls within trends in terms of her status (FT-NTT) and training (MA-Literature). She teaches, however, at an institutional type (trade school) that presents unique situations for Mandy as she works to improve the technical and professional communication service course; for example, she counts former K-12 teachers among her, and the technical and professional communication course is a part of the general education program. The second case study, Ilsa, presents a situation that falls outside of several of the trends of Part I as well. Ilsa has a high-degree of training (PhD), yet she has a position (FT-NTT) as the chair of a very small Communications department. Institutionally, she teaches outside the mainstream at a tribal college, which presents unique challenges in terms of geographical, cultural and professional isolation. The case study of George is not unusual in that he has a PhD in Literature, a FT-NTT position and teaches at a doctoral-granting institution. However, against a trend, George does not consider technical and professional communication an area of scholarly interest. He also teaches in a program with a high degree of standardization that he counts as both a blessing and a curse. Finally, Julia’s case reflects trends in terms of her level of training (PhD in technical and professional communication) and rank (tenure-track) at a 4-year institution. However Julia faces challenges in estab-
lishing her authority with students and the department in terms of her ability to innovate her technical and professional communication service course pedagogy due, in part, to pre-tenure review practices and gender dynamics in the classroom. At the beginning of each case study is a data box that reports on the same survey questions reported in the first half of the article.

**Mandy: Teaching the Technical and Professional Communication Service Course at High volume at a Trade School**

<table>
<thead>
<tr>
<th><strong>Respondent Data</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional/Instructional status</td>
<td>Full-time, non-tenure track</td>
</tr>
<tr>
<td>Highest degree earned</td>
<td>MA</td>
</tr>
<tr>
<td>Field of graduate training</td>
<td>Literature, English or Comparative Lit.</td>
</tr>
<tr>
<td>Industry Experience</td>
<td>2 years in engineering; 14 years marketing and public relations from entry to executive level experience (12 years in manufacturing settings).</td>
</tr>
<tr>
<td>Area of scholarly interest</td>
<td>Professional/technical writing</td>
</tr>
<tr>
<td>Number of years teaching TPC course</td>
<td>1–5</td>
</tr>
<tr>
<td>Institutional Situation</td>
<td></td>
</tr>
<tr>
<td>Institutional type</td>
<td>Associate College (trade school)</td>
</tr>
<tr>
<td>In what department/program/college is it offered?</td>
<td>General Education</td>
</tr>
<tr>
<td># of sections offered per year</td>
<td>11–50</td>
</tr>
<tr>
<td>Who takes the course?</td>
<td>It’s required to graduate</td>
</tr>
<tr>
<td>Who primarily teaches the TPC course at the institution?</td>
<td>Full-time, non-tenure track</td>
</tr>
<tr>
<td>Are there standardized TPC course outcomes?</td>
<td>Yes</td>
</tr>
<tr>
<td>Is there a common syllabus?</td>
<td>No</td>
</tr>
<tr>
<td>Is there a required textbook?</td>
<td>Yes</td>
</tr>
<tr>
<td>Assessment?</td>
<td>Yes</td>
</tr>
<tr>
<td>Is there instructor professional development?</td>
<td>Yes</td>
</tr>
</tbody>
</table>
**What is the story about Mandy?** The main story about Mandy is how she navigates the challenges inherent to a trade-school curriculum and the expectations that students bring to a trade-college education. As she explained, most students are of the attitude: “I really didn’t expect to have to take English again; I just want to learn my trade.” Mandy understands that students are very focused on learning the skills and knowledge of their trade, but she also wants them to understand, “how to use their rhetoric purposefully, in the application of their jobs.” She articulated the problem this way: “In the student’s mind, they want to run a conduit or they want to put together truss structures or they want to install HVAC. And they don’t understand that they’re still going to be required to communicate with their customers.” In addition, Mandy encounters the challenge of developing relevant and applicable examples for all trades in a general education writing course. Mandy works within the constraints of a technical college to overcome these challenges.

**Who is Mandy?** Mandy has an MA in literature from a state university in the upper Midwest. She has come to teaching the technical and professional communication course fairly recently (in the last 5 years) after a long career in industry, including two years in engineering and fourteen years in marketing and public relations from the entry- to executive-levels. Overall, she has twelve years of experience in manufacturing settings. Mandy feels that her experience in industry helps her to create bridges for the students between the textbook, classroom assignments, and what their experiences in industry will be.

**What is Mandy’s institutional situation?** Mandy teaches 100–150 students a semester across five blocks of a writing class that caps at 32 students. The required writing course for all students is part of the general education program at the technical college. Recently the course name was changed from Technical Writing to Workplace Communications because the course, “really doesn’t address the standards for technical writing that are acknowledged across other curriculums at other institutions.” The technical and professional communication service course is taken by students from across all of the trade programs. The level of standardization (required textbook and outcomes) of the course is quite high in order satisfy accreditation requirements, although instructors develop their own syllabi and vary in their approach to teaching the required assignments. Mandy does have
access to professional development and is “pushed” to participate in it by a dean of instructional design who has developed brackets of achievement to motivate participation.

The background of the faculty in the general education program varies widely. While several instructors, like Mandy, have backgrounds in the liberal arts and training in teaching in higher education, many instructors have come to teaching at the trade school from K-12 education. As Mandy pointed out, these instructors have a different philosophy towards teaching and different expectations for standardization and the level of rigor of the courses. While instructors from a K-12 background see the standards at the technical college as higher than those in a high school, instructors with Mandy’s background in higher education see the standards as a step down. In addition, Mandy explained, K-12 teachers expect less autonomy over the curriculum and less instructional license to “to approach lessons the way you feel it’s best to approach them.” In addition, some instructors, such as herself, have industry experiences, while others do not. Mandy sees a “pretty sharp line of delineation” between the teaching practices of instructors with industry experience who can bring that experiential knowledge into the classroom, and those who do not have it and therefore have to draw primarily on the textbook.

The variation in faculty backgrounds has resulted in some conflict in the department when discussion has been opened up about the standardized assignments in the course and how to ensure that they are relevant to the contemporary workplace. As Mandy put it, “when I came into this position a couple of years ago, one of the instructors was using an assignment for instructions—Lego instructions, which my daughter did in fifth grade.” The debate over this instructions assignment opened up the conversation about, “how the kinds of lessons we teach are adapted from 30 years ago to how we’re adjusting our approaches to instruction today.” According to Mandy, they have moved away from that assignment and have gone out to industry to ask, “what are you doing, how are you developing these things.” Mandy sees building these bridges with industry as key to making the course relevant for students. The trade school actually has a lot of support from area industry, so Mandy can expect a positive reception when she approaches a company with questions or sends students to a company for samples of writing. In her quest to improve the technical and professional communication service course at the trade school,
Mandy seems to have the support of the administration and local industry; however, the variations in instructor experience and training continue to present a challenge.

**How does Mandy respond curricularly?** In her own teaching, Mandy continues to shape her lessons and approach to the technical and professional communication service course around her desire to connect students with the real writing situations of their trade and her worry about the transfer of knowledge from her classroom to students’ future careers in a trade: “I’m not sure I feel totally confident about knowledge transfer when they go to apply it to the job. There still seems to be a hesitation with the students…Personally, even as an instructor, regardless of how fantastic my lesson is [laughter], there may be some that get it, but it seems like there’s a larger group that don’t.” For example, Mandy sends her students out to industry to gather sample types of writing that they can discuss in class: “When they bring those back to class, we can talk about them and say even if we don’t actually go through the process of filling those out, we can talk about what they are, how they work, things like that, and what they need to know and communicate on those documents.”

One of the newer assignments that has been added to the course is a technical description or technical specification. This assignment was requested by one of the trade programs at the college because of information from the industry advisory board that this was an important type of writing for students. Mandy talked about how this is a challenging assignment to teach because students get lost in the details of the procedure they are describing. Mandy’s primary concern is that they maintain a focus on transfer, so she asks students: “How are you going to transfer that knowledge to the workplace? How are you going to acquire this skill and master it as you go into the workplace?”
Ilsa: Teaching the Technical and Professional Communication Course in Geographical, Cultural and Professional Isolation

<table>
<thead>
<tr>
<th>Respondent Data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional/Instructional status</td>
<td>Full-time, non-tenure track</td>
</tr>
<tr>
<td>Highest degree earned</td>
<td>PhD</td>
</tr>
<tr>
<td>Field of graduate training</td>
<td>Composition &amp; Rhetoric</td>
</tr>
<tr>
<td>Industry Experience</td>
<td>Book publishing industry; writing court expert opinions; scholarly editing work</td>
</tr>
<tr>
<td>Area of scholarly interest</td>
<td>Composition &amp; Rhetoric</td>
</tr>
<tr>
<td>Number of years teaching TPC course</td>
<td>6-10</td>
</tr>
<tr>
<td>Institutional Situation</td>
<td></td>
</tr>
<tr>
<td>Institutional type</td>
<td>Tribal College (2-year degrees)</td>
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<td>In what department/program/college is it offered?</td>
<td>Communications Department</td>
</tr>
<tr>
<td># of sections offered per year</td>
<td>1–10</td>
</tr>
<tr>
<td>Who takes the course?</td>
<td>Sophomore level students; liberal arts and social science students, some business students; health and fitness and computer science</td>
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<tr>
<td>Who primarily teaches the TPC course at the institution?</td>
<td>FT-NTT</td>
</tr>
<tr>
<td>Are there standardized TPC course outcomes?</td>
<td>Yes</td>
</tr>
<tr>
<td>Is there a common syllabus?</td>
<td>Yes</td>
</tr>
<tr>
<td>Is there a required textbook?</td>
<td>Yes</td>
</tr>
<tr>
<td>Assessment?</td>
<td>Yes</td>
</tr>
<tr>
<td>Is there instructor professional development?</td>
<td>No</td>
</tr>
</tbody>
</table>

What is the story about Ilsa? Ilsa speaks for a population of writing instructors at tribal colleges that has little voice in the mainstream forums of writing studies.
Due to a severe lack of resources, institutional isolation that is the outcome of the historical development of tribal colleges, cultural isolation from mainstream business culture, and a general sense that the larger world of higher education does not care, the challenges that are faced by service course writing instructors at tribal colleges and the wisdom learned from working with these challenges go largely unheard in writing studies scholarship. This case study about Ilsa is valuable for the insight that it offers into the experience of a writing instructor at a tribal college. And there is a lot to learn. As Ilsa said, in the half-joking tone of all profound truths: “... native people often joke that ‘oh, now, finally, white people learned this. We have known this all along,’ and that’s true…[native people] have an amazing culture of teaching and learning, for example.”

Who is Ilsa? Ilsa has over 30-years’ experience teaching, including lengthy experience with teaching English as a foreign language and as a second language. She has over six-years’ experience teaching the technical and professional communication service course, as well as industry experience in book publishing and other professional writing. After earning a degree from a university in eastern Europe, Ilsa earned a PhD in Composition & Rhetoric at the University of Arizona, and, after several teaching jobs at two- and four-year institutions, she started teaching at a tribal college. Since 2007 she has taught full-time at the tribal college, where she decided to stay because the teaching environment was so “fascinating and challenging.” Despite little support for her research activity, Ilsa is an active scholar, including a chapter in an edited collection about college-level reading that was written from research supported by an American Indian College Fund grant. While there has been interest in her scholarly work, interest in and attendance at conferences for tribal college faculty tends to be very limited. While it is a “wonderful” experience to share scholarship and teaching practices with 6 people, these small conferences remain isolated from what is happening at CCCC, which “is something completely different happening.” This isolation from mainstream scholarship for tribal college faculty is something that Ilsa would like to see change.
What is Ilsa’s institutional situation? Ilsa has recently been promoted to the chair of the Communications Department at a tribal college in the upper Midwest. Because the rank of tenure-track is not available at tribal colleges, she is a full-time, non-tenure track faculty in a department of four full-time (including her) and 2 part-time faculty. Faculty face challenges that include very long commutes that make bringing instructors together for meetings impossible, and heavy teaching loads of up to eight sections. In addition, there are no course releases available for extra responsibilities and research shows that, according to Ilsa, salaries at tribal colleges are 10% to 15% below the average of similar faculty of other two-year colleges. For the technical and professional communication service course in particular, the curriculum is standardized via a required textbook (*Successful Writing at Work* by Philip C. Kolin) that Ilsa said she had no control over choosing.

How does Ilsa respond curricularly? The institutional situation strongly shapes how Ilsa approaches the technical and professional communication service course. One of her biggest challenges, for example, is using a standard textbook. While the required textbook (Kolin) is considered a standard text for technical and professional communication courses across higher education, native students have a hard time identifying with business examples and writing conventions shaped by mainstream white culture: “I was teaching kids who grew up on a reservation, and, you know, in this book there are assignments that ask them to pretend like they are the CEO of Exxon, or something. . . ” Native students are both geographically and culturally isolated from mainstream business culture, and they do not grow up with the assumption that they will join it someday—in fact, they often express skepticism about its value. As a result, Ilsa uses the textbook as a reference for document conventions, but she looks to the local community for writing projects that will engage and empower students.

Community writing projects in which students engage include designing a flier to make the class registration process clearer to students at the college, researching a report on how to set up an animal shelter in the community, or preparing a PowerPoint presentation on a proposal to improve the programming at the Boys & Girls Club. Many of these projects go beyond classroom work and contribute to material change in the community. For example, Ilsa’s students did the
research necessary to implement a bus service to campus so that students do not have to rely on their cars to get to campus during the long, cold winters. To the fullest extent possible, Ilsa endeavors to bring in real audiences for the students’ projects, including community elders and the administration of the college. In some instances, such as the flier about registration, the projects are adopted by the stakeholders and actually put into use.

One of the challenges that Ilsa worries about for students is their access to technology and how a certain level of technological literacy has become a norm across higher education. One of the limitations of incorporating multimedia into the curriculum is the lack of professional development for instructors: “I would need some money to train [instructors] how to teach students to put together a video project. [Students] have cell phones...they are very creative with art and design and that would be so nice, but I am not that good...I can’t handle [becoming proficient in more technologies] without help.” For example, Ilsa pays for her own Prezi subscription, but she cannot expect students to buy one. She often finds herself showing students technologies without being able to teach them how to work with it.

One of the goals that Ilsa has before she retires is to set up a Communications major. She has started negotiations, but she has to move slowly in order to gain support and to show that she does not just want to do “fancy English teaching.” On the contrary, Ilsa wants to argue that “no matter what other major they choose, if they are good readers and writers, their chances of getting jobs and moving on are better.” Despite Ilsa’s commitment to the work that she does, she realizes that, “you can’t turn around and change the world.” The challenges faced by instructors at tribal colleges have material consequences for the education of native students, and this is a fact that Ilsa would like the broader writing studies community to know.
George: “Contingent Faculty, With All That That Means”

<table>
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</tr>
</thead>
<tbody>
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<td>PhD</td>
</tr>
<tr>
<td>Field of graduate training</td>
<td>Literature, English or Comparative Literature</td>
</tr>
<tr>
<td>Industry Experience</td>
<td>No</td>
</tr>
<tr>
<td>Area of scholarly interest</td>
<td>No</td>
</tr>
<tr>
<td>Number of years teaching TPC course</td>
<td>1–5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Institutional Situation</strong></th>
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</thead>
<tbody>
<tr>
<td>Institutional type</td>
<td>Doctorate Granting Institutions</td>
</tr>
<tr>
<td>In what department/program/college is it offered?</td>
<td>English Department</td>
</tr>
<tr>
<td># of sections offered per year</td>
<td>11–50</td>
</tr>
<tr>
<td>Who takes the course?</td>
<td>Junior, Senior, Transfer, International; Engineering and CS and Science &amp; pre-medical</td>
</tr>
<tr>
<td>Who primarily teaches the TPC course at the institution?</td>
<td>Full-time, non-tenure track.</td>
</tr>
<tr>
<td>Are there standardized TPC course outcomes?</td>
<td>Yes</td>
</tr>
<tr>
<td>Is there a common syllabus?</td>
<td>Yes</td>
</tr>
<tr>
<td>Is there a required textbook?</td>
<td>Yes</td>
</tr>
<tr>
<td>Assessment?</td>
<td>I don’t know</td>
</tr>
<tr>
<td>Is there instructor professional development?</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**What is the story about George?** George’s story exists at a nexus at which several important and well-documented stories about labor practices in higher education collide. First, there is the story of individuals who pursue advanced graduate study in areas of English Studies for which there is limited and/or declining curricular demand. Second, there is the story of graduate programs in English Studies that make available specialized training in subject areas for which full-time, tenure-track positions are increasingly difficult to secure.
Third, there is the story of institutions that create considerable demand for writing instruction by initiating writing requirements for large cohorts of students—demand that cannot be met by existing English and/or writing faculty. These stories coalesce in the case of George, a Visiting Assistant Professor (VAP) on a three-year contract at a large Midwestern university. George's case speaks to a number of challenges within the fields of technical communication, English, and writing studies, but especially to the difficulty of providing instruction in technical and professional communication to large groups of students when one’s labor force is entirely contingent and frequently lacking in explicit training in subject-area knowledge.

Who is George? Like many who teach in the technical writing program in which he works, George never intended to teach technical and professional communication courses, has no graduate training that prepared him to do so, has no industry experience on which to draw, and does not identify technical communication or even composition as his primary research areas. While George has taught a range of introductory literature and writing courses, his graduate training is in the area of medieval studies. Despite his teaching load, George continues to pursue research in his field but writes and researches in other areas as well. Recently he published a short article in a well-respected composition journal that examines his marginalized status as a non-tenure track faculty member. Occasionally, George has attended conferences in the field of composition. In sum, George is a teacher and scholar trying to maintain two professional identities at once—the identity he developed in his chosen field (i.e., medieval studies) and the one he currently occupies in his adopted one (composition and technical writing).

What is George’s institutional situation? The institutional situation surrounding the technical and professional communication service course at George’s university plays a significant role in shaping the curriculum that he and his colleagues must implement. According to George, the technical writing course he teaches was created to satisfy accreditation requirements of the university’s engineering college (students from other majors take the course, but the majority who enroll come from engineering). Thus, the exigence for the course originates neither within George’s department nor within George’s own scholarly interests but, instead, within an entity external to both. Given this,
the curriculum is standardized to a considerable degree. During our interview, George shared the almost 50-page course packet that both enumerates course policies and dictates curricular decisions. As this document makes clear, all sections of the course utilize the same textbook, work towards the same outcomes, and include the same assignments. The papers students produce are of the standard communications-genres type, including resumes and cover letters, technical instructions, proposals, memos, and reports. In sum, due to the institutional situation surrounding the technical and professional communication course at George’s university, there is little opportunity for instructors to innovate or experiment with the curriculum.

**How does George respond curricularly?** Perhaps not surprisingly, George reported that he feels “micro-managed” in his current position, treated “as if [he] were a graduate student rather than having completed [his] degree and taught for several years.” Not long after he was hired, George attempted to experiment with the curriculum a bit by “having students look at outside documents and critique them [as a way of] building familiarity with genre conventions.” He was, he explained, “rebuked” and asked to stick to the program. Now he tows the line, adhering almost entirely to the program curriculum.

Given George’s teaching load, the highly-prescribed curriculum he is charged with delivering is, he admitted, in some ways a relief: “The work is fairly easy to do, which is helpful while teaching three or four sections.” Still, George feels conflicted, professionally, teaching a course that, as he concedes “really kind of teaches itself.” And yet George strives to do his best by his students, making small efforts where and when possible to improve the class. “If teaching [the technical and professional communication service course] is going to be the job I do, I want to know enough about it to be able to do it well,” he explained. Still, George said he has no plans to make this work into a formal area of research. For now, he will continue to teach writing as he explores post-doctoral opportunities in his primary field, medieval studies.
Julia: Seeking Greater Authority to Innovate

<table>
<thead>
<tr>
<th>Respondent Data</th>
<th></th>
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</thead>
<tbody>
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</tr>
<tr>
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</tr>
<tr>
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</tr>
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</tr>
<tr>
<td>Area of scholarly interest</td>
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</tr>
<tr>
<td>Number of years teaching TPC course</td>
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</table>

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional type</td>
<td>Masters-granting College or University</td>
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<tr>
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</tr>
<tr>
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<td>1–10</td>
</tr>
<tr>
<td>Who takes the course?</td>
<td>Sophomore, junior, senior, transfer, international students; Business, engineering, science and pre-med, social sciences, liberal arts, communications, English, Writing/Rhetoric</td>
</tr>
<tr>
<td>Who primarily teaches the TPC course at the institution?</td>
<td>Tenure-Track Faculty</td>
</tr>
<tr>
<td>Are there standardized TPC course outcomes?</td>
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</tr>
<tr>
<td>Is there a common syllabus?</td>
<td>No</td>
</tr>
<tr>
<td>Is there a required textbook?</td>
<td>No</td>
</tr>
<tr>
<td>Assessment?</td>
<td>Yes</td>
</tr>
<tr>
<td>Is there instructor professional development?</td>
<td>Yes</td>
</tr>
</tbody>
</table>

What is the story about Julia? Julia’s experience speaks to the sometimes surprising challenges that instructors face in teaching the technical and professional communication service course, even when they are working in close to ideal circumstances. As a new assistant professor at a small liberal arts college where teaching is given top priority, Julia has considerable autonomy in devising her curriculum. Given her
graduate training in the fields of writing studies and technical and professional communication, she has designed an innovative course that attends closely to teaching students to understand and appreciate the role of rhetoric and context in all composing situations. This transfer-oriented curriculum is in danger, though, because of the challenges it presents to Julia’s students, some of whom bring conservative expectations to the class. Having recently received negative feedback on course evaluations, Julia has begun to reconsider her pedagogical innovations—an ironic turn of events given her background and the wide leeway she has been granted by her department to design a course that aligns with her knowledge and goals.

**Who is Julia?** Julia is ideally suited to the teaching of technical and professional communication. Her graduate training at a midwestern university helped her to craft a research agenda which investigates the ways in which individuals enmeshed within networks of activity interact with professional documents and texts. Additionally, while pursuing her doctorate, Julia served in an administrative capacity within both her university’s first-year and professional writing programs. She has published in writing studies’ major journals, including in venues that focus on professional writing and writing for digitally-mediated environments. Teaching the technical and professional communication service course is not something Julia does to pay the bills. It is among her primary interests and pleasures. “I’ve always enjoyed teaching this course,” Julia explained. “I teach it in a way that I think is fun for the students and provides great context for the differences between writing at school and writing at work.”

**What is Julia’s institutional situation?** The technical and professional communication course that Julia teaches is taken by a diverse range of students, including those in the professional writing track and those who enroll in order to satisfy the college’s advanced writing requirement. Because the class is housed within English and, for all intents and purposes, Julia “owns” it, she has wide latitude in the course design. She invents and revises course outcomes, chooses teaching materials, and devises assignments as she sees fit. Because only a few sections of the course are offered each year, there is no course coordinator or programmatic assessment procedure. First and foremost, the class is
understood to make an important curricular contribution to the department’s ambitious writing major. Secondarily, it allows the department to contribute to the college’s university-wide advanced writing requirement.

**How does Julia respond curricularly?** A glance at Julia’s course syllabus suggests the non-traditional approach she takes to the class: the textbooks she has selected are not of the standard, genre-driven type, and instruction is not organized around explicit guidance in composing workplace genres. Instead, the class is built on the notion that “Each organization in the ‘real world’ is different and will require different kinds of writing.” As such, the focus of the course, Julia explains, is “NOT to teach the skills you need to write for a professional organization, but to teach how to learn the skills you need once faced with a professional writing situation.” Julia chooses to focus on raising awareness about the significance of rhetorical situation to professional composing. “I have students do a lot of thinking about audience and context,” she explained. “I want them to be aware of what they already know about writing and what more they may need to know.”

The challenge Julia faces with this context-sensitive approach to technical and professional communication course instruction is that it is difficult to find curricular materials that are suitable for her audience (i.e. undergraduate students). An admirer of the Writing-About-Writing (WAW) approach to teaching first-year composition, Julia asks students in her classes to read scholarly articles from the fields of writing studies and technical communication, but the students, and particularly the non-writing majors, have tended to respond negatively, sometimes writing comments on Julia’s teaching evaluations that threaten her ability to secure tenure and promotion. “They don’t like the reading in the course very much,” she said. “I wish there were things [for them to read] that were geared more towards undergraduates.”

The problem of locating developmentally appropriate curricular materials is, Julia pointed out, compounded by her status as a young, female instructor. These two issues come together to create what Julia has come to feel is an authority problem—because she is young and because she is teaching outside of the traditional box of a well-known textbook, students sometimes question her credibility. To address this dilemma, Julia plans to experiment with adopting a more traditional technical and professional communication textbook to supplement the
materials and approach she is already using. “I still want to use the readings [from the field], but I want to put them with a textbook so I can say, ‘Okay, this is how you write a report.’ I just feel like I need somebody else to be supporting what I say in class.’” As Julia continues to rethink the design of her course, she hopes to strike a better balance between the more traditional genre-based approach to the teaching of technical and professional communication and her more rhetorical, transfer-oriented approach. In this way, the institutional situation in which Julia finds herself as a young, female, assistant professor working in a small, pedagogically-oriented college plays a not insignificant role in shaping the evolving curriculum that Julia teaches.

**Conclusion**

We opened this article by asking who teaches the technical and professional communication service course and in what institutional situations. We have reported two different kinds of answers to this question: 1. trends across instructor experience and institutional context in the aggregated data of the survey and, 2. localized experiences in the case studies. Given the data presented above, we argue that discussion of the status of the technical and professional communication service course must account for both types of answers in order to remain relevant to the broadest group of stakeholders. This is easier said than done, however.

On the one hand, the survey data reveals at times strong trends in instructor training and experience and institutional situation, suggesting that discussion of the status of the technical and professional communication service course can rely on so-called “average” (in the rhetorical, not the mathematical sense) experiences. On the other hand, the case studies present an alternative message, one of great diversity and localization of experience.

Given that it is impossible to know or predict whether individual instructors’ experiences will reflect any or all of the general trends, it will be challenging to bring instructors of service courses and technical and professional communication programs together to advocate for cohesion, shared missions, or shared outcomes. Having said this, we would like to press our readers to move outward from their own experiences to ask what we have in common, as teachers of the technical and professional communication service course within and across diverse institutions of higher education.
The differences in the institutional situations shaping the work of those who teach this course are, as we have seen, considerable. At the same time, we have seen areas of overlap and opportunities for dialogue across institutional situations. It is our hope that this article will assist readers in reconsidering not just the circumstances surrounding their own teaching of the service course but, also, the circumstances shaping the teaching of the technical and professional communication, in general.

References
## Appendix A

### Table 1A. Percentage of Survey Respondents by Carnegie Classification Institution

<table>
<thead>
<tr>
<th>Carnegie Classification Category</th>
<th>Proportional Representation by Student FTE Enrollment (numbers available in 2014)*</th>
<th>Percentage of Survey Respondents (n = 154; complete surveys only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associates Colleges</td>
<td>37%</td>
<td>38% (n = 59)</td>
</tr>
<tr>
<td>(predominantly 2-year institutions)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baccalaureate Colleges</td>
<td>7%</td>
<td>4% (n = 6)</td>
</tr>
<tr>
<td>(largely liberal arts colleges)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masters Colleges and Universities</td>
<td>23%</td>
<td>19% (n = 30)</td>
</tr>
<tr>
<td>Doctorate-Granting Institutions</td>
<td>28%</td>
<td>37% (n = 57)</td>
</tr>
<tr>
<td>Special Focus &amp; Faith Institutions (includes stand-alone law, business and medical schools)</td>
<td>7%</td>
<td>1% (n = 1)</td>
</tr>
<tr>
<td>Tribal Colleges</td>
<td>.1%</td>
<td>1% (n = 1)</td>
</tr>
</tbody>
</table>

*Numbers rounded-up to nearest whole number. Total exceeds 100% because of rounding.
Table 1B. Percentage of Survey Respondents by Faculty Rank

<table>
<thead>
<tr>
<th>Faculty Rank</th>
<th>AAUP reported percentage of all faculty for 2011</th>
<th>Percentage of Survey Respondents (n = 154; complete surveys only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure Track</td>
<td>23.5%</td>
<td>38% (n = 59)</td>
</tr>
<tr>
<td>Full-Time, Non-Tenure Track</td>
<td>15.7%</td>
<td>23% (n = 35)</td>
</tr>
<tr>
<td>Part-Time Adjunct or Contingent Faculty</td>
<td>41.5%</td>
<td>20% (n = 31)</td>
</tr>
<tr>
<td>Graduate Instructor/Teaching Assistant</td>
<td>19.3%</td>
<td>7% (n = 11)</td>
</tr>
<tr>
<td>Other, including full-time staff with teaching responsibility</td>
<td>N/A</td>
<td>12% (n = 18)</td>
</tr>
</tbody>
</table>
Author Information

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Mike Michaud is Associate Professor of English and chair of the campus Writing Board at Rhode Island College (Providence, RI). He teaches courses in rhetorical theory, digital and multimodal writing, first-year writing, and supervises an internship practicum. His work has appeared in College Composition and Communication, Writing on the Edge, Writing and Pedagogy, Composition Studies, and Intermezzo. Mike’s current research focuses on Donald M. Murray and the writing programs at University of New Hampshire.

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Sustaining Service Learning in the Service Course

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Eastern Washington University

Abstract. As a pedagogical practice, service learning is highly valued in technical communication because it not only effectively teaches writing skills but also develops students’ ability to become active and caring citizens. While much has been published about the benefits and challenges of service learning in technical communication, the question of how we address the challenges and sustain service learning in the service course has received little attention. In this article, I argue that sustainability of service learning is closely linked to the models we use to implement and structure it. I identify four models which can be classified according to two overarching categories: student-driven and community-driven. The student-driven model has two variations based on whether students work individually or in teams. The community-driven model has two variations based on whether multiple partners participate or whether a single partner participates. I argue that we need to use a model for implementing service learning that is different from current practices if we wish to improve sustainability. Through implementations of various models, I have identified the Community-Driven Individual Partner (CDIP) model as the most effective for sustaining service learning in the service course in a face-to-face classroom. It enables instructors to reap the benefits of service learning while reducing the effects that can undermine service learning’s sustainability. The CDIP model enables instructors to reduce the workload associated with service learning, to control for quality, to build more effective relationships with community partners, and to realize positive outcomes in terms of student learning and citizenship.

Keywords: community engagement, institutional data, instructor labor conditions, long-term study, program sustainability, service course, service learning
The service course has played a central role in the development of service learning pedagogy in technical and professional communication. Early research on the practice of service learning in both introductory and advanced service courses identified strategies for implementing service learning, established the benefits of service learning, and warned about corresponding challenges (Henson and Sutliff, 1998; Huckin, 1997; Sapp and Crabtree, 2002; Stone, 2000).

The benefits of service learning as a pedagogical practice in technical communication are now well recognized. Like other forms of problem-based, experiential pedagogy, service learning offers students valuable exposure to workplace practices and writing. Service learning improves student’s rhetorical problem-solving and metacognitive skills by exposing students to “real situations” that require them to exercise greater awareness of audience and to be more “flexible, creative, and strategic” (Huckin, p. 57). The skills developed in service learning also allow students to more readily transfer what they learn in the classroom to other contexts outside the classroom (Smith, Taylor, and Young, 2007).

Service learning has become a widespread pedagogical practice in technical communication because it not only effectively teaches professional writing skills but also develops students’ ability to become active and caring citizens. Through service learning, “students engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development” (Jacoby, 1999, p. 20). In service learning, students work with a community partner to build reciprocal relationships (Dubinsky, 2004). As a result, students often experience a greater sense of agency or empowerment as a communicator (Stone, 2000) and as a participant in a community. They experience “ethical and social growth, fostered by reflection and conversation, designed to increase the students’ investment in society” (Dubinsky, 2004, p. 21). In other words, students also develop and perform civic engagement (Scott, 2004) and prepare to become active, conscientious citizens in “a diverse democratic society” (Sapp & Crabtree, 2002, p. 419).

In pursuit of such benefits and outcomes, service learning pedagogy has been widely adopted with approximately 93% of technical and professional communication programs using service learning in their curriculum (Allen & Benninghoff, 2004, p. 166). But the question of
how we overcome the challenges and sustain service learning in the technical and professional communication service course has received little attention in technical and professional communication literature. Jeffrey Grabill, in 2004, warned that service learning is unsustainable as an individual initiative (p. 92). He argued that, to be sustained, service learning would need to be fully integrated into programs, supported by administration, and rewarded as faculty work. As service learning becomes more and more institutionalized, the question of sustainability becomes even more critical. As of 2015, 361 universities received the Carnegie Community Engagement classification in which service learning is a core element. However, widespread adoption and institutionalization do not guarantee sustainability. In this article, I argue that sustainability of service learning is closely linked to the models we use to implement and structure service learning. Attributes of our implementation model can play a critical role in the number of challenges encountered and ultimately to the overall sustainability of service learning, including such attributes as how integrated the service learning is within the course curriculum, how many partners and projects we work with in a given course, whether or not the service learning builds connection with students and the community, and what type of relationships we build with community partners.

This article identifies four models for implementing service learning. It outlines the characteristics of those models in terms of practices and outcomes. Through an example of iterative development of service learning in a technical and professional communication service course, this article illustrates how the models we use influence the challenges we encounter and how the models also provide the means for us to mitigate those challenges. I show that for the face-to-face service course we need to use a model for implementing service learning that is different from current practices if we wish to improve sustainability.

Models for Structuring Service Learning
We tend not to think of service learning as being shaped by multiple models. Instead we see a single practice defined by three or four key principles. Thomas Huckin (1997) emphasized four key characteristics
that distinguish service learning from other forms of experiential learning: (1) participation in organized service that would (2) address a community need, (3) be integrated into the academic curriculum, and (4) involve structured reflection in order to foster civic responsibility (p. 50). These four principles continue to define service learning in technical and professional communication even today. But the principles are not sufficient for defining the model for how we enact service learning.

The models we use to enact service learning contribute to the outcomes in terms of the benefits and the challenges realized. In technical and professional communication, four areas of outcomes constitute the primary sources for the challenges to sustainability: quality, civic orientations (charity and responsible citizenship, action and participatory citizenship, or change and social-justice citizenship), workload, and type of interaction (exploitative, transactional, or transformative). The goal is to overcome the challenges that compromise both the success and sustainability of service learning. For example, quality is often identified as one of the challenges of service learning. At its most basic, quality refers to providing community partners with a product that meets their expectations. Failing to meet a partner’s expectation results in a lack of trust that affects future interactions with the partner and undermines the success of the service learning experience (Kimme Hea & Wendler Shah, 2016). It also increases the cost for the community partners. Community partners must commit time and effort to service-learning projects (resources they can little afford), and they expect something in return. When the service is not completed, the relationship, for the community partner, becomes exploitative. Such exploitation undermines several core principles of service learning that emphasize reciprocal relationships to address a community need. Practitioners of service learning have sought to address the issue of quality by having students work in teams. Because teams consist of multiple people with various skills, they are less likely than an individual to fail to deliver a product. Holding students accountable by fully integrating the service learning into the course with requirements of proposals, progress reports, and regular interactions with the community partner also helps control quality. By incorporating teams and integrating project management into their model of service learning, practitioners seek to alleviate challenges related to quality. In the process, however, they may also increase workload.
Workload is another factor that can undermine the sustainability of service learning. Having students work in teams often requires the instructor to locate community partners and identify service-learning projects. Locating suitable partners can add substantially to the instructor’s workload. Requiring students to locate a community partner and identify a project helps reduce the workload for the instructor. But having students locate partners and projects can minimize the complexity of the relationship between the community partners and the instructor. It also takes more time, leaving less time to complete the project and increasing the risk of incomplete or low-quality project documents.

As we can see, the outcomes for service learning are influenced by the practices we use to define our models for implementing service learning. Practices determine which challenges occur and the degree to which those challenges negatively influence sustainability. Different combinations of practices produce different results, addressing some challenges while exacerbating others. Myriad practices exist for enacting service learning, ranging from the type of language we use ("client" or "community partner") to the type of organizations we partner with (nonprofit, business, academic). In terms of the models we use to implement service learning, I argue that five core practices are central:

- Number of students per project: Students can work individually or in teams.
- Number of partners and projects per course: A single course can involve multiple partners or one partner and can involve multiple projects based on different genres or a single genre, or a course can involve a single project with one or multiple instantiations.
- Integration: Service learning can be added on to a course as an additional or alternative assignment without being integrated into the course curriculum (discipline-based approach), or service learning can be integrated into the course with the project being a central assignment and other assignments supporting and contributing to the project (problem-based approach).
- Duration and recurrence of the project: Projects can be short term or continuous, and they can occur one time or be repeated.
The complexity of the relationship between instructor and community partner: Relationships between instructor and community partners can range in complexity, based on a continuum of cooperation, coordination, collaboration, or cultivation (with cooperation being least complex and cultivation being the most complex) (Abravanel, 2003, p.11).

Different combinations of practices form four principal models that can be classified according to two overarching categories: student-driven and community-driven. The student-driven category has two variations based on whether students work individually or in teams. The community-driven category also has two variations based on whether multiple partners participate or whether a single partner participates. In the community-driven approach, students work in teams.

**Student-Driven Models**

In the student-driven models, students develop their own service-learning project by identifying and pairing with a community partner. The mission, goals, and programs of the nonprofit organization define the community need that will be addressed through the service learning. Students address the community need (one of the key principles of service learning) by volunteering for the nonprofit. The volunteer experience is connected to the outcomes of a course but, generally, not integrated into the course. Student-driven models tend to focus on one-time, short-term projects.

The focus on one-time projects produces the least complex type of relationship between the community partner and instructor (Enos & Morton, 2003). The resulting relationships are primarily transactional (based on exchange) and entered into easily. The relationships should be reciprocal with each participant receiving something useful (the nonprofit has volunteers to perform work, the instructor engages students, and the students meet assignment requirements). Although not continuous, the interaction can be repeated over extended periods of time. The relationships are characterized by interactions based on cooperation. In cooperative interactions, the community partner and the instructor retain distinct roles (Abravanel, 2003). Their relationship functions within existing systems of activities as part of their normal work. They may, in fact, have very little contact with each other. As transactional, the relationships are instrumental in nature and involve little commitment beyond the project itself (Enos & Morton, 2003).
A charity orientation is often reinforced with the service learning being “carried out on behalf of the community instead of in partnership with the community” (Magrath qtd in Jacoby, 2003, p. 2). Joseph Kahne and Joel Westheimer (1996) describe this charity orientation to service learning based on the moral, political and intellectual domains of citizenship. Accordingly, the charity orientation centers on the moral of giving. It emphasizes a volunteer ethic linked to helping those less fortunate. In the political domain, the charity orientation is concerned with counteracting self-interest with the benefits of altruism. As such, the actions taken in a charity orientation are individualistic rather than collective. Intellectually, the charity orientation to service learning seeks to foster experience-based learning, but it remains additive, seeking to add to the academic experience by increasing self-esteem, providing authentic experiences, and connecting academic learning with real-world applications.

The outcome of such an approach is responsible citizenship, which defines social responsibility based on personal virtues. A good citizen, in this orientation, consists of a virtuous person who exercises honesty, integrity, and truthfulness, and who is respectful of others. Such citizens act responsibly in their community by working and paying taxes, obeying the law, giving to those less fortunate, helping in times of crisis, and contributing to charitable causes (Westheimer & Kahne, 2004).

**Student-driven, individual model (SDI).** The student-driven, individual model (SDI) (Figure 1) generally reflects a discipline-based approach to service learning. According to Kerrissa Heffernan (2001), in the discipline-based approach, service learning is often incorporated as an alternative assignment and is not fully integrated into the curriculum. For example, the SDI model is commonly used for composition courses (Bowden and Scott, 2003). Often, as part of this discipline-based approach, students volunteer for a nonprofit or community organization and write about the work, or, alternatively, they study a theme and analyze related readings. They then perform service related to the theme and write about their experience as it relates to the theme and the readings (Bowden and Scott, 2003). In technical communication, for the SDI model, students volunteer with a community partner to complete a project related to professional writing. The project is an additional or alternative assignment with little to no integration into the course.
In terms of both resources and politics, the SDI relationship and the interactions it entails are generally defined as low risk because they require limited interaction between participants and no commitment to providing ongoing resources. But the SDI model does, in fact, have costs. Without ongoing institutional support or resources such as a center for service learning or a community engagement office, students may face substantial challenges in locating suitable partnerships and projects. In the SDI model, because the community partner engages directly with the students, the projects may place an extra burden on community partners who must respond to multiple requests and work with students on an individual basis. Time is also a factor: Students may not have sufficient time to identify a partner and an appropriate project (Grabill, 2004) or to complete the project in a single, academic term. Incomplete projects can add to the costs for community partners and negatively impact students’ experience. The SDI model also offers little in the way of quality control. Quality control ensures that community partners receive a product or service that they can use. When students seek only to meet course requirements, the SDI model may reinforce a “hit it and quit it” relationship with the community partner (Cushman, 2002, p. 41), a relationship that Grabill (2004) describes as "low-level colonization" (p. 85). If constant demands are placed on organizations with little to no return, these relationships change from being transactional to being exploitative (Clayton, Bringle, Senor, Huq, & Morrison, 2010).
Sustaining Service Learning in the Service Course

Student-driven team model (SDT). The student-driven team model (SDT) (Figure 2) uses student teams to enact a discipline-based approach to service learning. The SDT model, however, can also be implemented as a problem-based service-learning approach. In problem-based service learning, the service learning is integrated into a discipline-specific course (Heffernan, 2001) rather than added on as an extra or alternative assignment. The discipline-specific courses tend to be advanced, non-service courses. In this model, technical writing is the service that students perform as they work with a community partner to help the partner address a community need. In technical communication, the SDT model often uses a consultant/client approach where the students operate as consultants performing work for a community partner who functions as a client. For example, students in a proposal writing course would identify a community partner and write a grant proposal for the partner to fulfill a course requirement.

The SDT model also focuses on one-time, short-term projects (Enos & Morton, 2003) that occur over the span of an academic term. The relationship is similar to the SDI model, but the focus on student teams rather than individual students reduces the costs for community partners. Instead of managing individual students, community partners can work with multiple students at the same time.
for the same project. The time that students need for identifying and completing projects is still a factor, but the possibility of incomplete projects decreases. Teams also offer an improved level of quality control. However, there is no guarantee that teams will follow through, given a lack of integration and the minimal power the community partners have to hold students accountable.

Community-Driven Models
In community-driven models, the instructor (as a representative of the university institution) works directly with community partners who represent community needs. In this model, the instructor locates and recruits the community partners and works with the partners to determine the appropriateness of projects. Students, then, work with the community partner to complete a project that supports the partner in addressing a community need. A range of relationship types are possible using community-driven models.

Multiple community partners (CDMP). In the first instance of the community-driven model, the instructor works with multiple community partners (CDMP). The relationship between instructor and community partners remains transactional, but the costs in terms of commitment and designated resources are higher than those for the student-driven models. The CDMP model (Figure 3) uses a problem-based approach and builds relationships primarily based on short-term projects, but this model can also support continuous projects (project that have a duration that goes beyond one academic term).

In CDMP, the relationships are defined by interactions based on coordination. In coordination (Abravanel, 2003), the partner and the faculty work together to plan how the project will proceed. The partner and the instructor communicate regularly and maintain contact throughout the project. Short-term projects are frequently used to apply or affirm existing academic knowledge (Enos & Morton, 2003). As such, they limit the degree to which participants can become involved in changing systemic inequities. So while such projects can avoid a charity orientation, they generally do not support a change orientation.
The outcomes for such projects center on either developing responsible citizenship (a charity orientation) or participatory citizenship. Participatory citizenship focuses on active involvement in community and civic affairs and the individual’s ability to participate in government and community organizations and institutions. In this enactment of citizenship, a good citizen understands how political and social institutions work. Such citizens act responsibly by organizing or participating in collective actions to address community social, economic, and environmental needs (Westheimer & Kahne, 2004).

**Community-driven individual partner model (CDIP).** In the second variation of the community-driven model, the instructor works with an individual partner. The community-driven individual partner model (CDIP) (Figure 4) can support continuous projects and community-based action research (CBR). Continuous projects involve sustaining projects, so they continue beyond one academic term. As the projects continue, efficiencies are gained and the need for additional investment of resources decreases (Enos & Morton, 2003). The relationships are defined by interactions based on collaboration (Abravanel, 2003). In collaboration, the partner and the instructor work together to define and plan the project. Through ongoing communication...
and interaction, they share leadership and commitment for the project. They may also work together to develop resources or seek funding for the project. The community partner and instructor develop a shared understanding of each other’s missions, values, goals, and objectives. Expectations for service learning align, and the participants begin to work together to strategize, plan, and build capacity (Enos & Morton, 2003). The collaborative relationships, however, are still primarily transactional. In terms of both resources and politics, such relationships entail interactions that involve mid-level risks usually associated with participating in collective action or civic affairs. Similar to the CDMP model, the outcomes primarily focus on developing participatory citizenship.

The CDIP model can also support community-based research (CBR). In the CBR approach (Heffernan, 2001), students work closely with faculty to learn research methodology as they conduct research on a community problem, usually in association with a community partner. This version of the CDIP model supports transformative relationships. Transformative partnerships (Enos & Morton, 2003) center on ongoing placements or projects, but in these relationships, the focus is on action-based, mutual learning. Relationships are defined by interactions based on cultivation (Abravanel, 2003). In cultivation, the community partner may initiate the relationship with the faculty, but both share in teaching and leadership activities for the project. Both

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**Figure 4. Community-Driven Individual Partner Model**

![Diagram of Community-Driven Individual Partner Model]
the instructor and the community partner invest in sustaining the relationship and the project. They work out of a shared context and seek to critically examine and, thereby, actively transform themselves and the community (Enos & Morton, 2003).

When the CDIP model is transformative, the outcomes emphasize creating social change and developing justice-oriented citizenship. In a change orientation to service learning (Kahne & Westheimer, 2004), the moral domain focuses on developing complex, caring relationships in which new connections are forged through meaningful interaction. The goal is to understand the reality of others and to work together to create opportunities for change. In the political domain, the change orientation emphasizes critical reflection on systematic conditions and social policies, and it defines citizenship in terms of advocacy and working toward social change. In the intellectual domain, authentic, experience-based learning is also valued but is not sufficient. In addition, to be transformative, the service-learning experience must include critical inquiry combined with action. The outcome of such an approach is justice-oriented citizenship. Justice-oriented citizenship focuses on critically examining the root causes of social problems and enacting collective action to address those causes. In this enactment of citizenship, social responsibility depends upon one’s ability to critically question and examine the reasons for social injustice and to effect social change. A good citizen, in this perspective, questions social, economic, and political structures and challenges norms that perpetuate social inequities. Such citizens act responsibly by working together to address the cause of social problems and enact change so as to improve the situation of those impacted by systematic inequities (Kahne & Westheimer, 1996, 2004).

As a result, transformative CDIP partnerships are often defined as high risk because they focus on growth rather than benefits and involve advocating for systemic social change (Enos & Morton, 2003, p. 33). Transformational relationships are more reflective, dynamic, and change-oriented. Such relationships are less clearly defined at the beginning, seek to examine existing norms, and remain open to new or alternative developments. They also require higher levels of commitment from the participants.
Emergent Models in Technical and Professional Communication

Over the last 20 years, the technical and professional communication literature has focused primarily on implementation as it relates to integrating service learning into the technical and professional communication service course. In terms of integration, most descriptions emphasize preparing or training students in technical and professional writing skills prior to starting the service-learning project. While some variations occur, a core set of assignments for integrating service learning into the service course include a proposal or similar document to describe the project and ensure shared expectations between faculty, students, and the community partner; regular interaction between the community partner and the students; regular progress reports; project documents produced for the community partner by students; and oral presentations reflecting on the project (Bowdon & Scott, 2003; Dubinsky, 2002; Huckin, 1997; Matthew and Zimmerman, 1999; Sapp & Crabtree, 2002). The majority also describe using teams to both ensure quality results and build greater student interest and accountability (Bowdon & Scott, 2003; Dubinsky, 2002; Henson & Sutliff, 1998; Huckin, 1997; Matthew and Zimmerman, 1999; Sapp & Crabtree, 2002; Stone, 2000). Most also described working with multiple partners and having various, multiple one-time, short-term projects.

Other factors for implementing service learning are less clear. In Huckin’s model (1997), the instructor arranged the projects by contacting potential community partners and specifying the criteria for appropriate projects. Leigh Henson and Kristene Sutliff (1998), on the other hand, required that the students identify and establish relationships with community partners who confirmed the relationship by sending an email to the instructor. Thomas Huckin (1997), Elisa Stone (2000), and David Sapp and Robbin Crabtree (2002) emphasized making the service learning optional whereas Catherine Matthew and Beverly Zimmerman (1999) and James Dubinsky (2002) made service learning mandatory. While all relationships with community partners were transactional, the complexity of the relationships varied between cooperation, coordination, and sometimes collaboration. In general, the emergent model for service learning in technical and professional communication varies between a SDT (student-driven team) model and, more commonly, a CDMP (community-driven multiple partners) model. The use of the CDMP model has generally been successful. But
common issues continue to pose challenges that compromise sustainability. The question of quality remains an ongoing concern, but issues related to workload, building reciprocal relationships, and civic orientation (whether or not students perceive the service learning as charity) prove to be the more significant.

**Toward a Sustainable Model for the Service Course**

Over the last 12 years, we have worked to integrate service learning into our small technical communication program at a regional, comprehensive university. A critical factor in this integration was to enact and sustain service learning in our service course. Within this 12-year period, we iteratively worked to eliminate the factors that would compromise the success and sustainability of service learning in the service course. Our service course functions primarily as an introductory course for students from a range of disciplines, including engineering, English secondary education, visual communication design, and journalism. The faculty director for the technical communication program, who had experience with service learning, coordinated the integration, working with various instructors and graduate teaching assistants throughout the 12 years. Initially, the director and the instructors responsible for teaching the service course formed a curriculum committee to plan and implement the service learning. The committee created a list of potential community partners by reviewing listings from the United Way and the state government.

Through a review of the literature, criteria for appropriate projects were also identified. The committee agreed to a broad range of genres that went beyond typical technical genres identified by Huckin (1997, p.52) to include promotional materials, informational materials, and business and managerial documents identified by Melody Bowden and J. Blake Scott (2003). The curriculum committee then created a description for the project assignment, and the projects were allocated to two sections of the service course, leaving another two sections as non-service-learning options. (As the model for sustaining service learning evolved, all sections of the course would eventually be designated as service learning.) Following the emergent technical and professional communication model, the original organization for the service learning courses used a CDMP model. In the team-based projects, each team completed a different project with a different community partner.
To determine the effectiveness of the service-learning integration, we used course evaluations (required for all courses at the university), a community partner questionnaire (in which the community partner assessed the students’ abilities related to the project), and student-team evaluations completed by each individual student (in which students reported their contributions and that of their team members). In addition, we received regular feedback from instructors and reviewed assessments of course assignments.

The First Iteration: CDMP model
Using a grant obtained from the Teaching and Learning Center, we contacted 27 non-profits to determine interest. If the non-profit expressed an interest, the director of the technical communication program met with the non-profit to discuss the expectations for service learning and to identify potential projects. The director identified 15 potential partners and projects. The projects included a range of documents from newsletters, brochures, instructions, to revising a policy manual. Students would receive instruction in technical writing as they completed their projects. Student teams were required to attend an initial meeting with their community partner arranged by the instructor. After the initial meeting, teams were required to meet with their community partner every two weeks. Teams prepared agendas for their meeting, and the agendas had to be approved by the community partner. For the project, the students also wrote a proposal, completed progress reports, created the documents for the project, and delivered a final presentation which was attended by the community partner.

In terms of student engagement and community partner feedback, the implementation of this service-learning model was generally successful and yielded the benefits documented in the literature (Henson & Sutliff, 1998; Huckin, 1997; Matthews & Zimmerman, 1999; McEachern, 2001; Scott, 2006; Stone, 2000). Although successful, the CDMP model was not sustainable in the service course for a number of reasons. One of the key issues that affected sustainability was maintaining partnerships. To serve a broader university population, our service course is taught every term (four terms per year), with multiple sections (two to four per term). At the start of the service-learning integration, considerable time and effort was invested in recruiting partners and coordinating with them to set up and maintain the
projects. At the time, our university did not have a community engagement office, so the work of recruiting new partnerships remained primarily with faculty in the program. We initially received grant funding to assist with recruiting and developing the community partnerships. To fully support the service course, a minimum of 15 projects per term were required for a total of 45 projects a year. While some partnerships lasted for two or more quarters, many did not. Partners did not always have projects available each term, and some partnerships were dependent on specific individuals within an organization, and when those individuals changed roles or left the organization, the partnerships ended. The continuous need for new projects was challenging for faculty, and it placed additional demands on the community and risked creating the “hit it and quit it” exploitative relationships that Ellen Cushman (2002, p. 41) and Grabill (2004) caution against.

The workload for faculty both for recruiting and sustaining partnerships was in addition to managing the curriculum for multiple sections of the service course. Faculty were also responsible for meeting scholarship, service, and other teaching requirements related to tenure and promotion. In addition, managing the curriculum to ensure consistency across sections and academic terms required standardization, for which similar assignments work well but multiple and diverse service-learning projects do not. To implement and sustain service learning, additional support and training for instructors was also necessary as the service course is often taught by less experienced instructors, such as graduate teaching assistants or by adjunct instructors who often have heavy workloads, little job security, and less extensive professional development in the field of technical communication and service learning. The workload related to maintaining partnerships, ensuring a consistent curriculum, and supporting instructors was not tenable, but the benefits to the students and for many of the community partners were substantial enough to warrant continuing with integrating service learning. It was clear, however, that a different model was needed.

The Second Iteration: CDIP
Our initial experience with the CDMP model highlighted the need to explore ways of sustaining service learning in the service course. In the next iteration, we implemented a CDIP model in which all the students from one course section would complete the same project for one community partner. The project was a quarterly newsletter for a local non-profit whose mission was to revitalize the downtown. The project
was set up so all teams would produce a copy of the newsletter. In addition to core documents such as project proposals, progress reports, reflections, and oral presentations, the project required students to interview local business owners and opinion leaders, write all the content for the newsletter, and, as the project developed, design the newsletter. To avoid overburdening the community interviewees, the instructor created interview teams with student representatives from each project team. This proved surprisingly useful for students, for they often shared notes and photos, and if students missed an interview due to scheduling, they still had access to notes from other interview team members to write the content for their version of the newsletter. Initially, the intent was to have the community partner select the best newsletter. In the end, however, the community partner opted to select content from each of the newsletters, and representatives from each of the teams compiled the selected content together for the final product.

Overall, the project was very successful and was sustained for over four years (12 terms). The CDIP model offered a number of advantages. With only one partner per course section, we were able to build stronger relationships. The partner played an active role in assessing and reviewing the project process and its outcomes, and the partner contributed to revising project requirements to improve the learning experience. The workload for the faculty also became more manageable, and with clear organizational structures in place, the project could survive beyond the participation of specific individuals. During the course of the study, the project was taught by multiple instructors, and it survived several staff changes at the nonprofit organization. The project ended only when the non-profit, itself, was dissolved. The project taught us several important lessons. First, students did prefer collaboration to competition. Kahne and Westheimer (2003) point out that education in civic engagement needs to work on developing students’ levels of commitment, capacity, and connection. Commitment involves a student’s willingness to engage social issues. To build commitment, students need to develop their capacity for civic engagement by being engaged in real-world projects and learning skills and knowledge needed to participate in deliberation and action. Students also need to be part of a community of practice that supports and fosters the civic engagement and instills in them a sense of camaraderie, collaboration, and connection (Kahne & Westheimer, 2003, p. 63).
Having students work on the same project with the assumption that the “best” would be selected undermined students’ developing sense of camaraderie and connection. Second, increased student motivation is one of the key benefits in service learning. Student motivation arises out of students’ belief that the work they complete will be valued and used. The possibility that work would not be used had a negative impact on motivation. The model also had several other drawbacks. Because all student teams produced a single deliverable, the project could not be used across multiple sections of the service course, so each section needed a different project. The need for different projects compromised efforts to ensure consistency across multiple sections of the course.

**The Third Iteration: CDIP with Multiple Instantiations of One Project**

For the next iteration of service learning in the service course, we sought a project where we could work with one partner on a single project that would have multiple instantiations, so each team would produce a distinct deliverable that could be used by the partner. Having students complete their own iteration of the project would help to sustain motivation and provide an opportunity for students to build a sense of camaraderie, collaboration, and connection. In addition, it would facilitate the use of a single, continuous project across multiple sections. In the next iteration of the CDIP model, the service course partnered with the library to train students in using an online application for tracking and citing references. For the project, students worked in teams to determine what tasks student users would want to perform with the software. The teams learned the software, conducted task analysis, and developed a set of streamlined instructions for a quick reference guide. All the teams then developed a training tutorial and delivered the tutorial to students from another course. In addition, students completed all the core assignments related to technical communication projects (project proposal, progress report, reflections, and a final presentation).

The library as community partner participated in the planning of the project and served as a co-educator in the project. The librarians met with students at the beginning of each term to explain the project and introduce themselves. They answered students’ questions and provided assistance when needed. They attended trial sessions for the
training and provided students with detailed feedback, and they also attended the final presentations. They provided comments and reviews of the project and made additional recommendations, including requesting that students develop and distribute evaluation forms so that student teams could get feedback from the audience.

The project and partnership were extremely successful. The project ran for eight years and involved over 800 students who developed instructions and training for over 4000 students who participated in the training. Over the course of the eight years, several faculty and numerous teaching assistants as well as six librarians participated in teaching the project. In other words, once the overall structure of the project was in place, our variation of the CDIP model enabled other instructors and librarians to step in and out of the project as needed. We were able to fully integrate the project into the course curriculum because all students were completing the same assignment. Such integration helped control for quality. The structure of the project supported and enhanced students developing a sense of camaraderie, collaboration, and connection not only with students in the course but also with librarians and students from other courses who attended the training sessions. In addition, because each team was responsible for a training session, students could see from their audience that their work was valued, and they could see the outcome of the project almost immediately. As a result, student motivation remained high.

The project represented a mid-level risk for the library in terms of benefits and costs. After all, the librarians could have conducted the training sessions—it would, in fact, have needed less effort on their part to do so. But the library, generally, had a hard time getting students to attend training sessions, and they had an equally hard time getting instructors to give up valuable class time for training students to use one particular information technology. Instructors, as it turned out, were more willing to give up class time for student projects. The library benefited in a number of other ways, including increased awareness of online services, increased appreciation of the library, and positive collaborations with students (Meyer & Miller, 2008). In addition, both faculty and librarians developed scholarship related to the project, resulting in conference presentations and publications (Carnegie, 2010; Meyer & Miller, 2008).
The outcomes for the project went beyond engaging students in responsible citizenship where students simply contribute their time and skills. Instead, students engaged in participatory citizenship where they actively participated in the community organization. In the newsletter service-learning project, students’ impact on the community was indirect: they contributed work to a community partner whose work benefited the community. With the library project, students interacted and worked with the community partner, but they also interacted directly with the population served. Students received immediate feedback indicating that the tutorial participants had learned new information literacy skills from the training, would continue to use those skills, and had acquired an increased awareness and appreciation for the library. As students completed this project, they began to see themselves as participants in a larger community: they became central to building connections between the library, students, and faculty.

The project was eventually discontinued not because it was no longer sustainable but because it had, over time, become too standardized. One of the values of experiential learning is that by immersing students in systems of activities, instructors can create opportunities for students to engage in problem-solving. As Summer Smith Taylor and Art Young (2007) note, however, continual tweaking and revising of a project can “resolve too many of the problems” (p.16). This proved to be particularly true for the long-term, ongoing library project. As instructors and librarians became involved in the project, they would resolve problems to improve the implementation. For example, when the project first started, students were responsible for advertising and recruiting an audience to their workshops. An audience was required, but for some presentations, attendance was very low. One team of students solved the problem by contacting an instructor who then brought her composition class to the training. Because it was so effective, the approach was then incorporated into the project, so students no longer had to problem-solve ways to recruit and motivate other students to attend. Initially, students were also responsible for determining what aspects of the online application to teach. While students occasionally selected different tasks, a number of the tasks were the same across the multiple tutorials. Over time, however, instructors
identified common tasks and began to require those specific tasks and
steps be included, eliminating the need for students to decide how
their audience would use the application and what tasks would be
needed. Eventually, after eight years, there was little real problem-
solving left for students to do.

While the library project proved the sustainability of the CDIP
model for service learning, it brought to the fore questions about what
constitutes the community in service learning. Patricia Collins (2009)
notes that community is “an elastic political construct that holds a
variety of contradictory meanings and around which diverse social
practices occur” (p. 7). She critiques the notion of community invoked
in the discourse on civic engagement that treats community as a
universal category—“open to anyone, which will lead to similar
benefits to all who engage it, and that it is good for neighbors and the
nation” (p. 20). Cezar Ornatowski and Linn Bekins (2004) also note that
the concept of community often goes unquestioned in discussions of
service learning in technical communication. The notion of community
most often invoked is an idealistic romantic view which defines
community in terms of social coherence and shared political identity.
Ornatowski and Bekins (2004) argue, instead, for a rhetorical approach
to community in which community is an imagined construct. In this
definition, community is constituted by people-in-interaction (p. 259)
and formed through symbolic action. Such a view, opens up the
possibility of a multiplicity of communities. Within such a view, the
university would constitute a community and even multiple
communities. In this case, the library would be a viable community
partner. Nadinne Cruz and Dwight Giles (2000) acknowledged that the
“conundrum” of defining community has posed a major obstacle to
understanding the implications and impacts of service learning on the
community (p. 29). However, the solution proposed by Cruz and Giles,
and adopted by many who research and practice service learning, is to
define the university-community partnership as the unit of analysis. In
other words, one of the goals of service learning is to connect the
university to a community outside itself. In this case, the university
library would not meet this criteria for a community partner.

The Fourth Iteration: CDIP

In the next iteration of our service learning model, we sought to
connect students with a community outside of the university, so we
adopted a project focused on writing instructions for an online wiki.
The partner is an online, for-profit company (iFixit) that sells tools and
parts for repairing electronics. They also develop and sell software for creating, editing, and distributing work instructions. As part of its corporate social responsibility mission, the company strongly advocates for reducing e-waste. It does so by educating people about e-waste and championing repair as one means for extending the life of electronics. To accomplish this mission, the company maintains a wiki-based site, licensed under the Creative Commons, which provides free step-by-step guides to show people how to repair electronics and other technology. As part of its social responsibility mission, the company has developed an educational project curriculum that it uses to partner with technical communication programs across the country.

In the project, student teams each research an electronic device, document common problems, and then create troubleshooting and replacement guides. Student teams all work on the same project, but produce different deliverables in the form of instructions for specific technology. Thus, while one team writes replacement guides for a digital camera, another team writes replacement guides for a laptop computer. As part of the project, students acquire basic professional writing skills, learn a variety of genres, manage projects, and work in teams. Students, for example, write correspondence (emails) and proposals, develop project plans, manage projects, conduct usability tests, and report progress and research results. The project has been fully integrated into the service course curriculum with a just-in-time model for instruction that teaches the technical writing skills as they are needed for the project.

The project, as set up by the company, uses a CDIP model with one project that has multiple instantiations. With additional supporting course materials (syllabus, lectures, grading rubrics, and assignment descriptions) hosted in our university’s learning management system, the project has been easily adopted by multiple instructors, including graduate teaching assistants and adjunct instructors. As a community partner, the company plays a strong co-educator role by developing comprehensive web-based materials to guide and support students and instructors throughout the project, and it provides training and support materials for faculty. The project represents a mid-level risk for the company. The company has invested in developing supporting materials and providing staff to manage the project and interact with...
students, and it provides tools as well as the technology for repair. It has also achieved high levels of efficiencies, enabling it to work with a large number of technical writing programs without detrimentally increasing its costs.

The project appeals to students from a broad range of disciplines as it involves research, some technical skills, technical writing, photography, and basic design skills. While students retain the copyright to their work, the guides they produce are published on the wiki and can be accessed by anyone with a computer and Internet access. Student motivation increases as students participate in a professional community by communicating with and receiving feedback from staff for all major milestones in the project. As they contribute to the wiki, students also become part of a larger DIY (do-it-yourself) community. After the guides are complete and published, the students receive notices telling them how many people have accessed the guides. In this project, students experience many of the benefits of experiential learning: increased motivation, improved problem solving, greater awareness of how genres function within systems of activity, greater awareness of audience, and enhanced technical writing skills. The project enables students to feel connected and increases students’ capacity for collaboration.

The community served (those who wish to fix their technology) and iFixit (the company) are outside of the university and represent a larger, global community. The outcome emphasizes participatory citizenship: students participate in collective action aiming to reduce e-waste by creating the online replacement guides. To achieve this result, students need to participate in regular reflections that connect issues of e-waste with repair and the objectives of the course. Reflection is critical in order to avoid enacting a hyper-pragmatist ideology that can undermine the development of civic engagement by over emphasizing professional development (Scott, 2004, 2006). Even after they complete the course, students continue to receive notifications indicating how many times people have accessed their instructions—a reminder that their work continues to help others to extend the life of products and reduce e-waste.
The project, so far, has been successful and has been ongoing for three years now. Three faculty, six graduate teaching assistants, and over 400 students have participated in the project at our university. This particular project has also been adopted by other programs across the US for other technical communication service courses. Obviously, the company’s investment contributes to the project’s sustainability in the service course, but I argue that the CDIP model upon which the project is based is the key to its success in the service course.

Conclusion
For us, the CDIP has proven to be the most sustainable model for implementing service learning in the service course. A CDIP model with a focus on a single partner and multiple instantiations of a single project addresses several significant factors that compromise sustainability. The CDIP model addresses the issue of workload by reducing the work required to locate suitable partners and projects. The CDIP model also reduces the workload related to training and support, making it easier to prepare less experienced instructors to teach and participate in service-learning pedagogy. The model also assists with the workload associated with managing the curriculum, as it helps us to ensure consistency across multiple sections of the course. The reduction in faculty workload should not be underestimated. Faculty attrition from service learning constitutes one of the primary challenges to its sustainability (Vogel, Seifer, & Gelmon, 2010). After all, service learning adds substantially to workload, and for many faculty who teach and manage service courses, the additional demands of service learning can be overwhelming.

But workload is also associated with how academic cultures value the work faculty do. In their research on factors that influence long-term sustainability of service learning, Amanda Vogel, Sarena Seifer, and Sherril Gelmon (2010) noted that to ensure sustainability, university administrations need to create an environment that enables people to be professionally successful while doing work related to service learning (p. 63). Faculty support and participation is critical but requires incentives, recognition, and ongoing professional development to be sustained. We have found that the efficiencies of the CDIP model enabled ongoing service learning projects even with minimal institutional support. Although a lack of support and resources is far from ideal, the efficiencies of the CDIP model clearly contribute to its sustainability.
Integration is another factor in sustaining service learning in the service course. Service learning in technical communication emphasizes a problem-based approach. In this approach, service learning is integrated into the course curriculum. When service learning is fully integrated into the course, the course is structured around the project with course assignments supporting the project. Vogel, Seifer, and Gelmon (2010) identified integration as a contributing factor to the sustainability of service learning. Their study shows that institutions with moderate to high levels of sustainability integrate service learning into the curriculum (p. 64). Because the CDIP model uses a single project with multiple instantiations, it supports a high level of integration.

Sustainability of service learning also depends on strong relationships that do not exploit or overburden the participants. A collaborative relationship that enables the community partner to be a co-educator is another factor that contributes to sustainability. Community partners value participating in student learning as co-educators and want to interact directly with faculty (Kimme Hea & Wendler Shah, 2016; Sandy & Holland, 2006). The CDIP model with its focus on a single community partner allows for the development of more complex, reciprocal, long-term relationships. We have found that the model facilitates equal participation of community partners in the designing and managing of the project and the learning experience. In this model, the community partner clearly functions as an expert and shares commitment to and leadership in the service learning.

Civic orientation is also critical to sustaining service learning. Service learning in the service course is sustainable not only when it motivates students, engages them in professional situations and systems of activity, enables them to learn skills necessary for effective technical communication, and supports collaboration and connection, but also when it develops their capacity for civic engagement. In technical communication, the service learning literature highlights a growing discontent with a “charity orientation” in service learning. James Dubinsky (2002), for example, defined effective relationships as those focused on change rather than charity. Others also cautioned against building relationships characterized as charity (Matthews & Zimmerman, 1999; Sapp & Crabtree, 2002). According to Dubinsky,
if students perceive service learning as charity their response will be self-oriented. They will focus on career preparation, define relationships as temporary, develop limited commitment, and characterize what they do as giving to the less fortunate. Accordingly, if students perceive service learning as change rather than charity, their response will be other-oriented. They will focus on their contribution to the community, building stronger relationships, and characterizing what they do as helping to solve a community problem (Dubinsky, 2002, p. 65).

While a “change orientation” is seen as the ideal, I argue that it is best accomplished through community-based research (CBR). In her work on sustainable service learning programs, for example, Cushman (2002) argued that service learning is more sustainable if faculty see the community as a site of collaborative inquiry where faculty’s research, teaching, and service contribute to community needs. A “change orientation” with its focus on research and justice-oriented citizenship would not be feasible in our service course at a public, comprehensive university. Instead, we see students’ civic engagement in terms of a continuum made up of responsible, participatory, and justice-oriented citizenship. According to Joel Westheimer and Joseph Kahne (2004), the differences in the kinds of civic orientation can be exemplified in the actions that such citizens would perform: a responsible citizen “contributes to the food drive,” the participatory citizen “helps to organize the food drive,” whereas the justice-oriented citizen “explores why people are hungry and acts to solve root causes” (Westheimer & Kahne, 2004, p. 242). Each form of citizenship carries with it underlining assumptions about how to solve social problems. To focus solely on developing a charity orientation is problematic as such a focus can, as Westheimer and Kahne (2004) note, obscure the need for collective action to “address the social, economic, and political structures that generate problems” (p. 243). But to focus solely on justice-oriented citizenship is also problematic as it fails to recognize citizenship as a dynamic interaction between self and community that can develop over time and according to contexts. Participatory citizenship, an outcome of the CDIP model described here, brings together elements of both the charity and the change orientation. In terms of developing students’ sense of civic engagement, participatory citizenship is a strong outcome. And it increases the value of the CDIP model in the service course and contributes to the model’s sustainability.
I recognize that the CDIP model, like any other model, should be explicitly examined for its suitability to particular applications and contexts. The CDIP model may not be sustainable for online service courses nor for more advanced, non-service technical communication courses. Instead, other models may prove to be more sustainable. I argue that as we implement service learning pedagogy in our technical communication courses, we need to be cognizant of the models we use and how those models can influence the sustainability of our pedagogy. Sustainability is important to service learning because “it ensures that front-loaded investments—including developing community-academic partnerships, incorporating service-learning into the curriculum, and training faculty and staff in skills for service-learning—are not unnecessarily duplicated” (Vogel, Seifer, & Gelmon, 2010, p. 59). Overall, the CDIP model, in our case, has proven to be effective for sustaining service learning in the service course in a face-to-face classroom. It enables instructors to reap the benefits of service learning, reduce the workload associated with service learning, control for quality, build effective relationships with community partners, and realize positive outcomes in terms of student learning and citizenship.
References


Sustaining Service Learning in the Service Course


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Contextualizing the Technical Communication Service Course: A Research Approach to Reviewing, Re-thinking, and Revising the Service Course

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Abstract. The technical communication service course exists with a range of institutional contexts involving different departments, programs, and faculty. Technical communication program administrators can benefit from mechanisms that help them identify the contexts and stakeholders invested in the service course. This entry presents a research-based approach, contextualized course design, for engaging effectively in such activities.

Keywords: curriculum design, institutional contexts, model for curriculum re-design, service course, stakeholder interest

The service course is one of the most complex classes in the technical communication curriculum. Why? Because while offered by one department, it is often central to programs in others. This means the course must often address the expectations of stakeholders representing different contexts within the same institution. For individuals who administer technical communication programs, the challenge becomes determining how these contexts affect the class. A systematic approach to researching these contexts can help address this situation. This entry overviews one such approach—what I call contextualized course design.
Contextualized course design allows program administrators to collect the information on the various interconnected contexts in which the service course exists at an institution. It does so via a research-based framework for identifying the expectations and perceptions of key stakeholder groups in such environments. By comparing the resulting data, program administrators can make effective decisions on developing or revising the technical communication service courses for the contexts of their own institutions. In presenting this approach, this article

- first reviews how stakeholder perceptions affect perspectives of the technical communication service course,
- next summarizes prior research that noted the importance of understanding context when considering the service course, and
- then overviews the contextualized course design process and discusses how to apply it to researching different contexts.

This structure helps readers understand what contextualized course design entails so they can apply it to the service course at their institutions.

**Contextualizing the Service Course**

Historically, the technical communication service course has occupied an odd curricular position, because defining the service course often becomes a matter of the individual defining the concept. Who does this defining, however, can vary from institution to institution (Carter, Anson, & Miller, 2003; Coppola, 1999). For example, the service course is often a core (i.e., required) course in the department that staffs it (e.g., English) and other departments at that same institution (e.g., business) (House, Watt, & Williams, 2007). In other instances, it might be an elective in the “home” department offering it (e.g., technical communication) but be a requirement for majors in other programs (e.g., engineering) (Barker & Matveeva, 2006; House, Watt, & Williams, 2007).

One of the most recent definitions of the technical communication service course comes from Lisa Meloncon and Peter England (2011), who present it as “[A]n introductory course for non-majors delivered primarily as a service to other departments and programs on campus” (p. 398). The key variables here are “for non-majors,” “to other departments,” and “as a service.” These ideas open the stakeholders with an interest in the class to a wide group depending on who the course “serves.” This positioning can lead
certain stakeholders to see the course as one that provides students with certain skills and abilities that supplement what they learn in their “major” or “home” departments (Adkins & Frick, 2009; Coppola, 1999; Reamer, 2012; Thomas, 2005). This status has also resulted in the service course occupying the role of “required” by certain programs without being housed in the department offering these programs (House, Watt, & Williams, 2007; Rehling & Lindeman, 2010; Russell, 2007; Thomas, 2005; Wolfe, 2009). Such factors can lead to divergent perspectives among stakeholders in the departments “serviced” by the course (Thomas, 2007; Wolfe, 2009). Further complicating this situation is the fact that the service course can exist across different institutions, but serve different stakeholders at each. These aspects can cause confusion associated with who is defining the course and how.

Think of it this way: Many institutions offer a technical communication service course (Henschel & Meloncon, 2014; Meloncon, 2012; Meloncon & Henschel 2013). Many engineering schools, for example, have a technical communication service course and often require it for undergraduate engineering majors. As such, the course seems ubiquitous, for it appears to be everywhere. This perceived ubiquity could lead to the idea the technical communication service course is highly uniform in design. This situation could lead to the expectations that what the course covers, what its learning objectives are, and who teaches it are uniform across institutions.

In truth, while the service course exists in so many programs, it is not uniform in the stakeholders it serves. Rather, it is often contextualized per institution (see, for example, Adkins & Frick, 2009; Coppola, 1999; Rehling & Lindeman, 2010; Russell, 2007). In some cases, the programs it serves (e.g., engineering or business) influence the objectives that guide it; in others, the background(s) of the instructors (e.g., academic training or prior work experience) shape the content of the course. Thus, who defines the course can vary based on the stakeholders at the institution where it exists (Russell, 2007; Thomas, 2007; Wolfe, 2009). This contextualization makes the service course both special and important to an institution. It also creates multiple layers of interest in its existence and design. In fact, one could argue the service course is relatively unique as it must often address the needs and expectations of specific institutional contexts.
The resulting situation is complex: creating and managing a course that needs to be uniform across different, concurrent sections while meeting the needs of different departmental and program constituencies and also being taught by individuals with different backgrounds in the topic area. Addressing such interconnected factors effectively is challenging. To do so, one must

- identify the stakeholder groups connected to the service course at a given institution,
- identify the needs and expectations of these groups,
- compare these needs and expectations to identify overlap and divergence across stakeholder contexts, and
- develop or revise the service course to better address such contextual factors at its home institution.

The research needed to address these objectives is the focus of contextualized course design. The following sections of this entry review the steps involved in this process to help readers understand how it can address such factors at their institutions.

**The Stakeholder Contexts**

The first step in contextualized course design is identifying the contexts in which the technical communication service course exists at an institution. It involves understanding the stakeholder groups in these contexts and the expectations they associate with the course. While these stakeholders might vary from institution to institution, they generally encompass four major groups: institutional, programmatic, departmental, and instructional.

**Institutional Stakeholder Context**

All of the stakeholder groups connected to the technical communication service course exist within an institution, and each institution has its own goals and objectives for the programs it houses. This overarching context creates certain expectations that can affect the service course. The institution, for example, might be interested in how a widely-required service course (or courses) could advance institutional objectives and initiatives (Carter, Anson, & Miller, 2003; Coppola, 1999; Rehling & Lindeman, 2010). Can such courses, for example, foster connections to the local or regional community and help fulfill an institution’s regional mission? Can it be a vehicle for collecting accreditation-related data? These factors can create
expectations stakeholders (e.g., administrators) at the institutional level associate with what the service course is and what it can (or should) do.

Programmatic Stakeholder Context
The departments served by the service course (i.e., those that include it in their curriculum) also have an interest in its content (Meloncon & England, 2011; Reamer, 2012; Thomas, 2007; Wolfe, 2009). For these stakeholders, this interest often involves how the course connects to the goals and objectives of the programs it serves. In engineering programs, for example, such a class often addresses accreditation factors—like ABET outcome 3g (“ability to communicate effectively”) (Meloncon & England, 2011; Thomas, 2007; Wolfe, 2009). Similarly, business programs could include it in curriculum requirements that meet different accreditation criteria. These could include the Association to Advance Collegiate Schools of Business (AACSB) area of “Written and oral communication (able to communicate effectively orally and in writing)” under the “General Skills” area of Standard 9: Curriculum (AACSB International, 2016). Meeting these ABET and AACSB requirements, however, could create different expectations of the course depending upon the requirements of programs it “serves.”

Other stakeholders might view the service course as a mechanism for providing students with communication skills not connected to accreditation (Adkins & Frick, 2009; Slattery & Cleary, 2014). Nursing, for example, increasingly recognizes the need for effective written and other communication skills related to conveying technical information (Kraut, 2017). Yet such skills are often not part of the guidelines used to accredit nursing programs. As such, nursing programs could require a technical communication service course to provide their students with these skills. The same could be the case for programs in the physical sciences, computer science, and other technology-focused fields. In this way, the technical communication service course becomes a focal point through which different programs or departments expect instructors to achieve certain—sometimes different—objectives.

Departmental Stakeholder Context
The department that offers the service course represents another stakeholder group and context invested in the class. At this level, a key consideration is how the course connects to the department’s program and curriculum. For example, is the class required of all majors or
minors? Alternatively, is it viewed as a mechanism for recruiting students to a department’s major or minor programs (House, Watt, & Williams, 2007; Kramer & Bernhardt, 1999; Meloncon & England, 2011)? If so, one needs to determine what topics the course should cover so students can successfully meet the requirements of the “home” program(s).

Folded into this departmental context is staffing. In some cases, staffing the course might involve tenured or tenure-track faculty regularly teaching one or more section of the course. In others, it could involve a cadre of non-tenure-track faculty who teach multiple sections of the class each term (MacNealy & Heaton, 1999; Meloncon & England, 2011; Wolfe, 2009). These dynamics can affect the home department in terms of several factors:

- **Offerings:** If tenure-line faculty must teach such courses during a term, those faculty might be unable to teach other specialized or advanced classes for the department’s program(s);
- **Space:** If physical teaching space is limited, providing locations for offering the required number of service course could affect the ability to offer other on-site classes (Leslie & Northcut, 2013);
- **Hiring:** To maintain the faculty needed to offer service classes, departments might hire persons who can teach the service class in addition to or in lieu of other classes in a curriculum—a factor that could cause some consternation among faculty who might be vying for different faculty lines. This could limit who can be considered for or who might apply for a position (Rentz, Debs, & Meloncon, 2010).

In these ways, the relationship to the home department influences how members of that department view the service course.

**Instructional / Classroom Stakeholder Context**

Further complicating this situation is the stakeholder group of instructors—or the individuals who teach the class. Factors such as instructor backgrounds and comfort with (or interest in) the course can affect what it covers and the nature of the instruction provided (MacNealy & Heaton, 1999; Meloncon, 2009; Meloncon & England, 2011; Rentz, Debs, & Meloncon, 2010; Wolfe, 2009). This situation can cause variations across sections of the course. Each stakeholder context affects perspectives on what the service class is. They also affect what stakeholders think the class needs to cover and how. Creating, reviewing,
revising the technical communication service course therefore cannot be based on “researching what they do at other institutions and then re-creating that approach here.” Rather, such activities require research focused on understanding the local contexts in which the class exists. Contextualized course design offers a method for systematically doing so in ways that examine the perspectives and expectations of these different stakeholder contexts.

**Reflecting on Research**
The importance of studying stakeholder expectations of the technical communication service course is not new. In 1999, Nancy Coppola articulated the need to understand such contextual factors when she noted, “Our instructional theory [for the technical communication service learning class] should follow a model of effective technical communication embedded in social structures, and our teaching practices should provide for socially constructed learning environments” (p. 262). In so doing, Coppola recognized the need to investigate the complex dynamics of context (“social structures”) to assess how the class is organized, staffed, and delivered. Her suggestions for pursuing this approach, however, focus on relationships in the class itself (e.g., student-teacher, student-student) and not the institutional, programmatic, or departmental contexts affecting it. Since then, others have discussed the need for more targeted inquiry into these contexts.

**Examining Contextual Dynamics**
At a more micro-level, Lisa Meloncon and Peter England (2011) note the need to provide effective training and development to contingent faculty who often teach the course. In so doing, they move toward examining the context of instructors and, to an extent, department. Joanna Wolfe (2009) similarly points out the need to investigate this instructional (faculty) context to understand the constraints affecting how individuals teach the course. She also highlights the need to research what engineering programs expect from the class. Wolfe further explains how the training of the faculty teaching the course (instructor and departmental contexts) requires investigation along with expectations of faculty in affiliated program (programmatic context). In so doing, Wolfe advocates a mixed-methods approach that uses bibliographic research (i.e., prior, published scholarship)
in combination with collecting data from individuals (e.g., using targeted questions to determine what engineering faculty expect). Works such as that of Wolfe and of Meloncon and England help draw attention to the connections between context and understanding the service course. Fortunately, neither Wolfe’s nor Meloncon and England’s work maps out a specific or detailed approach for how to investigate these complex situations.

Effectively researching these contexts requires a standardized process of collecting data from different stakeholder contexts. Richard House, Anneliese Watt, and Julia M. Williams (2007) recognize this need and advocate for a systematic approach to investigating the constraints and expectations of the environments in which the service course exists. To do so, they propose a two-step process to examine faculty, departmental, and programmatic contexts. The first part involves surveying the faculty teaching the class across multiple institutions. The objective of this activity is to determine how instructor perceptions and experiences might shape the class and what it covers (instructor and, to a lesser extent, departmental contexts). House, Watt, and Williams also overview an approach for collecting data from engineering faculty to determine what they expect the course to cover (programmatic context). The goal of this work, however, is to understand such perspectives across various institutions rather than within the context of a specific one. As such, the approach they overview is not designed to understand and configure the service course within the context connected to it at the institution where it is offered. The need to understand such situations, however, has been raised before.

At a more macro-level, Michael Carter, Chris M. Anson, and Carolyn Miller (2003) discuss the importance of understanding greater institutional contexts when thinking about the service course. They also note the need to understand the role the service course plays in its home department. In so doing, they examine how writing across the curriculum/communication across the curriculum (WAC/CAC) assessment models might help program administrators understand such complex environments. Carter, Anson, and Miller also emphasize the need to collect information from different programmatic stakeholders when
assessing technical communication service courses (and the role related accrediting agencies might play in this process). While their approach does identify key contextual areas to investigate, the authors do not provide a specific methodology for researching them. Nor do they propose a systematic approach for identifying, collecting, and analyzing the data needed to understand these contexts and the interactions among them.

Moving Research Forward
This prior work provides program administrators with an initial idea of what to research in terms of stakeholders, context, and expectations. Such scholarship, however, does not offer a mechanism to engage in such research in a structured, focused, manageable, and systematic way within a single institution. This limitation leads to problems of what data program administrators need to collect, from whom, from what source, and how. Additionally, prior scholarship leaves program administrators with a general idea of what to investigate, but no real guidance on what research questions should focus such activities. As such, the program administrators are left with a general idea of what to research. Unfortunately, they still lack any real framework to guide that research. Given the complexity of the research needed to understand the service course, such a framework is essential. Contextualized course design addresses this factor by providing the overall framework for researching such complex and interlocking contexts. To address such factors, contextualized course design focuses on contextualizing the course into the stakeholders at one's institution rather than comparing practices across institutions (see Meloncon & England, 2009; House, Watt, & Williams, 2007). It does so through focusing on specific questions, sources of data (for analysis), and methods for collecting this information. The idea is to examine the structures noted by Coppola (1999), by Carter, Anson, and Miller (1999), and by others in a focused way to collect standard data from identified sources. Program administrators can use this data to determine how the technical communication service course fits into these overlapping contexts at their institutions.
Contextualizing the Technical Communication Service Course

Researching Context and Addressing Stakeholder Needs
Addressing the complexities of the technical communication service course requires understanding the contexts in which the course exists (and is expected to serve), and the goals, objectives, and perceptions of the stakeholders involved in these contexts. Doing so involves undertaking a guided approach to review the contexts in which the course exists at an institution.

To facilitate this process, contextualized course design uses a tiered approach to examine each context as its own topic in order to understand it as a separate entity. Individuals can then identify areas of overlap or conflict across these contexts and determine how to address them when developing or revising the service course. To do so, contextualized course design first examines the largest—or broadest, overarching—stakeholder settings (Context 1: Institutional) that represents the highest level of investigation. From there, one uses contextualized course design to progressively focus on more restricted stakeholder contexts—or lower-level tiers—in the following way:

- Context 1: Institutional (Broadest and most encompassing context)
- Context 2: Programmatic
- Context 3: Departmental
- Context 4: Instructor/Classroom (Smallest and most focused context)

This progressive approach allows researchers to understand how higher-level, or larger tiers, contexts might affect what occurs at lower-level, or more confined tiers, contexts at an institution. To examine such factors, contextualized course design uses context-related research objectives, questions, and methods to identify the expectations and perceptions of stakeholders in each context. The remainder of this section will take readers through this process by reviewing the research approach for examining each context from broadest (institutional) to most focused (instructor/classroom).

Stakeholder Context 1: The Institutional Context
An institution’s policies affect the entities within it (Carter, Anson, & Miller, 2003; Rehling & Lindeman, 2010). Such policies generally connect to the institution's mission (i.e., what it does) and vision (i.e., the goals it hopes to achieve). These factors form the foundation the departments and programs in that institution often use them to guide the development and revision of curricula and courses.
(An example of this might be requiring course proposals to note how a new class connects to the institution’s mission or vision.) In these ways, the institution’s mission and vision statement become central sources used to assess practices, guide activities, resolve disputes, and plan undertakings. These guiding statements represent initial materials to consider when developing or revising the service course (Carter, Anson, & Miller, 2003; Coppola, 1999). As such, researching this institutional context represents the first step in the overall contextualized course design process.

Objectives and questions. From a research perspective, the objective is to determine how the technical communication service course connects to institutional context in which it exists. It also involves identifying the expectations stakeholders in that context have for such a course. The research question to address often becomes:

\[ \text{RQ1: How does the institution seek to position or present itself within the context of greater society?} \]

In terms of the service course, the related goal generally involves answering the question

\[ \text{RQ2: How does (or can) the technical communication service course contribute to that positioning by addressing or reflecting the mission and/or vision of the institution?} \]

These questions can help individuals understand how to contextualize the service course within the institution’s current, short-term, and long-term goals.

Materials and methods. To determine how an institution tries to position itself, one must identify the goals the institution has for the constituencies it serves, including

- the society in which the institution is located (e.g., the local, state, regional, global environment in which it exists and which it sees itself as serving), and
- the students the institution educates—or what it prepares the students to do in order to be a part of or contribute to the society in which the institution exists.

The objective is to determine how the university seeks to present itself in relation to these factors.

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1 The fact such courses are connected to so many different programs at an institution could also make them a valuable source of assessment and accreditation data to determine how well an institution is achieving the goal of fulfilling its mission as stated (see, for example, Carter, Anson, & Miller, 2003).
These ideas often appear in the institution’s mission statement, which often becomes an ideological foundation (or charge) for the policies that govern an institution’s practices. Institutions also need plans for how they will change over time in response to shifts in society. To do so, they often develop vision statements that establish general goals for the future. Attempts to benchmark particular goals according to a specific timeframe (e.g., by date X, the institution will have done Y) are often found in year-based plans (e.g., institutional plan for 2020, for 2030, etc.).

These documents—mission statements, vision statements, and year-based plans—become the materials to review to understand stakeholder perceptions and expectations at the institutional context. As these materials are all texts, the data collection method that might work best would be a textual analysis in which the researcher (i.e., program administrator) would look for certain factors.

**Mission Statement.** An institution’s mission statement provides insights into how the institution perceives its role in the location it seeks to serve. To understand such factors, researchers need to review the institution’s mission statement to determine

- how the institution identifies the society in which it exists and to which it contributes (e.g., does the mission statement identify the institution as serving a particular local area, state, region, an international constituency, or a mix of these spheres?),
- what the institution wishes to do for or in relation to that society (e.g., does it seek to foster economic innovation and growth, to enhance social relationships, or to provide citizens or residents with access to certain educational services?),
- who the institution sees as its primary audience (e.g., does it focus on residents of the local area, the state, the region, etc.), and
- what the institution sees as its role in relation to students: that is, what the institution sees itself as preparing the students to do (e.g., does the institution prepare students to be active and engaged participants to local and global society, prepare them for success in the local economy, or prepare them for the modern knowledge workforce?).

Researchers could use the resulting information to understand

- who their student base might be,
- what, in general, they need to do so classes address the institution’s mission of how to prepare students,
how the course might draw from local, state, regional, communities (e.g., examples, readings, service-learning partnerships, etc.) to include in the context of the service course (see, for example, Bay et al., 2010).

A review of the mission statement provides an overview of what the institution sees itself as doing in relation to the society in which it exists and the students it educates. The service course, in turn, could be (re)envisioned in terms of how it might include materials and approaches that can help reflect the mission of the institutional context in which it exists.

**Vision statement.** The vision statement presents an idea of how the institution plans evolve to meet the needs of the society in which it serves and the students it educates. To that end, researchers need to review the institution’s vision statement to determine

- what the institution sees as its primary objective(s) for the future,
- how the institution plans to adapt to address such objectives in relation to the society it serves, and
- how the institution plans to adapt to prepare students as society changes.

The information resulting from this review can help determine what materials, topics, foci, and perhaps partners (e.g., for service learning projects) to include in the context of the technical communication service class over time. This information can also help program administrators plan for how the course might need to change to reflect the objectives of the institution and expectations of institutional stakeholders over time.

**Year-based plans.** Year-based plans note specific objectives institutions seek to achieve by a particular date (e.g., “By 2030, the institution will have achieved the following objectives…”). These plans can provide items to consider in revising or developing the service course. If, for example, one institutional goal is to increase student publications 10% by 2030, individuals could consider how the service course might include a component on getting published or an assignment in which students develop a paper for publication. A course could even be modified to adopt an overall focus that has students consider how assignments in the class might be published to share ideas with
certain audiences. The objective is to review an institution’s year-based plans to determine
- what objectives they wish to accomplish by a given year, and
- how the ability to achieve those objectives will be measured or assessed.

Program administrators can use this information to determine how they might configure different aspects of the service course to address these objectives.

The goal of data collection for this institutional context is to determine how well the technical communication service course addresses the institution’s mission and vision. Program administrators could use this information to revise service courses in three distinct actions:
- Remove elements not clearly connected to objectives outlined in these documents.
- Add items, materials, or topics to better address the institution’s mission, its vision, or a particular year-based plan.
- Assess and address requests to revise the course based upon factors of mission and vision. If, for example, administrators in other departments want a particular topic included in the service course, they could be required to explain how that requested change connects to or supports the institution’s mission statement, vision statement, or a given year-based plan.

Once program administrators have identified the dynamics of this institutional context, they must review the more complex programmatic context in which the course exists. This is the second step or phase in the overall contextualized course design process.

**Stakeholder Context 2: The Programmatic Context**

For the technical communication service course, perhaps the most difficult area to navigate is the programmatic context. This difficulty results from needing to determine all of the programs that include the service course as a component in their curricula. Such interconnectedness means changes in the course could have important implications for these programs.²

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² These implications could include everything from preparing students for other classes in that curriculum to meeting certain accreditation requirements for programs.
**Objectives and Questions.** At the programmatic context, the research objective is to determine how individuals associated with interconnected programs (i.e., programs other than the one in which the course is housed) conceptualize what the service course covers and does (House, Watt, & Williams, 2007; Reamer, 2012; Thomas, 2007; Wolfe, 2009).³ To do so, program administrators should answer the following research questions:

- **RQ1:** *What role does the service course play in other programs (interconnected programs) at the institution? (i.e., What do these program need or expect this course to do or cover?)*

- **RQ2:** *How do individuals in those interconnected programs conceive of the course in terms of what it covers and what its learning objective are? (i.e., What do individuals involved in these interconnected programs think the course does or covers?)*

The resulting answers can be telling. While a course might be a requirement for an interconnected program, individuals associated with that program might be unsure of what the service course is. Additionally, they might not understand what is (and is not) covered in the class and why (e.g., “Is the use of social media for professional communication covered in the class?”).

In addressing these questions, technical communication program administrators need to determine

- if the service course is a required class or an elective in another program, and
- if the service course is required for a major, a minor, a certificate, or a combination of these

These factors can help determine how invested interconnected programs are and what they expect the course to offer their students.⁴ Addressing these questions involves collecting data from two different sources: Texts and persons.

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³ This assumes the program administrator knows what these interconnected programs are. If not, a key initial step would be to identify the programs that require the course or list it as an elective for majors or minors.

⁴ The idea here is the more central the role of the class in a program’s curriculum, the more likely members of that program are to be interested in it and what it covers.
**Materials and methods.** To identify the role the service course plays in other programs, individuals need to review the documentation describing both these interconnected programs and their curricula. The idea is to determine how the technical communication service course is characterized in those materials. For example, is the technical communication service course

- presented as a prerequisite for other classes in the curriculum,
- described in the curricula materials of that other program (e.g., “This course is designed to…”), and/or
- presented as an elective designed to meet a certain core requirement in another major or minor (e.g., found in a list akin to “To fulfil the ‘humanities’ section of the program, you can take …?”)?

This *programmatic positioning* affects what the stakeholders in those interconnected programs expect the course to do to meet the needs of their programs.

The perceptions interconnected programs have of the service course might vary widely. So, to understand the stakeholder dynamics in this context, researchers should review

- the institution’s catalog description for the interconnected programs to see how the technical communication service course is addressed in such materials,
- the websites of interconnected programs to see how the technical communication service course is characterized in relation to these programs and their objectives, and
- any materials (e.g., flyers, handouts, checklists, etc.) these interconnected programs provide to students in their major or minor or other area in which the technical communication service course plays a role (e.g., certificate, concentration, etc.)

The objective is to do a textual analysis of these materials to understand how the technical communication service course is positioned within the curriculum of other programs (e.g., requirement or objective).

The key to this process is to identify how these curricula are connected to the service course (e.g., is it a prerequisite for other courses?) and answer logistical questions such as the following:

- When students in that program are expected to take the service course (e.g., in their sophomore, junior, or senior year),
- What the service course is characterized as covering, and
- What objectives the service course is presented as focusing on.
The idea is to identify the expectations stakeholders in interconnected programs have for what the service course covers and the learning objectives of the class. The goal is to determine if such expectations are accurate. If not, then one needs to consider how to inform the stakeholders in an interconnected program that their depiction of the service course is inaccurate and needs revision.

These texts represent one kind of data source to consider in relation to understanding this programmatic context. An equally important source of information is the individuals administering or advising in these interconnected programs. Specifically, researchers need to identify:

- **Advisors:** Persons who advise students in these interconnected programs
- **Administrators:** Persons who administer or oversee the curriculum of these interconnected programs (e.g., undergraduate or graduate program director)

The idea is to determine what these individuals think the technical communication service course is, does, and covers to determine if such perceptions accurately reflect the course. Technical communication program administrators can use the resulting data to evaluate if these individuals need to be informed to modify their depictions of the class to better advise students and plan curricula.

Collecting this data involves interviewing the advisors and administrators in interconnected programs to identify what they think the course covers and think students learn to do in the class (i.e., learning objectives). From this point, researchers need to assess if the technical communication service course is a pre-requisite to any other courses in the curricula of those interconnected programs. If so, then to determine what aspects of the service class students are expected to apply to these other classes, researchers need to note

- for which classes it is a pre-requisite and
- what the focus and objective are of these classes.

Researchers also need to establish if the technical communication service course is connected to the accreditation requirements associated with a given interconnected program, and if so, how the course connects to accreditation issues.
Based upon interview responses, one could determine if perceptions of the service course are accurate, or if the course needs to be changed to address certain factors. One can also use such results to determine if individuals in other programs need to be informed they have an inaccurate perception of the technical communication service course and what it covers. Advisors in these interconnected programs can also use this information to better inform students of what the class is, what students will learn in it, and what the class will prepare students to do. Such factors, however, also need to be compared to the stakeholder needs, expectations, and perceptions of two other contexts: Departmental (the department that offers the course) and Instructor/Course (the individuals charged with teaching the class).

**Stakeholder Context 3: The Departmental Context**
The next step in contextualized course design involves researching the context of the department that offers and staffs the service course. In this context, the technical communication service course can be seen as a two-edged sword. The class, for example, can be a mechanism for recruiting students to the department’s majors, minors, and concentrations. It can also be an important source of departmental funding based on the number of credit hours it generates (Carter, Anson, & Miller, 2003; MacNealy & Heaton 1999). At the same time, offering the course could mean the allocation of departmental resources that could be dedicated to other things (e.g., the teaching of other courses). Moreover, the technical communication service course could be a central component in the department’s own programs (e.g., a requirement for the department’s major or minor programs), or it could be an ancillary area that exists apart from departmental curricula (e.g., an elective course majors or minors can take, but not essential for them to have).

These factors affect how stakeholders at the department level view the technical communication service course. They also influence the expectations these stakeholders associate with what the course should cover and how it contributes to the goals of the department. As such, program administrators need to determine how the positioning of the class in that home department affects what it covers and how it is taught.
Objectives and questions. Within the departmental context, the overarching research objective involves determining how the technical communication service course connects to programs and curricula of its home department. Program administrators also need to determine if and how well the course meets departmental needs based on such factors. Questions that can guide research on this departmental-level context include

RQ1: How is the technical communication service course connected to overall programs and curricula in the home department (e.g., a required course, an elective, course, some other role)? If it is connected to the curriculum/curricula,
- What role does it play (e.g., is it a pre-requisite for all other technical communication classes in a concentration/minor/major)?
- How many majors and minors does it usually serve (i.e., how many of the department’s majors and minors need and regularly take the class)?

RQ2: Is the service course connected to recruitment into the department’s programs (e.g., is it a gateway course that students take, discover they like the topic, and then go on to pursue a related major or minor in the home department)?

RQ3: How many sections of the course are offered every term (i.e., semester or quarter), and how many of the department’s majors and minors (vs. students in other programs) enroll in these sections each term?

Individuals might modify these questions, but the central premise remains: to determine what role the technical communication service course plays in the home department’s own programs. The key is to understand if changes in the course might affect enrollments, degree completion time, number of majors and minors, etc. in the home department’s own program(s).

Materials and methods. The materials and methods for studying the home department context are similar to those used to study the contexts of other (i.e., interconnected) departments. To this end, researchers should review the following materials associated with the home department:

- The institution’s catalog description for the home department’s program(s) to see how the technical communication service course is addressed in such materials
• The home department’s website to see how the service course is characterized in relation to the department’s program(s) and any related program objectives
• Any materials (e.g., flyers, handouts, checklists, etc.) the department provides to students in its major or minor where the course plays a role (e.g., certificate, concentration, etc.)

The objective is to do a textual analysis of these materials to determine the following:

• How is the service course positioned within that curriculum (e.g., requirement or elective)
• How is the curriculum is connected to the service course (e.g., is it a prerequisite for other courses)
• When in their studies students are expected to take the service course
• What is the service course is characterized as covering
• What objectives is the service course is presented as focusing on

The goal is to determine the expectations departmental stakeholders have for what the course does or covers and the learning objectives for the class. Researchers can then assess if such expectations are accurate, if modifications are needed, or if departmental stakeholders need to reconsider how they view the course.

These texts, however, represent part of the data sources one needs to consider when studying this departmental context. The other part requiring examination involves the individuals and stakeholders in the department—particularly departmental advisors and departmental program administrators. Researchers need to determine what these individuals think the course entails and what the related learning objectives are to evaluate if the class needs to be modified to address certain perceptions and expectations. Such research can also help determine if individuals need to modify how they discuss the class with others (e.g., advisees) in order to effectively convey what it is and does.

To collect such departmental data, individuals should interview advisors and program administrators (e.g., department heads/chairs, directors of graduate or undergraduate programs) in the home department and ask the following questions:

• What topics do you think the course covers?
• What do you think students learn to do in this class?
• Once students have completed this class, what do you think they should be able to do?
• Is this class a pre-requisite for any other courses in your curriculum? If yes
  o Which classes?
  o What is the focus and objective of these classes?
  o What are students expected to have learned in the service class that they would then apply to this other class?
• When are students advised to take the class? Why?
• How many other writing classes are students expected to take prior to the service course? After it?

Researchers also need to ask administrators in the home department questions about the following:
• What factors they use to determine how many sections of the course to offer each term,
• What factors they use to determine who can teach the class or is qualified to teach the class,
• What factors they use to determine when qualified instructors will be assigned to teach one or more sections of the class in a given term, and
• What factors distinguish the technical communication service course from any other service courses (e.g., first-year writing) offered by the home department.

Researchers could use these interview results to evaluate how well the course meets these perceptions. If there are disconnects or differences, the program administrator needs to decide if the course should be modified to address such factors. Similarly, if disconnects occur, administrators and advisors need to be informed that they have an inaccurate perception of the course and what it covers (i.e., what its objectives are). These individuals would also need to be directed to re-think how they advise students in relation to what the class is and what it will prepare students to do.

**Stakeholder Context 4: The Instructor/Class Context**
The final and most focused step of contextualized course design involves the individuals teaching the service course and their abilities to achieve the educational objectives identified by stakeholders in other contexts. Consider if other stakeholder groups think a learning objective of the service course is for students to “demonstrate a proficiency creating basic images to supplement technical texts.” The question
to ask becomes “Do the individuals teaching the class have the background needed to achieve this learning objective effectively?” If not, then does one revise the class to remove that non-attainable objective or retrain or replace instructors to address that objective?

The problem is staffing can vary from institution to institution (Meloncon & England, 2011; Rentz, Debs, & Meloncon, 2010; Wolfe, 2009). Home departments often employ (for contingent faculty and graduate students) or assign (for tenure-track faculty) individuals from a range of backgrounds to teach the class. Yet this factor can cause variation across different sections of the same class within any given term. It can also have important implications for what instructors can cover in the course.

Objectives and questions. At the instructor/class context, the idea is to see if a disconnect exists between what stakeholders in other contexts expect the course to do and the backgrounds and training of instructors. Doing so involves determining the perceptions the instructors have of the class—what they think it should do or cover based on their understanding of what the course is and the role it plays. Such perceptions might also connect to instructors’ desire for additional training, experience, support, materials, etc. to help them address such expectations. The objectives guiding research in this instructor/class context therefore involve

• how instructor perceptions of the class affect what the class covers, and
• what factors are causing these instructor perspectives of the class (e.g., background, training, materials available, etc.).

Both items are central to understanding what is covered in the classes and why. To understand such factors, the research questions guiding inquiry in this context would include:

RQ1: How do the instructors of the class perceive what the class is, what it does, and what it should cover?

RQ2: How do these perceptions affect the content covered in the class and the learning objectives around which the various aspects of the class (e.g., assignments) are or should be focused?

RQ3: What factors are affecting or are the source of these instructor perceptions?

Answering these questions involves collecting data from a number of sources and via different methods.
**Materials and methods.** For this context, researchers need to review the materials used to organize and guide the class and the expectations instructors have of it. Investigating this context involves the collection and analysis of central texts as well as interviewing key stakeholders (i.e., the instructors themselves). While the range of texts connected to the service course can be voluminous, the syllabus stands out in terms of the role it plays in the structure and content of the class. For this reason, researchers should collect syllabi from the individuals who have taught and are teaching the class and review these materials to determine the following:

- How is the course contextualized and described in the syllabus (e.g., “The focus of this class is…”)
- What are the learning objectives for the course (e.g., “After completing this course, individuals should be able to…”)
- What topics are covered in the class and how do those topics connect to the description of the course and its learning objectives
- What mechanisms and methods are used to assess those learning objectives (e.g., assignments, class discussion, homework, etc.)

Ideally, a review of course syllabi can provide data on what instructors as a whole think the focus of the course should be, what it should cover, and what its objectives are (i.e., areas where data converge). Such a review might also identify key variations across instructors (i.e., areas where data conflict, or are not parallel).

Next, researchers need to determine why instructors are approaching the course the way they do. To do so, the researcher should interview prior and current instructors of the class to determine what has been and is covered in the class and why. These interview questions can fall into four major areas:

- Content Questions:
  - What are the learning objectives for this class? Why?
  - What topics do you cover in this class? Why?
  - What assignments/methods of assessment do you use in the class? Why?
Contextualizing the Technical Communication Service Course

- Development Questions:
  - For how long have you been teaching this course?
  - What materials did you use when you first developed and taught the course? (From where did you obtain these materials?)
  - How often do you review and revise the course? Why and based on what factors?
  - With whom do you speak/consult when reviewing or revising the course? Why?

- Background Questions
  - What is your background in relation to the topic/focus of the class?
  - Did you receive any training in how to teach this class? If so, describe that training.
  - How have these factors affected what you include/cover in the course and how you approach topics in the course?

- Professionalization Questions
  - What resources are available for you to remain current in or learn more about this topic area?
  - Are regular reviews or observations used to assess what you cover in the class and how?
  - Are you provided with or can you request a mentor to help with the teaching of the class?
  - How have these factors affected what you can include in the course and how you approach the topics you do cover in the class?

While far from comprehensive, these questions provide a foundation for understanding the perceptions of the instructors teaching the technical communication service class. Researchers can compare interview data to how the syllabus depicts the class to see if there are disconnects between the two.

Data Review and Application

Contextualized course design can yield considerable data. The challenge involves applying this data to develop, review, or revise the technical communication service course. While no single best process exists, the following three-part heuristic can help guide the uses of this information. It does so by matching programmatic needs with instructor abilities and then examining how methods of instruction can more closely contextualize the class within the related institution.
Stage 1: Course Content and Objectives

Guiding Question: What should the technical communication service course cover and why?

When it comes to the technical communication service course, the central factor to determine is what topics the course should cover and why. Stakeholder context data, for example, could indicate the course should cover basic aspects of visual design. Based on this factor, program administrators can determine if the related learning objective should be to assess the efficacy of different designs or to employ visual design principles in a certain way. Once these factors are known, program administrators can identify the texts needed to cover these topics to achieve this objective. They can also identify the assignments instructors might use to assess learning in relation to this topic and the associated objective.

In making such decisions, departmental data becomes paramount, for the content, objectives, and associated materials of the class need to reflect the greater curricular context of the department in which the class exists. The goal is to determine how the class fits into the curriculum and programs of that home department. This determination can guide if the class needs revision to better address the home department’s curricular and programmatic needs (e.g., to better prepare students for the undergraduate concentration or minor in technical communication).

Once this departmental contextualization is complete, one must determine how well the class fits into the context of the interconnected programs that require it of majors and minors. The first step is to assess how well the departmentally contextualized course (i.e., designed to meet the context of the home department) meets the objectives of these interconnected programs. Ideally, the departmentally contextualized class would meet the curricular needs of other departments as is. If not, program administrators need to consider

- what to revise to help the course meet the needs of those interconnected programs,
- which of those revisions applies to the majority (or all) of these interconnected programs,
- if such revisions would change how the course meets the needs of the home department’s programs, and
• if the instructors of the class are adequately trained to address this proposed revision.

Based on these criteria, program administrators could consider further modifications to the class. Such revisions, however, would only be considered if they also contributed to the role the course plays in its home department.

**Stage 2: Instructor Selection and Training**

*Guiding Question: What can the instructors of the service course cover and why?*

Once program administrators know what the technical communication service course should cover, the next consideration is who should teach the course to best address such factors. In this way, the content and learning objective of the class become criteria home departments can use to determine

• what training or background individuals need to have to teach the course,
• what kinds of training sessions and materials can be used to provide instructors with this background (if needed),
• what mentoring models can help instructors develop the skills needed to teach the class, and
• how mentor (or other) observations and reviews can help instructors hone their ability to teach the class.

The idea is to create a consistent learning experience by standardizing what the course covers and the abilities of instructors teaching this content (Meloncon & England, 2011). By providing training and mentoring resources for instructors, home departments can help ensure more uniform levels of instruction and comfort in teaching the course content.

**Stage 3: Pedagogical Approaches and Partnerships**

*Guiding Question: How can the technical communication service class reflect the institution in which it is housed?*

In terms of institutional contexts, central factors to consider in relation to the technical communication service course are the

• nature of the assignments used in it, and
• the educational partnerships integrated into it.

The idea is to create assignments and partnerships that connect to or reflect ideas noted in the mission, vision, and year-related plans of the home institution.
If, for example, the institution’s mission is to prepare students to work effectively in global contexts, then one or more of the assignments in the technical communication service class might involve students preparing a project (e.g., a technical report) for an international audience or on an international topic. Similarly, if the institution’s mission advocates fostering outreach and engagement with the local community, then the course might include a service-learning assignment involving community partners (e.g., create instructions for a local non-profit organization—see, for example, Bay et al., 2010).

The idea is not to change the content or learning objectives of the class per se. Rather, the notion is to use context-based research findings to develop assignments and teaching approaches that contribute to the expectations of stakeholder at the institutional context. In so doing, program administrators can more readily demonstrate how the concepts and objectives covered in the class, as well as the programs that include the class in their curriculum, contribute to the goals of the institution.

**Conclusion**

The service course is one of the most complicated courses in the technical communication curriculum. The service nature of the class means it must often account for the expectations of a range of stakeholder groups at a number of contexts within an institution. The development, review, and revision of the course thus need to meet the expectations of the various institutional contexts in which it exists. Doing so is not easy. If done effectively, however, such processes can lead to productive and rewarding buy-in from multiple groups across the institution.

This entry has presented a research-based approach—the contextualized course design approach—to achieving this objective of positioning the technical communication service course within the complex context of an institution. Readers, however, should not view the approach presented here as definitive. Rather, they should view it as a foundational framework others can modify for their own institutions and departments. In so doing, individuals should focus on identifying the stakeholder contexts in which the course exists. They should also focus related research on how to understand these contexts to create courses that match the needs and expectations of the stakeholder groups in them.
References


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Design Thinking via Experiential Learning:
Thinking Like an Entrepreneur in Technical Communication Courses

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Abstract. The technical communication service course is an ideal place to introduce students to the principles and methods of entrepreneurship via concepts like design thinking, while using experiential learning to show them how to apply these concepts in real-world entrepreneurial situations. By learning to “think like entrepreneurs,” students can become more empathetic, confident, creative, and flexible. They also learn how to work with others in entrepreneurial situations, which is the future of business and industry.

Keywords. design thinking, entrepreneurship, experiential learning, service course

Introduction

In their 2014 article for Programmatic Perspectives, Ryan Weber and John Spartz propose that technical communication instructors extend the “scope of service learning to include entrepreneurship and entrepreneurialism” as a way of building on traditional client-based learning (p. 53). They provide a host of reasons for making an
explicit connection between technical communication and entrepreneurship, citing among other reasons the increase in university-wide entrepreneurship initiatives and current student interest in entrepreneurial approaches (p. 56). In this model, technical communication students benefit from working with entrepreneurs on client-based projects, and entrepreneurs benefit from the rhetorical service of students. In this article, we build on this scholarship, arguing that technical writing program administrators (WPAs) need to renovate and revitalize their technical communication service courses around the core concepts of entrepreneurship and design thinking. Today, students in technical communication service courses need to be taught how to think like entrepreneurs, which means mastering the creative processes that propel innovation in the entrepreneurial workplace.

Entrepreneurship will almost certainly be an important part of the future of engineering, science, and technology, and it has social justice and empathetic components that make it particularly important for technical communication programs (Consortium for Entrepreneurship Education). As of 2015, 27 million people identified themselves as entrepreneurs in the United States (Kelly et al., 2016). Millennial entrepreneurs are starting new businesses at the average age of 27 (Petrilla, 2016). Meanwhile, a conservative estimate shows that college graduates will likely change jobs an average of four times by age 32 (Long, 2016), which means they will need to be continually remaking their careers and their identities in an entrepreneurial fashion. Equally important, the fastest-growing segment of small-business owners are women, minorities, and people with disabilities, many of whom are working out of their homes or storefronts (Zarya, 2015). Indeed, even large enterprise companies, like Google, IBM, 3M, Apple, GE, and Amazon are training their employees to think and behave like entrepreneurs, expecting them to continually innovate in increasingly de-centered and distributed work environments. In other words, entrepreneurship will increasingly be a critical aspect of technical workplaces as these spaces become more agile and innovation-centered; it is also an entryway into scientific and technical economies for people who have been marginalized in the past.
Entrepreneurial thinking is also an important way for the technical communication service course to evolve beyond traditional transactional forms of writing in which students learn how to “translate” technical content into documentation. Technical communication textbooks still routinely present the task as one in which “content” is made understandable for readers through structured organization, plain style, and the proper format of genres, but often documentation is not always responsive to the emergent and changing needs of specific workplaces (Wolfe, 2009). Similarly, user experience or even traditional understandings of usability are under-addressed in most textbooks (Chong, 2016). While the rhetorical genre-based approach featured in current textbooks can be effective, it needs to be situated within a fluid, innovation-based, and team-centered workplace. Entrepreneurs do rely on “standard” business genres but they also invent new ones—and new services—appropriate to their innovations, markets, and approaches. Indeed, while genres can be socially responsive, adaptive, and reflexive, we can also only understand genre after it has been solidified. As Anis Bawarshi (2016) observes, because rhetorical genre studies tend to fixate on genre as an action, such preoccupation often results in the fixing or stabilizing of genre (p. 244). Moreover, genres of service are emerging as ways to developing knowledge in entrepreneurial and other social media ventures (Ferro & Zachry, 2016). Thus, while genres need to be viewed as highly flexible and adaptive to the needs of the rhetorical situation, we also need to realize that we may not be able to “see” genres develop in innovation-based workplaces. Entrepreneurship and design thinking build on and strengthen a genre-based approach to writing, but within highly technological and emergent workplaces.

Today, we need to teach students how to be more creative, empathize with users, reframe problems, pitch their ideas, work in agile teams, and market new products and services to participate fully in the entrepreneurial economy. While there has been a tremendous amount of scholarship in these areas of technical communication (Bekins & Williams, 2006; Brewer & Holmes, 2016; Hailey, Cox, & Loader, 2010; Newcomb, 2012; Pope-Ruark, 2015; Zhang & Kitalong, 2015), the research on these topics has not been integrated under one umbrella. That is, entrepreneurship, because it relies on a different way of being and thinking, integrates many of these research areas under one practice rather than siloing them into different projects, categories, or
Entrepreneurial approaches in the classroom integrates diverse topics like usability and agile teams, for instance, to produce rhetorically aware students. Our argument is that entrepreneurship should be a cornerstone of the technical communication service course because of the flexible habits of thought and action it develops in students. Given today’s emphasis on innovation, agile teaming, social interaction, diverse user experiences, and flexibility, it is hard to see the future any other way.

The focus on entrepreneurship also reflects a larger shift in the millennial population, which prompts us to rethink the curriculum of the technical communication service course toward more experiential approaches. The Gallup organization reports that millennials want to find meaning and purpose in their work, and they want supervisors who coach rather than behave like traditional bosses (Adkins, 2016). This mindset requires us to rethink the pedagogical approaches by which we teach rhetoric in the technical communication service course, focusing on methods that provide purpose, meaning, and mentoring. A pedagogy of entrepreneurship, via specific techniques like design thinking in experiential contexts, can do just that.

In this article, we explore entrepreneurship pedagogy and design thinking, explaining how the technical communication service course can incorporate these techniques. Specifically, we recommend that instructors begin introducing design-thinking concepts into their technical communication service courses. At its core, design thinking is a rhetorical process that uses empathy and new technologies to reframe problems from the user’s needs and point of view. It is inherently user-centered and has become a central methodology in many engineering programs and technical workplaces. We demonstrate how design thinking finds its roots in traditional usability research and aligns with the writing process that is familiar to our field. We then provide examples of how administrators can incorporate design thinking into their service course curricula. Key to this incorporation are experiential learning activities in the classroom where students can actually inhabit the thinking processes of entrepreneurs through real-world projects. We conclude by offering a model for engagement with entrepreneurs that is iterative, sustainable, and scaffolded across the curriculum.
Entrepreneurship and Technical Communication

Entrepreneurship is a relatively recent area of study in technical communication scholarship, even though our field has engaged with and produced entrepreneurs for some time. There are two special issues on entrepreneurship in technical communication, both edited by Clay Spinuzzi: Entrepreneurship Communication in *IEEE Transactions on Professional Communication* (2016) and the Rhetoric of Entrepreneurship in the *Journal of Business and Technical Communication (JBTC)* (2017). Relevant to our discussion is Spinuzzi’s introduction (2016) to the special issue on entrepreneurship communication, in which he outlines how entrepreneurship has been sparsely treated in the field. He argues that entrepreneurship is hard and complex work because “entrepreneurs must communicate constantly and in uncertain environments” (p. 316). Thus, his IEEE special issue on entrepreneurship communication focuses mostly on how entrepreneurs communicate on the job, which is depicted through research that investigates the “narratives that entrepreneurs tell about themselves and pitches that entrepreneurs deliver persuasively” (p. 319). Two teaching cases in this issue are particularly relevant to our discussion: Kyle Vealey and Jeff Gerding (2016) provide a primer on how crowdfunding has been used effectively to teach students how to pitch their ideas. Tom Van Hout and Ellen Van Praet (2016) investigate how non-native English-speaking entrepreneurs use English in public writing and how we might use those experiences to discuss linguistic diversity in the classroom.

In a second edited issue in *JBTC*, Spinuzzi (2017) continues developing a research approach to entrepreneurship. He defines entrepreneurship as “roughly, the process of discovering and conceptualizing problems and then solving those problems with innovative solutions” (p. 276). Entrepreneurship is inherently rhetorical in that the entrepreneur must communicate effectively at multiple levels to achieve success. Spinuzzi (2017) observes that an entrepreneur needs “to develop, extend, and hone complex arguments to interest her support community, her stakeholders, and herself in the vision—and to adapt that vision to the needs of the stakeholders” (p. 277). In this complex workplace ecology, entrepreneurs must maneuver rhetorically and reflectively to position themselves as entrepreneurs, harness the capacities and resources of family networks and local communities, and persuade stakeholders to invest in their innovations. Each of the three articles in the special issue covers rhetorics of entrepreneurial identity, community, and persuasion. Investigating Israel’s startup culture,
Steven Fraiberg (2017) provides research on entrepreneurs in transnational networks, arguing for a “conceptualization of entrepreneurs as knot-workers who mobilize genres, modes, languages, and spaces” (p. 351). Natasha Jones (2017) explores how “[B]lack entrepreneurs harness their rhetorical agency to successfully resist the dominant negative discourse about black business ownership” (p. 327). Based on interviews with twelve Black entrepreneurs, her research demonstrates the complex relationship between rhetorical agency and cultural empowerment. As a result, she concludes, “situating entrepreneurs as rhetoricians can thus ask us to push the limits of how we define success, work, and sites of research” (p. 345). Jeff Gerding and Kyle Vealey (2017) reframe the notion of civic entrepreneurship through the +POOL project, which is an innovative attempt to address pollution in the East River. They ultimately argue for a re-envisioning of civic entrepreneurship that “involves the deeply rhetorical work of designing hybrid solutions that may not necessarily resolve or provide closure to complex social problems but that instead continually adapt and evolve to keep pace with them” (p. 293). In each of these three articles, entrepreneurship is being stretched and re-framed as a deeply rhetorical venture.

Outside of these two special issues, Weber & Spartz have produced a series of articles investigating how entrepreneurs write (Spartz & Weber, 2015), how entrepreneurship is incorporated via service learning (2014), and how the relationship between academy-industry relationships can be opened up through entrepreneurship (Spartz & Weber, 2016). A common thread in this research is the argument that “[t]echnical communication pedagogues and scholars may find common ground with entrepreneurship concerning its emphasis on active, experiential, student-driven, real-world learning” (Weber & Spartz, 2014, p. 53).

One problem impeding our field from reaching this common ground is the inconsistencies among the definitions for entrepreneurship. Spinuzzi (2016) acknowledges various definitions for the term and ultimately describes entrepreneurship as “innovating in search of a profit” (316). Weber & Spartz (2014) define entrepreneurship as “a holistic mindset and skillset allowing people to recognize opportunity, instigate change, and unite people in collaboration to create something new” (p. 54). Their definition is meant to reflect the expansive approach evident in present-day entrepreneurship education. The
Consortium for Entrepreneurship Education defines entrepreneur-ial knowledge as the ability to “recognize opportunities in one’s life,” “pursue such opportunities by generating new ideas and marshaling needed resources,” “create and operate a new venture,” and “think in a creative and critical manner” (p. 3). As Weber & Spartz (2014) point out, only one of these four elements involves starting a new venture (p. 55). The majority of entrepreneurial knowledge is about learning to look for openings, to be innovative, and to marshal resources, all of which are rhetorical abilities that can be used in a variety of different professional, community, and civic situations.

What sets entrepreneurial approaches to technical communication apart from more textbook-driven approaches taught in service courses lies in how we might re-conceive approaches to users. That is, Weber & Spartz’s definition relies on creative thinking and deep introspection on the part of the entrepreneur to address problems that affect human beings, but within the process there is an ever-shifting project outcome and a leveraging of available resources and skills. Rather than separate out rhetorical skills and techniques, an entrepreneurial approach requires the ability to follow processes but also to improvise and develop new approaches to surprising situations. Experiential learning, or “learning by doing,” is a key way that students can learn these rhetorical approaches using an entrepreneurial mindset. Entrepreneurial thinking should encourage students to assess needs together with the clients, based on the resources and skills everyone brings to the table.

Entrepreneurship connects with traditional technical communication practices, specifically via audience analysis, including the focus on user experience (UX design). Innovative thinking requires students, as entrepreneurs, to solve problems from the users’ points of view. The differences between entrepreneurship and UX are subtle but important. Entrepreneurship, with design thinking as a core process, starts with a problem and looks for a solution that will be purchased by a user. UX, in contrast, tends to start with the solution and work to make it responsive to the specific needs of a user, who, it is assumed, will then find value in the product or service via a sustained emotional engagement and response (Acharya, 2017; Roy, 2013). Saras D. Sarasvathy’s concept of effectuation offers a helpful way to articulate the distinction between traditional usability and entrepreneurship. In her landmark essay, “Causation and Effectuation,” Sarasvathy (2001) distinguishes between causation and effectuation in the following way:
Causation processes take a particular effect as given and focus on selecting between means to create that effect. Effectuation processes take a set of means as given and focus on selecting between possible effects that can be created with that set of means. (p. 245) The analogy she provides is that of a chef. A chef can either determine the menu in advance and focus on obtaining the means necessary to produce the food on the menu (causation), or the chef can take the means available (ingredients, kitchen equipment, staff) and invent a desirable menu (effectuation).

Unfortunately, solving problems through effectuation can seem counterintuitive to instructors and students. Classroom environments tend to adopt a paradigm of causation, where the objectives are set in advance and student work focuses on finding the means and processes to accomplish those objectives (Sarasvathy, 2001, p. 243–45). An effectuation approach turns the traditional creative process around by focusing on the needs of the customers and determining what the entrepreneur is able to make. Sarasvathy’s understanding of effectuation requires entrepreneurs to develop a capacity for “effectual reasoning” in which they seek financial success by focusing on the needs of the users and then leveraging their personal strengths and their available resources to meet those needs. She contrasts this entrepreneurial approach to more traditional corporate “causal reasoning” in which leaders set specific goals up front and then identify the specific steps for reaching those goals. In other words, according to Sarasvathy, entrepreneurs tend to pay attention to effects they are able and willing to produce, while traditional business methods tend to stress the causes that lead to products and services. Entrepreneurship education, Sarasvathy argues, should emphasize effectuation, purposefully putting students in situations where success is dependent upon their ability to anticipate the needs of users, leverage their specific skills, use the available resources, and utilize local networks in pursuit of evolving project goals.

The experiential learning environment suggested by this approach encourages risk-taking, collaboration, real-world engagement, and innovation. While service learning and other client-based approaches incorporate some of this real-world engagement, students are often not encouraged to take risks in the same way as entrepreneurs might.
For example, many times client or service-learning projects are determined in advance in terms of what the organization or client wants (the agency wants a brochure for their clients, even though that solution might not even fit the problem, which is not clearly articulated). What is risky in an entrepreneurial situation is that entrepreneurs develop innovative and emergent products and services in response to user-driven problems, but those products and services may not even be imaginable yet by users. By learning and applying effectual reasoning, students put the emphasis on what users want by discovering what kinds of effects a product or service will have on them and inventing new and unexpected products and services as a result of that discovery. They learn how to design products or services that evoke a positive response from the users, which makes customers more likely to buy, use, or implement them.

Sarasvathy and others have already linked effectuation with design thinking (Augier & Sarasvathy, 2004; Sarasvathy, et al., 2008), and as we note below, design thinking is now a staple of scholarship on entrepreneurship. Our goal in the rest of this paper is to show how design thinking can help facilitate a paradigm shift in technical communication pedagogy away from the task-oriented approach found in most textbooks and toward a resources-oriented approach that encourages flexibility, creativity, and empathy through real-world engagement.

**Design Thinking in the Technical Communication Service Course**

The concept of design thinking has been around since at least the 1980s and arguably since the 1960s. Scholars of entrepreneurship usually point to four seminal texts that laid out the basic concepts of design thinking: Bryan Lawson’s *How Designers Think* (1980), Robert McKim’s *Experiences in Visual Thinking* (1980), Peter Rowe’s *Design Thinking* (1987), and Richard Buchanan’s 1992 article, “Wicked Problems in Design Thinking.” Not coincidentally, this movement emerged during the 1980s with the rapid evolution of personal computers and mobile phones. Steve Jobs and the engineers at Apple are often held
up as pioneers of the design thinking process, but many innovative companies like Xerox, IBM, Bell Laboratories, GE, and Hewlett Packard had long been experimenting with new ways to enhance creativity and innovation in their engineering teams.\footnote{Any discussion of the history of design thinking would be remiss if it didn’t mention the work of Stanford University faculty, such as Rolf Faste, David Kelley, and George Kembel, who applied design thinking concepts to engineering education. Stanford is the location of the Hasso Plattner Institute of Design (also known as the Stanford d.school), where many of the design thinking concepts used today were consolidated into an overall approach. Kelley then launched a company IDEO, the Palo Alto design and consulting firm, out of Stanford. IDEO is often given credit for disseminating design thinking concepts beyond engineering and into a variety of fields.}

For many in the entrepreneurship field, design thinking is the core process and even the methodology at the heart of launching a new venture (Brenner, Uebernickel & Abrell, 2016, p. 10; Ingle, 2013; Blossom, 2011). Design thinking is a creative process that uses empathy and new technologies to reframe problems from the user's needs and point of view. On the IDEO website, CEO Tim Brown (2007) defines design thinking as “a human-centered approach to innovation that draws from the designer’s toolkit to integrate the needs of people, the possibilities of technology, and the requirements of business success.” Four keywords in Brown’s definition highlight the fundamental concepts that guide the design thinking process:

- Human-centered means putting the needs and perspectives of users in the center of the process, almost in an obsessive way.
- Innovation means re-defining a problem in new ways by challenging existing assumptions and practices.
- Technology is used to reframe the problem in new ways, thus facilitating the design of prototypes and the testing of those prototypes.
- Business success uses the market to determine whether a prototype solution is successful or not.

Brown’s design thinking process is based on the fundamental assumption that a human-centered approach will ultimately enhance creativity and innovation.
In return, design thinking theorists argue that aesthetically pleasing and easy-to-use products and services will be preferred by customers over products that are visually unattractive, externally complex, or difficult to use. For example, when explaining the importance of design in product development, Jobs said, “Most people make the mistake of thinking design is what it looks like. People think it’s this veneer—that the designers are handed this box and told, ‘Make it look good!’ That’s not what we think design is. It’s not just what it looks like and feels like. Design is how it works” (Quoted in Walker, 2003).

One of the most common descriptions of the design thinking process is articulated by Stanford’s Hasso Plattner Institute. They offer a five-phase process that is commonly taught in many entrepreneurship courses, and it is particularly useful for technical communication:

- **Empathize**—Understanding a problem from the users’ needs and perspective
- **Define**—Articulating the users’ problem, its causes, and its effects
- **Ideate**—Reframing the users’ problem by challenging assumptions and applying new technologies
- **Prototype**—Creatively developing several solutions to the users’ problem
- **Test**—Trying out potential solutions to see how well they work

These phases offer a general direction for creative work, but they are not intended to be followed in lockstep. Designers move back and forth among the phases toward finishing a project, fostering a kind of iterative or recursive work process, much like what has been articulated in usability research (see Gruber, de Leon, George, & Thompson, 2015; Brown, 2009). For this reason, design thinking is somewhat different from UX, which is more in line with traditional technical communication practices. Both approaches work from a user perspective, but design thinking starts with the problem (e.g., people want to use their commuting time to work to get things done), while UX tends to start with a solution (e.g. How can self-driving cars allow people to use their commute time to get things done?). The difference may seem subtle, but it is important. Design thinking opens the door to many potential solutions (ideation), which are then prototyped and tested from the perspective of likely buyers. It also emphasizes what users are likely to purchase, not just what they need. User Experiences (UX) tends to start with a solution, with the assumption that users will buy something if it works and is properly designed. What is the difference? Design
thinking stresses that entrepreneurs need to be open to a variety of possible solutions (e.g., an app, artificial intelligence, mobile communications, self-driving car) that can be sold to a demographic of users. In contrast, UX is appropriate for a company that manufactures automobiles and therefore already has a solution (e.g., a self-driving car) that it wants to adapt to a specific user’s needs. A close examination of the steps involved in design thinking can help illuminate how design thinking fits with technical communication.

Empathize

Advocates like Stanford’s David Kelley (2014) describe design thinking by contrasting it with the “systemizing” approach in which the emphasis is on figuring out the rules that govern a system (e.g., a machine, an economy, a computer program, an algorithm) and then making it as productive and efficient as possible. They point to Simon Baron-Cohen’s (2009) empathizing-systemizing theory (E-S theory) that places people on a spectrum between empathizers and systematizers. Empathizers are those who are better at identifying and understanding the needs and feelings others and responding appropriately: Systematizers are people who tend to analyze, build, and utilize structures, preferring order and predictability. Empathizing and systematizing are not mutually exclusive, but they are mindsets that are often at odds with each other. According to Baron-Cohen’s studies, engineers tend to score high on the S-Quotient, which means they are systematizers, and they often do not score high on the E-Quotient. This tendency explains why design-thinking gurus, like Kelley, regularly advise engineers to learn how to have more empathy with the users of their products and the people they work with, especially if they want to succeed in the new economy (Kelly, 2014).

Accordingly, one of the major problems with the development of new products and services is that systematizers, like engineers, scientists, and administrators, tend to jump straight to a solution without truly understanding the users’ needs. Developers of products and services assume that their users (i.e. other people) think as they do and tend to see the world as they do. Many studies have shown, however, that people in technological fields, who tend to be systematizers, often do not take the users’ needs, emotions, motivations, and goals into account while developing new products (Hudson, 2009; Quesenbery &
In other words, the developers of products regularly see reality in significantly differently ways than the people who actually buy and use those products. So, the empathize phase in design thinking stresses the importance of slowing down and figuring out what the users are really struggling with and what they really want to accomplish.

To teach empathy in technical communication service courses, instructors need to move beyond audience analysis and traditional UX to teach students how to immerse themselves in the users’ worlds. While analyzing potential users, students need to learn how to interact directly with users in their surroundings (Kouprie & Sleeswijk-Visser, 2009). They need to study what users really do, what they need, and how they behave. They need to figure out the “stories” users believe about themselves and the world around them. The ultimate purpose of empathy is to reduce the “detachment” between designers and users, gaining a holistic understanding of what the users are struggling to do (Koskinen, Battarbee, Mattelmaki, 2003). Close observation and direct interaction with users is the key to teaching students how to put themselves in the users’ place and see things from a more empathetic perspective.

**Define**

Defining a problem from the users’ perspective is the key to solving it. Indeed, as design thinking theorists point out, one of the main limitations to traditional “causal” or “systematizing” methods is that engineers, scientists, and administrators regularly retreat into figuring out how to solve their problems and not the users’ problems. They ask, “How can we make this product easier or faster to manufacture?” “What new features would we want in this product?” or “How can we make this cheaper?” The assumption is that the developers’ problems are also the users’ problem, and that is often not the case. That is why we see product flops like Google Glass, Microsoft Bob, bottled water for pets, Bic Disposable Underwear, and New Coke. These products were created to solve problems that customers did not have.

Design thinking uses empathy to define the problem from the user’s perspective, which is something instructors can teach students how to do. Often, students think they can ascertain a user’s perspective without interacting with users or they often assume that their own perspective will be the same as the users’. Specifically, instructors can show students how to put themselves in the place of the users by asking them to identify with users different from themselves. Then, they
should ask them to identify the 2–5 “major causes” that are creating the user’s problem. As they do so, instructors should regularly remind students that when designers lack empathy with the users, they regularly mistake the symptoms of the problem for the problem itself. For example, a university might think the “problem” is a decline in enrollment, which is really just a symptom. The root problems might be outdated recruiting practices, a lack of online courses, and obsolete recreational facilities. If those root problems are solved, then enrollments should improve.

Specifically, it is important to teach students how to pay attention to what is changing in the users’ world. When defining the problem, students need to be continually asking, “What has changed recently that makes this problem especially important to the users right now?” Sometimes, the change is a new technology or a shift in the economy. Perhaps the users’ lives are being disrupted in some way that is creating openings for new products or services.

**Ideation**

Ideation means reframing the problem by challenging existing assumptions and ingrained patterns of thinking. In technical workplaces, ideation typically involves adding some kind of emerging technology to solve the problem in a new way.

The invention of the iPhone is usually held up as a model of ideation. In the 1990s, Jobs and the Apple engineers realized that their highly successful iPod music player would eventually become obsolete when someone figured out how to merge a mobile phone with a digital music player into one product. How users navigated these products was their main challenge. Apple’s iPod was very easy to navigate, while most 1990s cell phones were difficult to use. The iPod had a very simple “click wheel” that offered an intuitive and simple interface. In opposite manner, mobile phones and early generation smartphones, such as the Blackberry, had clickable hard keyboards that were functional but not intuitive. These keyboards worked well for texting and navigating simplistic screens, but they were clunky compared to the iPod’s click wheel. The design team at Apple began looking for ways to make a mobile phone’s interface intuitive like an iPod.

At the time, a company called Fingerworks had been developing a multi-touch screen with which users could navigate a screen by swiping, stretching, and tapping the screen. Today, of course, multi-touch
are commonplace features of mobile phones, but at the time this kind of interface offered a radical departure from the numerical keypads on mobile phones or the QWERTY keyboards on smartphones. Apple purchased Fingerworks, because they understood that the multi-touch screen would greatly simplify the interface of a smartphone, allowing them to merge the mobile phone with an iPod. Even more importantly, though, the multi-touch interface led to an important design breakthrough. The simpler interface supported the use of “apps” that allowed users to move quickly in and out of software applications. Apps, they figured out, could be downloadable, much like songs on an iPod.

This example reveals how ideation works. Several competing companies are making X, and they keep making X better and better. Someone else comes along and adds a new feature Y, which improves the product. Soon, though, their competitors are also making the same X+Y product. That is progress, but it is not a revolutionary shift in the market. Eventually, designers realize that the users need something completely different. Trying to solve the problem from the users’ perspective, they “ideate” on ways to combine X+Y with M+V to “reframe” the product to create a revolutionary new Z, when the real breakthroughs in product design occur. Apple set out to combine phone (X) with iPod (Y), but their use of the multi-touch screen (M) allowed them to reframe the product and add in other features, like apps (V). As a result, they designed something that revolutionized the market.

The concept of ideation may seem quite different from writing and therefore difficult to teach. Fortunately, the concept of ‘reframing’ is actually quite familiar to us in rhetoric. Ideation often involves reframing (using metaphors) in ways that challenge and disrupt how we think about existing things. Instructors can ask students to ideate by using metaphors to reframe existing products with emerging technologies, for example:

- A mobile phone is a skin cancer detector.
- A self-driving car is a nap pod.
- The campus bus is an Internet cafe.
- Dorm dining courts are drone food delivery hubs.

Students can be taught how to use metaphors to re-conceptualize existing products and services in ways that take advantage of new technologies. The key to helping students ideate is to give them the freedom to be creative in ways that are practical, exotic, and even humorous, as they explore new ideas for products and services. Instructors
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can encourage them to think about new technologies, even technologies that currently do not (yet) exist, and then reframe products in ways that users will value.

**Prototyping and Testing**

Time is always in short supply, and developers are tempted to run with their most obvious solution to the problem. The prototyping phase involves coming up with a variety of potential products or services that would address users' needs. Some of these solutions will seem obvious and workable, while others may seem farfetched and even whimsical. The point of prototyping is to avoid locking in on one solution to the problem right away. Instead, prototyping involves going at the problem from a variety of directions, coming up with a range of products and services that have a variety of strengths and weaknesses. Then, designers test these ideas with real users to see what works. With each test, the designers learn something new or at least rule out something that does not work. They build on the ideas that seem to be working and set aside the ones that do not work. Ultimately, prototyping gives designers the freedom to fail in controlled ways, but the key is to pay more attention to creativity and empathy than traditional testing might allow.

The prototyping and testing phases of the design thinking process are often the hardest experiences to replicate in a technical communication class, but they can also be the most fun and satisfying for students. Of course, user testing is not new in technical communication courses, but historically it has primarily focused on documentation testing, specifically on readers. Here, we are actually recommending that students learn how to prototype and test products and services, not just the documentation for those products and services. Granted, class time is limited, but students can be asked to draw sketches and technical descriptions of potential products. If they are able to use CAD programs, they can often come up with more sophisticated drawings.

And, if a maker space is available on or near campus, instructors can reserve some time and let students try to make prototypes and test them. They can use 3D printing, Legos, Play-doh, wood, clay, and paper to create prototypes. They can also go to Goodwill and buy similar products to break apart and reassemble into prototypes (caution: safety glasses and gloves are needed). Then, students can test these products with users. Real users are not always available, but students can try out their prototypes with each other. They can display their
prototypes on tables or on a three-panel board and receive critiques from others in their classes. Instructors can also do a “showcase” in which students, faculty, and staff who are not affiliated with the course can look over the products and offer critiques.

Instructors are often concerned about how the design thinking process is incorporated into course assignments. We have found that instructors can try some of the following sequences of assignments.

- A user-analysis briefing that leads to a problem-analysis whitepaper.
- A concept paper engaging in “metaphorical play” that becomes the basis of a concept narrative that uses storyboards and reflection to explain the narrative of a proposed product or service.
- An elevator pitch that leads to a proposal for a new product or service.

Even the career unit can be reframed around entrepreneurial themes, asking students to understand the hiring process from employers’ needs and points of view. Instructors can show students how resumes, cover letters, and career portfolios now need to reflect innovation and entrepreneurship skills that current employers are seeking.

In sum, it is important to repeatedly remind students that the design thinking process (empathize, define, ideate, prototype, and test) is recursive and iterative. When learning the process, students may find it helpful to go through the steps one by one, but they need to learn how to move back and forth among them. In this way, the design thinking process is very similar to the writing process that we already teach in composition and technical communication courses. The process is fluid and flexible, not something to be followed mechanically or in lockstep.

How Do We Use Experiential Learning to Teach Entrepreneurial Thinking?

In the remainder of this article, we will broaden this discussion beyond the technical communication service course to the programmatic level. The design thinking process, while rhetorical at its core, centralizes engagement with real-world problems and materials or real world clients and markets. At the program level, technical communication
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instructors can be trained to teach students how to be more empathetic to the needs of others; how to be more confident in situations that require creativity and innovation; and how to reframe existing problems and apply new technologies (ideation) to solve complex problems (Dorst & Cross, 2001; Marback, 2009) in the context of experiential learning situations. Experiential learning gives students real-world and open-ended problems to solve with real clients. It helps students get their hands dirty by solving real problems and developing workable solutions, not hypothetical ones. An experiential approach in the technical communication service course also allows instructors to teach innovation, design thinking, and creative problem solving within the institutional constraints of a required service course.

David Kolb (1984) defines experiential learning as “the process by which knowledge is created through the transformation of experience” (p. 38). He outlines varied tenets on which this definition rests: Learning is best perceived as a process, not in terms of outcomes; learning is a continuous process grounded in experience; the process of learning requires the resolution of conflicts between dialectically opposed modes of adaptation to the world; learning is a holistic process of adaptation to the world; learning involves transactions between the person and the environment; learning is the process of creating knowledge.

These tenets clearly demonstrate education as a rhetorical phenomenon in which the learner continually creates and refines knowledge through rhetorical negotiations with the ecology in which he or she is located. Moreover, that knowledge is grounded in one’s experiences of those negotiations. One of the tenets of entrepreneurial education is that entrepreneurs start with what they know and what informs their background. In order to make these connections, they have to reflect on their experiences, recognize what they know, investigate what they need to learn, and adapt to their current circumstances.

In technical communication research, experiential learning theory is connected with service learning, internships, co-ops, and other situations in which students are required to apply concepts and theories to authentic, real-world writing situations. Jean Lave and Etienne Wenger (1991) argue for the concept of situated learning in which learning is a process that occurs in a community of practice.
Newcomers learn via “legitimate peripheral participation” in which they are introduced to learning via low-risk tasks and gradually move up to more responsible tasks, which develops their expertise over time. Scholars in technical communication have relied on these kinds of experiential learning theories to show how technical writers learn to write on the job. Aviva Freedman and Christine Adam (1996), for instance, use this model to describe how novice technical writers develop expertise in their internships. Chris Anson and Lee Forsberg (1990) lay out a process of learning that interns experience as they learn how to navigate professional writing communities of practice. More recent scholarship has focused on transfer of rhetorical knowledge from classrooms to real-world situations (Brent, 2011). Throughout this research, scholars have been trying to understand how to best prepare students for the transition to the real-world writing that they will undertake as professionals.

Entrepreneurship can serve as another venue by which technical communication students can learn experientially. The literature in business and entrepreneurship shares this goal of preparing students to become entrepreneurs. Many have connected Kolb’s learning cycle to entrepreneurial learning (Cooper, Bottomley, & Gordon, 2004; Cope & Watts, 2000; Corbett, 2005; Daly, 2001; Jones & English, 2004; Pittaway & Cope, 2007; Politis, 2005). Similarly, David Rae (2000) asks how do people learn to work in entrepreneurial ways. Meanwhile, Diamonthe Politis (2005) defines entrepreneurial learning as “an experiential process where the personal experience of an entrepreneur is transformed into knowledge, which in turn can be used to guide the choice of new experiences. (p. 407). Part of that process involves recognizing and capitalizing on potential opportunities and one’s own strengths. Two specific learning outcomes in this process are “(1) increased effectiveness in opportunity recognition, and (2) increased effectiveness in coping with the liabilities of newness” (p. 403). Likewise, one’s past career experiences are important for the transformation of new ideas into entrepreneurial knowledge. In almost all of these models, the process of learning to be an entrepreneur is grounded in reflection on one’s own experiences and background, as well as recognizing opportunities and managing change. We might be able to rethink this learning as closer to rhetorical adaptability. Politis (2005) notes that the development of entrepreneurial knowledge is a lifelong activity and not one that can be created via formal learning situations. However, he does say
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pedagogy “should primarily focus on developing creativity, critical thinking, and reflection among individuals, which in turn can have a profound influence on both their motivation and ability to develop entrepreneurial knowledge throughout their professional lives” (p. 417). This kind of learning is exactly the sort of rhetorical education that we want instructors to provide in technical communication service courses, where we might only have one semester with each student. Sustainability is an issue that must be addressed, much as they are with internships, service-learning partnerships, and other experiential situations. “Drive-by” experiential learning in which one instructor might partner with a business or community organization for a project before “moving on” the next semester is a perennial problem. This is why we suggest a more programmatic approach to incorporating entrepreneurship into technical communication service courses, one in which various iterations with entrepreneurs and entrepreneurial sites continue across semesters and courses.

Programmatic Approaches to Sustaining Entrepreneurial Connections

As mentioned above, one of the challenges of any experiential learning situation has been establishing and maintaining sustainability with community and corporate partners. While the literature on service learning has discussed this issue (Cushman, 2002), as well as reciprocity (Powell & Takayoshi, 2003; Remley, 2012), the challenge is also present for internships, community work, and by extension entrepreneurial relationships that are connected with courses or programs. Service-learning theory advocates that instructors develop relationships over time with community partners, which involves multiple courses and sections engaging with the same community partner over time, all based on reciprocity. The problem with applying this approach to entrepreneurs or start-ups is that at some point, that company or entrepreneur will have developed his or her concept and moved on, or maybe even gone out of business. One failure (or success) does not mean that an entrepreneur stops being an entrepreneur, but it does mean only some entrepreneurs will establish a business and stick with it. To promote the sustainability of this model, we advocate technical communication programs develop iterative structures with local “co-working sites,” which will foster various configurations of engagement across courses, people, and work relationships. As Spinuzzi (2012) has
already argued, co-working sites are emergent forms of collaborative work that could define the future of business development.

At Purdue, we are fortunate to have three co-working sites with which to collaborate: the Purdue Foundry, which is an entrepreneurship hub that supports innovation, startups, and commercialization by Purdue faculty; the Anvil, which is a student co-working space for Purdue student entrepreneurs; and Matchbox, which is a local co-working studio in the city of Lafayette. Each of these sites provides rich opportunities for sustainable collaboration, consulting, research, internships, and service-learning projects. While these are permanent sites, participants in them are not, which requires program administrators to come up with innovative ways to develop and sustain relationships with these sites over time. Fortunately, entrepreneurs and their start-ups are usually interested in the “free” help from students and faculty because they have very limited resources themselves.

One approach that we are trying to develop is a form of iterative engagement in which faculty ensure regular collaboration and commitment to a startup or entrepreneur across different kinds of experiential learning situations. For instance, a team of students in a technical communication service course could start working with a startup company in one semester but then hand off their work to a team the next semester. Students in a technical communication service course might develop a plan in which they identify future needs for the entrepreneur, such as interns, consulting projects, or collaborations with other startups. Program directors can then ensure that a technical or professional writing intern, for instance, could be placed with that startup in the following semester to maintain continuity. While we have often advocated memos of understanding for service-learning partnerships and internships, it might be helpful to further develop that concept for entrepreneurial partnerships. Such memos could extend across semesters to more than one course and also provide the structure needed so that classes or interns understand the parameters of their work and have the support they need to complete assignments.

Another configuration we are working toward is developing courses across disciplines that collaborate together and support two or more startups. In this instance, the technical communication service course would be “linked” with another course in engineering or technology area to foster the design process. We have already started work
on this collaboration with first-year composition, as well as with gaming courses at Purdue. We are also now establishing these kinds of relationships with the life sciences. Again, these activities might lead to future internships, consulting opportunities, job placements, or perhaps research opportunities for faculty in technical communication.

One important point to make is that, like other experiential learning situations, faculty should establish credibility with entrepreneurial sites before approaching them for course projects or other situations. One of our authors, Richard Johnson-Sheehan, for instance, has been working with the Foundry as a communications consultant and mentor for new start-ups. Another of our authors, Jennifer Bay, has worked to develop professional relationships with some of the entrepreneurs at Matchbox in order to place technical writing interns with their organizations. In order for these iterative engagements with entrepreneurs to work, faculty must bring their own talents and time to entrepreneurs and the startups with which they want to engage.

Conclusion: We Too Need to Think Like Entrepreneurs

All around us, brick-and-mortar industries are being disrupted, such as manufacturing, media, insurance, information technology, telecom, healthcare, retail, and on and on. Brick-and-mortar universities and colleges have thus far evolved in ways that have avoided all-out disruption, but many of us in English, Rhetoric, and Communications departments are being challenged to respond to rapid changes in the economy and students’ career interests. It is not hard to imagine a not-so-distant future in which we face vigorous competition from alternative forms of education or even competitors from within our own campuses. We should welcome that competition and start looking for ways to thrive in this new economy. Education will still be vital, even though its delivery will surely evolve.

Across and around our campuses, we are witnessing engineering, technology, and business programs changing quickly to incorporate innovation and entrepreneurship into their curricula. Even a brief glance at their social networking feeds and websites will show anyone that entrepreneurship is more than a buzzword or fad for these programs. They are promising students that they will teach them how to start new businesses and invent new products and services.
Universities are promising corporate leaders, state legislatures, and members of the so-called creative class that they are developing “entrepreneurial ecosystems” around their campuses that will generate new jobs and spur economic development.

Technical communication programs must evolve to meet these new challenges. We must teach our students how to have empathy for users, peers, and stakeholders, just as we must have empathy for the needs of our students. We must define educational problems from our students’ points of view, not our own, and we need to ideate those problems by reframing them and incorporating new technology. We need to prototype new assignments and new activities and then do testing to see which ones work. Meanwhile, we cannot afford to continue teaching traditional forms of technical communication to our students. We need to teach them to think like entrepreneurs, in line with how they are now being taught in their engineering programs and other technical courses. And, we too need to start using design thinking and experiential learning to be innovative and provide our users what they need. In other words, we too need to think like entrepreneurs.
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Critical Postscript on the Future of the Service Course in Technical and Professional Communication

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The guest editors asked if I could respond to the work presented in this special issue in a way that was critical but useful. To make the critical points useful meant finding a way to point technical and professional communication toward different ways to think about programmatic scholarship and programmatic work. In other words, following the premise of the technical communicator as problem solver, I attempt to take the critique of the essays and the service courses as a direct call to action to improve our research and pedagogical practices related to how we think about and talk about programs in the field.

This special issue encourages technical and professional communication to pause and to critically reflect on this course, which is much needed because the service course is in many ways our beginning. Thus, it ought to be the touchstone from which we improve as a field—particularly in our programmatic research and development. In this way, these articles, and this postscript, are the first steps in an over-all dialectic to understand the service course. In thinking about the technical and professional communication service course, I have for years echoed Michael Knievel (2007) when he said it is “a crucial
curricular site, significant to the long-term health, credibility, and viability of the field” (p. 89). While it has not been the field’s identity (like the first-year writing course has remained the identity of composition), the service course has nonetheless always remained an important facet of our programmatic identity, because of the ubiquity of the course at locations with technical and professional communication programs, as well as at locations without full-fledged degree programs. With the number of students it serves, the course becomes a marker of the expertise of the field by illustrating in practical and material ways the importance of technical and professional communication’s knowledge in producing complex information for a wide variety of audiences. In fact, as Kirk St. Amant’s entry points out, it is a course that both complicates and buttresses the identity of technical and professional communication as a field. It is a key location for highlighting, in a microcosm, what the field is, what the field does, and in theory, what the field values.

Unlike composition, technical and professional communication has, from almost the very beginning of its existence in higher education, had the dual role of building and sustaining academic degree programs, while also maintaining a service function. This dual role has allowed technical and professional communication to professionalize its domains of knowledge through its disciplinarily or field expertise (i.e., degree programs) and connect that knowledge to the large number of service courses that in many ways help to sustain our programs. Because unlike Patricia Sullivan and James Porter’s (1993) contention that technical and professional communication has a service identity (pp. 405–406), my research into programs¹ has shown that, if it was ever the case, it is no longer the standard paradigm.

With that said, the dual nature of technical and professional communication’s academic identity is one to carry proudly. While it seems that many may disparage using the term “service” (as did Sullivan and Porter, 1993, or Connors, 1982), I find great value in the term in much

¹ See endnote, page 225.
the same way that James Dubinsky (1998) did. Dubinsky argued for making visible the discourses around the service course and “rediscovering the positive meaning of service in the social contexts of literacy” (p. 40). This move opens a space to have meaningful conversations about the work we do and the value we bring to our institutions and to our programs. For example, in Brian McNely and Randall Monty’s (2017) workshop on the service course, they asked participants to consider reciprocal relationships of curricula and identity, exploring ways "in which courses that have traditionally been seen as providing service to the university may be rethought, reconfigured, and repositioned" (n.p.). Following in some ways the model presented by St. Amant, technical and professional communication program administrators (PAs) and faculty can choose what service it is we actually offer in the form of courses for other departments and what those courses should look like in terms of content.

For the last 10 years I have examined, in detail, programs in technical and professional communication. What I hope my research has done is to show the importance of shifting from localized examples and narratives (cf., Bridgeford, et al., 2014; Tillery & Nagelhout, 2015) to a field-wide view based on data. While local examples are useful and continue a practice that has a long history in the field, we do ourselves a disservice if we fail to consider the local alongside the global. Part of my argument for broadening the way we do programmatic research is that as the field has grown 172% over the last ten years (Meloncon, 2012), so it has become necessary to uncover trends and insights into pedagogical and programmatic practices through methodological meta-analysis that helps us ask better questions about the work that we do.

In other words, technical and professional communication needs to perform an archaeological dig, of sorts, to understand the field’s “knowledge infrastructures.” This term, borrowed from Christine L. Borgman (2015), resonates because it defines the numerous parts that make up the knowledge making, or research, enterprise. Knowledge infrastructures include people, practices, technologies, institutions, and relationships. Thinking of the service course as one part of a
programmatic knowledge infrastructure provides technical and professional communication an important way to study the structure of particular historical narratives, and in this case, we are trying to understand the service course and the role it plays within our programs’ institutions.

I focus my critical view of knowledge infrastructures on three areas:

• considering pedagogical approaches
• improving research
• understanding the impact of labor within the field

While initially viewed through the lens of the service course, these three areas bring into sharp focus important issues for the field that extend well beyond a single course. As part of our knowledge infrastructure, these three areas are critical to the future of the field.

**Considering Pedagogical Approaches**

The pieces in this special issue raise important questions about pedagogy, which I use here to mean the theoretical and practical approach to teaching practices: that is, what we do in the service-course classroom.

Something not at all discussed at length is the fact that there are different kinds of survey courses. The most common types are technical writing, business writing, and the even more ambiguous, professional writing. The most common “specialized” service course is a version of writing for the health sciences. Such distinctions are crucial to recognize because they encourage thinking through our pedagogical practices and how we address the service course, a bigger question—and one in which the field has turned something of a blind eye—is truly what is the difference between the service courses? Should there be differences, and if so, what should they be? For the majority of schools the answer is “No, there is no difference.” Because, as Lora Arduser points out in this issue, there are few, if any content differences between the differently named service courses at her location, and based on my own research this is true at the majority of institutions.

However, as Ann Marie Francis’ entry in this issue shows, engineers encounter certain types of documents on the job; this means there is an ongoing need to expose students to the types of writing they will be doing in their specialized fields after graduation. This
point also connects to Jennifer Bay, Richard Johnson-Sheehan, and Devon Cook, (in this issue) who make the bold proclamation: “Technical communication programs must evolve to meet these new challenges….Meanwhile, we cannot afford to continue teaching traditional forms of technical communication to our students. We need to teach them to think like entrepreneurs, in line with how they are now being taught in their engineering programs and other technical courses.” An interesting point not addressed by Bay et al. is that in the world of engineering work (as someone who still works in this professional realm), “traditional forms” are still being used so there is an ethical stance in creating programmatic space that isn’t an either/or. However, Arduser, Francis, and Bay et al. underscore the need to think through the different kinds of service courses and what those differences mean pedagogically.

As Nancy Blyler (1993) argued, separating the teaching of workplace writing into different courses such as business, technical, for [fill in major or specialized writing here] is not the curricular solution because students need exposure to different kinds of writing within the same course. Blyler made the distinction between the course content by focusing on the memo, which she classified as an informative text, and the report, which she called persuasive. As the field began to theorize and think through in deliberate and sophisticated ways how curricular choices are made, the distinctions between the two courses were often done based on binaries or rationales that we, as instructors and administrators, should find somewhat specious in 2018. However, what this historical work tells us now are some of the rationales for the creation of different service courses. Beyond institutional pressures to meet the needs of different students and departments (and those same departments not fully understanding the work technical and professional communication does), the field was trying to create epistemic and theoretical approaches to the different service courses.

Even though “entrenched interests” (Blyler, 1993, p. 237) often help to keep these courses separate, faculty and technical and professional communication PAs need to push back against these moves with cogent and forceful arguments about the disciplinary knowledge we bring to the course. Recent work by Jennifer Veltsos and Ashley Patriarca (2017) found stakeholders in other departments express similar attitudes and desires of the content they want covered in the technical writing service course and the business writing service
course. For example, their disciplinary faculty partners, regardless of departmental home, wanted the service course to cover:

- Composing messages: Grammar & sentence structure, editing your own and others’ documents
- Visual communication: Creating tables and graphs, document design and layout, visual aids
- Interpersonal skills: Participating in meetings, providing constructive feedback, writing collaboratively
- Numerical literacy: Analyzing and communicating statistical or financial information

The learning outcomes of the service course tell us that they align with the disciplinary faculty partners of Veltsos and Patriarca (2017), as well as the topical approach of most textbooks. The numerical literacy and specificity of visual communication is not as strong in the service course learning outcomes, but an emphasis on document design (connected to generic form) and visual aids can be found in the majority of service courses (Meloncon, 2018, raw data). In addition, service-course learning outcomes also emphasize some proficiency with technology or what can be referred to as a technological literacy, as well as research. These learning outcomes are often achieved through common assignments such as reports, proposals, letters, presentations, and resumes (Meloncon, 2018, raw data). But when one goes to put disciplinary approaches, outcomes, and assignments together into the design of the service course, the question becomes how to frame or approach teaching the course.

**Current Genre-Based Approach**

At the present time, the most prevalent approach to teaching the service course is one that is genre-based and where the course is structured around moving students through typical genres they would write in the workplace. One of the reasons the field has settled into a genre-pedagogical approach is that the most used genres in organizations are flexible, dynamic, and malleable to different industries and end results. This flexibility explains why it becomes vital to teach the rhetorical contexts and social dynamics in which writing takes place rather than specific adherence to a generic form. While outcomes for the service course highlight the rhetorical nature of writing (i.e., paying attention to purpose and audience), in practice, many courses may seemingly be devoid of context and settle into teaching generic forms.
Teaching forms is much easier than teaching the rhetorical practices of the forms, and considering the diversity of the individuals who teach in our programs, it is not surprising that generic forms is the primary pedagogical mode. As an experienced teacher, I was surprised to read Heidi Lawrence et al.’s (2017) recent piece on proposals—an entry that claims the field needs to teach the rhetorical exigencies behind the proposal rather than the proposal form. But as I considered this piece further, it seems the reviewers likely acknowledged the importance of this idea, and for many instructors in our programs, this approach is a novel concept.

Incorporating an emphasis on rhetorical exigencies and messiness of the workplace is a difficult proposition for an experienced instructor, but such a method is even more so for an inexperienced one or one who does not have a technical and professional communication background. Thus, many programs and instructors tend to lean on textbooks to help. However, Joanna Wolfe’s (2009) analysis of textbooks and engineering curricula and practice is important for the discussion at hand. Any review of the current textbooks being used within the field will highlight that they are structured around teaching genres: proposals, reports, letters, emails, memos to name but a few. Wolfe concludes that students would “benefit from more exposure to the genres and types of rhetorical decisions that are most common in their disciplines” and there is a “lack of attention to the forms of argument and evidence that our science and engineering students most need to master to be successful rhetoricians and writers in their fields” (p. 353). Wolfe’s analysis demonstrates that while genres are important they are only useful if that genre knowledge is matched to more advanced rhetorical training. This particular point cannot be emphasized enough, because if textbooks are failing to include material that can help new and inexperienced teachers provide the depth and sophistication of teaching genres as embedded within complex and messy rhetorical situations, then teaching genres will devolve into teaching nothing but the conventions of the forms.

This seeming contradiction raises the question of whether genres are really the best way to teach the service course, or if they are simply an easy way to organize a course? Have we become complacent in teaching the service course?
Alternatives to Genre-Based Approach

Some have considered importing the “writing about writing” model from composition (Read & Michaud, 2015). The main tenet of writing about writing (WaW) is to teach the field’s disciplinary knowledge (Downs & Wardle, 2007). In other words, one of the impulses of WaW is to, in part, train students in the same traditions of the field of composition. As such, WaW focuses on translating writing into an academic framework. It, for example, diverts attention away from learning the rhetorical exigencies of workplace settings to those of an academic orientation. Such a focus on academic writing, however, is not the aim of the service course.

The service course is not designed to try and reproduce a version of the instructors or academia. Instead the goals of the service course are about real-audience needs, problem solving, and learning to communicate information that has real cultural, legal and ethical obligations. Diminishing those goals to focus exclusively on the writing in the field—particularly if that writing is not practically focused—is a major disservice to students. Writing about writing is actually no better a move for technical and professional communication than writing about literature is for first-year writing.

Technical and professional communication is dedicated to ensuring that students match the field’s expertise and knowledge to their own content knowledge. For technical and professional communication, its aim, particularly in the service course, is to take the student’s content knowledge and move that outside of academic frameworks and into disciplinary and workplace practices. Thus, WaW and the technical and professional communication service course have completely different aims and goals and to attempt to import WaW into technical and professional communication is actually counterproductive to the work of technical and professional communication.

To expand pedagogical practices in the service course, technical and professional communication would be much better served to sever ties with composition and look toward more innovative and better-researched practices that are being experimented with in engineering or even in business communication. WaW fails to adequately engage the body of knowledge in technical and professional communication value. Repurposing a practice from composition misses, ironically, the whole purpose of technical and professional communication; that is, the need to understand the audience and purpose of the communica-
tive act. Technical and professional communication wants students to learn how to translate and communicate their own knowledge on their own terms. In technical and professional communication, we work to solve real-user needs and ethical and legal obligations. Thus, students need the resources to be able to write in a variety of situations for a variety of purposes that WAW is ill-positioned to meet.

In short, this potential movement is not the answer to pedagogical concerns in the service course. Thus, we have circled back to facing the question: How can we re-invigorate situating genres within a rhetorical context and make this pedagogical move with full awareness of the diversity of instructors who teach in our programs?

Reinvigorating Genre through Problem-Based Scenarios

Julie Dyke Ford (2004) best summarizes the problems with the genre-based approach in her study of transfer from the service course to an industrial engineering course. Ford shows that students often rely on the “model based tactics, formats and templates and the text’s appearance” (p. 310) rather than the “awareness of audience or sense of purpose.” She concludes with what I am more strongly arguing for here: to teach what genres are, rather than what they look like.

I am proposing taking several existing practices and putting them together into a problem-based scenario pedagogy. This pedagogical approach combines case studies for education purposes (both research and teaching) with problem-based learning approaches to ensure that genres contain their rhetorical exigencies and messiness.

As early as 1997, Hillary Hart explained that environmental communication cases “make communication the content not just the skill-building goal of the course” (p.79). This idea of cases is not new in technical and professional communication, but it is an approach that has not been fully explored in our research nor integrated into our pedagogical practice. Probably, the most well-known use of cases as a pedagogical method is that of Harvard Business School (https://www.hbs.edu/mba/academic-experience/Pages/the-hbs-case-method.aspx), who developed their case method as a way to place the student in the role of decision maker within a case that has no simple solution.

Within technical and professional communication, we have longed used our own versions of the case method and have made in the past explicit calls to incorporate them into our pedagogy. Teresa Kynell and
Wendy Stone (1999) wrote a textbook based on “scenarios” as a way to focus on critical thinking and the diverse writing tasks necessary in technical and professional communication. The Annenberg Center at the University of Southern California has developed their own case method specific to strategic communication (http://cssc.uscannenberg.org/about-cssc/), and there have been several special issues around this method (Rogers & Ryman, 1998; Williams & Strother, 2004). A major journal in our field, IEEE Transactions on Professional Communication, continues to publish “teaching cases.” What the field has not done as well is to place this approach to pedagogy and expanded it into a fully-developed pedagogical approach that would include professional development opportunities on how to create effective case studies and more importantly, how to teach them. The closest we have is Jonathan Maricle’s (2016) work, which I am building on here.

An important part of both creating a teaching case and teaching one is to understand the importance of the problem embedded within the case. This, too, is an area that is underdeveloped theoretically and conceptually in technical and professional communication literature. Thus, here is an appropriate instance where we should borrow from other fields. Problem-based learning (PBL) is something that many instructors in technical and professional communication do intuitively if not directly. Developed in medical education (Kaufman et al., 1989; Neufeld et al., 1989) as a way to get students to think through messy problems with no clear-cut solution, PBL has been incorporated into educational initiatives across disciplines because it encourages students to immerse themselves within the problem and work through potential solutions for it. From a pedagogical and learning standpoint, it should be obvious as to why empowering students to develop a solution would be a welcome addition to any course. Technical and professional communication has incorporated PBL in a limited fashion (Paretti, 2006; Tatzl et al., 2012) in trying to develop models for improving pedagogical practice and learning outcomes.

By explicitly merging PBL with the case method and focusing on the pedagogical process—from reaction to modification to matching assignments, outcomes, and classroom activities to them to methods for using them in the classroom to professional development—a new pedagogical approach can be created. Moving away from the term
“case,” which is encumbered with histories outside our field and is often confused with a research method, I chose the problem-based scenarios in part because scenarios picks up and extends work within technical and professional communication (Kynell & Stone, 1999) and also in part because they provide more flexibility than one would find in typical teaching cases. By flexibility I mean that problem-based scenarios can vary in length and sophistication, which can meet the need of the wide range of instructors in technical and professional communication and students. Problem-based scenarios still incorporate genres as a primary mode of teaching, but it embeds those genres within a descriptive scenario so that the genres do not lose their rhetorical context and exigencies.

Using problem-based scenarios encourages the genre approach to be more rhetorical situated and sound rather than so focused on forms. As a rationale for creating cases, which can be more context dependent, Doug Brent (2011) reminded the field that “Highly context-dependent skills such as rhetorical performance are best learned—perhaps can only be learned—when learners are immersed in the real context in which such skills must be performed on a daily basis” (p. 400). Returning to Ford’s (2004) study, she potentially offers the field a way to start to (re)conceptualize how we teach and ultimately train instructors. While Ford found that the students understood the generic form but not the rhetorical exigencies behind how to use the form, she also found something that needs greater attention in the field. She found that engineering students were able to perform the important synthesis work of transferring what they learned from one context to another when they had experienced a co-curricular activity such as a co-op or internship. Ford concluded “In order for students to fully grasp rhetorical strategies that call for conceptual thinking and problem solving, they need to have experience writing texts in a context besides the classroom” (p. 310). This idea of real-ness is of prime importance in the service course, but as we know, that is much easier said than done.

Problem-based scenarios become a techné, which is always contextualized, and in creating the scenarios it ensures all activities are connected to something specific that is evident through the description of the scenario and deliverables. Ryan Moeller and Ken McAllister (2002)
see *techné* as a way for students to position themselves not as employees but as artisans, and that makes room for “learning and playing with basic concepts, experi-menting with them, and using one’s imagination to form increasingly complex understandings of what is being practiced” (p.186). While learning outcomes are sometimes abstract ideas for students, specific tasks or problems faced within a scenario allow students to potentially better grasp the outcome of the case and their work. In other words, using scenarios—as a *techné*—helps to address some of the problems currently faced in a prescriptive genre approach.

Problem-based scenarios as *techné* are infused with explicit and implicit rhetorical exigencies that students will have to grapple with, and hopefully this approach mirrors more so some of the issues that students found in their co-curricular activities that made transferring knowledge about writing easier. Embedding students in fully developed cases allows them to start to truly see and experience writing that is directed at external audiences in a way that better mirrors the messy communication situations they will find on the job.

Rebecca Morrison (2017) argued for the use of genre in business communication as a way to encourage students to develop their critical thinking skills. Morrison’s approach complements the problem-based scenarios because she focuses on the outcome, or *telos*, of what the genre needs to accomplish. Thinking in rhetorical terms of the end result simply underscores the necessity to teach the rhetorical foundations of what genres can potentially accomplish rather than the form of them. Technical and professional communication does not need to abandon genres because they are such an important aspect of workplace communication.

This approach could incorporate Bay et al’s “entrepreneurial thinking” as well as keeping an emphasis on the important genres that students would need (Francis, in this issue). It would also provide a way to help explain to different stakeholders what a single service course could offer multiple departments (Arduser, and St.Amant, in this issue). It is flexible enough to incorporate service-learning components (Carnegie, in this issue) in a way that is scalable to the many types of faculty we have in our programs (Read & Michaud, in this issue). Moreover, pedagogically the field has to turn its attention back to teaching rhetorical practices and exigencies—on the actions that produce things, not the resulting objects they produce. We need to teach *proposing*...
not proposals; *instructing* not instructions; *reporting* not reports. Teaching de-contextualized forms is not helpful in preparing students for future careers that will use and incorporate generic forms in a multitude of ways.

The service course is definitely an in-between, liminal location between a student’s last involved interaction with writing in complex situations and their next step as new writers in the workplace. No classroom pedagogical approach will provide a completely realistic experience of the workplace—and it should not—because classrooms need to be safe places for students to experiment and to practice and to (potentially) fail. We have to resist the urge and the pressure to create simulated workplace environments and instead offer students assignments, exercises and experiences that allow them to practice the skills that will make them adept and flexible rhetorically savvy writers.

**Improving Research**

The entries in this issue also underscore the need for a different orientation to pedagogical and programmatic research. The entries also highlight three specific areas that the field could attend to and immediately see improved results:

- Research study design
- Participant recruitment
- Different approaches to research

These three ideas are discussed in the next three sections.

**Research Study Design**

Greater attention needs to be paid to *research study design*, which is a systematic and reflexive approach to designing studies in ways that emphasize the connection and integration between the research question and the chosen methodologies, methods, and practices used to examine a topic.

Research study design is a comprehensive plan that provides the rationale and justification for methodology, methods, and practices with an intense and transparent focus on ethics. The study design should serve as the roadmap for the research project and remain flexible enough to change when situations arise during the research project. While some aspects of research study design may be done
intuitively and/or implicitly, there is a need for deeper thinking and more transparency through description of the research study design to ensure that the practice of research will ultimately result in data that answers the original question.

Greater attention to designing a research study, which shifts the thinking for our over-reliance of picking methods first, will allow technical and professional communication to create research that can be validated or refuted—and it is this ability to test and validate or refute that allows for true dialects to evolve, for real knowledge to be created, and for discussions in the field to move forward in meaningful and effective ways. While some qualitative or rhetoric-based scholars will want to push back against the more scientific terms of replicable or generalizable, the fact remains that pedagogical research in technical and professional communication needs to be critically examined and improved so that we can build the field’s knowledge.

To build the field’s knowledge also means that we need to ask better research questions, a key facet of research study design. Every entry in this issue starts from a point that one might argue is somewhat disconnected from the field’s scholarship and the actual work of the field. For example, Bay et al. conclude with the demand that “programs must evolve to meet these new challenges. ... Meanwhile, we cannot afford to continue teaching traditional forms of technical communication to our students,” without consideration at all that the “traditional forms” of technical communication are still being used daily in a multitude of fields. The disconnect between the “findings” and the world of work highlights that the original question being investigated may not have been the best question. In other words, the better and more important question should have been, “How can programs and faculty shift existing curricula to better suit the needs of working engineers or how close does existing curricula match the expectations of working engineers?” Either of these questions would have produced a more focused study that offered more usable results.

Similarly, Arduser’s study represents a potentially impactful approach but one which fell short of its potential because it focused its interviews so narrowly on a problem that would have been more effectively framed in a different way. In other words, rather than interviewing the different stakeholders to determine what the program could do for them, the question could have been flipped to ask how the current courses could support their needs. While not a
large shift, it is an important semantic change with the focus not on service in the negative sense, but rather with the focus in the positive way of how the expertise offered within technical and professional communication can improve other programs. This is an important orientation for both research questions and research study design.

Improved questions with more diverse and mixed methods approaches help to ensure we are getting answers to the questions we need answered. For example, Sarah Read and Michael Michaud, in this issue, provide an interesting view of who is teaching in the service course, but as noted, the limitations of their instrument make it difficult to generalize their results or to even use them beyond a data point to build on. Indeed, surveys in general may not be the best method for the actual questions technical and professional communication needs answered. That is, while Read and Michaud’s study helps us to understand who is teaching these courses, 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.

Further, we need to select the best method for answering (i.e., collecting the data needed to answer) the questions we do ask. It is ironic that in technical and professional communication, where the majority of empirically-based research is based on surveys, we have done little specific work to understand the theoretical dimensions of survey research (Meloncon & St.Amant, in press). In the few books devoted to research within the field, the information on surveys is limited to generic discussions of the how to conduct research using surveys (Hughes & Hayhoe, 2008, pp. 95–106; MacNealy, 1999, pp. 148–172; Murphy, 2002, pp. 93–110) rather than fully understanding the “when” and “why” one would use a survey (which has traditionally been when you want to gather large samples of data to produce generalizable results). As Michael Hughes and George Hayhoe (2008) note, however, “unless correctly designed, implemented, and analyzed, a survey can result in a botched opportunity at best or a misrepresentation of a population at worst” (p. 95). In both cases of the surveys in this issue, different methods—outside of the survey—would have generated richer data that was better contextualized and would offer more information to the field. In short, surveys are being overused—and often used in place of interviews, focus groups, or other forms of qualitative data gathering that would most likely answer the question(s) better.
Participant Recruitment

To follow a better research study design, researchers need to take the important step of determining who is the best sample for their question. An important aspect of research study design, and one that illustrates one of the current problems in the field’s research, is participant recruitment. When I use participant recruitment, I am referring to finding the right people to help you answer your research questions.

Here are some things that we need to know as the foundation of the field’s knowledge infrastructure about the service course. First, there are actually three distinct kinds of service courses based on institutional settings:

- those where there is also a technical and professional communication program;
- those where there is no technical and professional communication program;
- those found at two-year colleges.

Constraints of the focus of this piece limit a detailed overview of what some of the differences are. In general, the aims of the service courses are typically different, and more importantly, how they are administered and the administrative “philosophies” are also typically different. In addition, there are also different types of institutions that also bring with them differences in the service course. For example, large R1 programs like mine have an issue of scale because of the number of courses offered, but it is possible that all institutions still have the same issues of providing professional development. Our organization, CPTSC, does have a master list of programs in the field, as well as a calculated representative sample of institutions that offer the service course but do not have a degree program. Thus, when embedded within the field and being part of those conversations, one would know where to start to gather better and more usable data. No matter the question, care needs to be made when designing a study to ensure that participant recruitment (institution type and where there is a technical and professional communication program) matches the overall goal of the research study.

Rather than immersing themselves in the field and understanding the landscape of the field, most researchers are quick to take the path of least resistance, which is seen in the two survey-based entries in this issue (and also to a lesser extent in Arduser’s entry). In the case of the
surveys in this issue, as well as any number of studies published in the recent past, that path of least resistance is to use listservs (which are easy to access) to recruit participants. Unfortunately, the listservs in technical and professional communication are not representative of the field’s instructors, nor are they representative of the types of programs in technical and professional communication.

The self-enrollment process that results from recruiting subjects via listservs in the field means those enrolled do not represent the largest majority of institutions that house technical and professional communication degree programs. For example, the majority of programs are located at Master’s Large Institutions (see http://carnegie-classifications.iu.edu/ for information on Carnegie classifications) while the majority of those enrolled on the two listservs in the field (ATTW and CPTSC) are primarily at research institutions. Thus, if a researcher is soliciting participants for anything teaching related, the resulting sample is inherently skewed in ways such that the data is no way generalizable and its usefulness is severely compromised. The resulting convenience sample is simply that—convenient, and it is convenient in a way that does not provide insights that are indicative of the realities of the field or that can be applied by or acted upon by most other programs in the field. As Daniel J. Murphy (2002) so aptly puts it: “To have confidence in your inference, it is important to ensure as much as possible that you have used a representative sample for findings to be reliable and valid with respect to the ‘true’ nature of the population” (p. 98). Without a representative sample and one that can be replicated in the future also means we are unable to build on existing research and determine trends of changes. In sum, no new knowledge—that which can be known, tested, validated or refuted, and acted upon—has been created. So what then is the point of the endeavor?

This leads us then to considerations of different types of research such as multi-institutional research and different types of pedagogical research. Both of which are discussed in the next section.

**Research Involving Different Approaches**

The field must move beyond the single-classroom or single-program study. Many of St.Amant’s questions in his contextualized course design approach can be flipped into important research questions that need to be investigated across institutions. For example, Veltsos and
Patriarca’s (2017) project occurs across two similar institutions, and their work intersects in important ways with another multi-institutional project (Shreiber, Carrion, & Meloncon, 2017). Both of these studies are moving toward a programmatic model that considers new ways of sustaining programs and calls for greater reliance of field-wide data to make more informed programmatic decisions (Schreiber & Meloncon, in press). These types of multi-institutional studies need to be thoughtful about their constructions. Multi-institutional research should either focus on collaborations between similar institutions for the purpose of building a rich repository of data that can then be studied as a corpus or they need to focus on similar kinds of courses or conditions to answer field-wide questions that we are unable to answer at this time.

For instance, Teena Carnegie’s entry in this issue, although based upon a strong longitudinal design, still does not offer a completely persuasive research-based case for service learning in the service course outside of programs that are similar to the program at Eastern Washington University. The care and attention of incremental and ongoing changes is an important aspect of the type of research-based programmatic work the field needs to be doing. However, the work presented in Carnegie’s entry still leaves many questions and gaps unanswered. What is surprising to me is that when there are a number of institutions incorporating iFixit projects into the service course, no one researcher or institution has taken the much-needed step to compare and contrast localized data to provide a field-wide view that could potentially improve instruction and work toward more sustainable pedagogical practices across the nation.

Another area where we need to improve our research practice is to consider different types of approaches to pedagogical research that moves us beyond teacher-research to more “objective” approaches such as control studies that do not involve students in the teacher’s own class. This model, which has been adopted from scholarship of teaching and learning (SoTL) and is prevalent within composition scholarship, does not adequately capture the complexities of the subject of technical and professional communication. This kind of work represents what I call, “look what I did in my class” research, and can provide few insights locally and even less externally. There are many common programmatic and pedagogical problems and concerns that could benefit from a more field-wide view. Recent research has
moved toward trying to provide this view with varying degrees of success (cf., Chong, 2016; Schreiber & Meloncon, in press). But without this sort of field-wide view, one gets the problematic conclusions found in Bay et al. and Carnegie, or one gets research that that could have been more (Arduser). Reflecting on our own practices is necessary if we are to gather pedagogical and programmatic data that can help the field grow, improve, and sustain programs.

**Understanding the impact of labor practices**

Finally, the field also knows we have our own labor problem because the service course is still taught overwhelmingly by contingent faculty who are contractual, full-time, non-tenure track (the largest segment), term-to-term adjuncts, or graduate students (Meloncon, Mechenbier, & Wilson, in press). It was disappointing not to see an attention to, or even more than a sentence mention, of labor conditions. No future discussion of the service course can occur without an intensive and specific attention to labor and labor conditions because any discussion we have about pedagogical practices has to consider the fact the majority of those contingent faculty also do not have a background in technical and professional communication and even fewer have ever had a course in teaching technical and professional communication (Meloncon, Mechenbier, & Wilson, in press). So, for example, if we consider Bay et al.’s call to invoke a different theoretical orientation or approach—what they call “entrepreneurial thinking”—how does one implement this in a program? The fact remains that, in a large number of programs, we have not even managed to successfully integrate a critical attention to rhetorical concepts (see pedagogy section) evenly and uniformly.

While this is something of a rhetorical question, it needs to be parsed out a bit so that we have a better understanding of the complexities of labor within our programs. There is no way I could implement Bay et al.’s suggestion or Carnegie’s approach to service learning within the service courses at my institution. Even though I typically never invoke my n=1, my institutional setting is important as a microcosm—even if on a larger scale—to the labor problems (and pedagogical problems) within the field. My institution serves around 4800 students a year in three different versions of the service course. It is 95% taught by contingent faculty, and the vast majority of the instructors have no background in technical and professional communication (academic or professional).
Attempting to scale Bay et al. or Carnegie’s approach at my institution would be an unmitigated disaster simply because we do not have the resources or the institutional support structures to provide the type of professional development necessary for instructors should they want to incorporate either of these approaches. Even though on the surface, this sounds like a direct criticism of the instructors and my institution, it is not. It is simply, sadly, the current state of affairs in higher education—and these problems have been around much longer than any austerity measures that happened after the economic collapse of 2008. Any consideration of changes to the service course must start with the questions: how will this impact contingent faculty in the program? and Does the institution have the support and infrastructure to provide adequate compensated professional development for contingent faculty to learn and practice curricular or pedagogical changes? If a technical and professional communication program administrator and tenure-line faculty cannot adequately answer these questions then changes and shift to curricula need to be reconsidered.

Any suggestion of any change in teaching the service course must start with an understanding of the material work conditions of those faculty who teach it. Unfortunately, this factor is not adequately addressed in this special issue in large part because of the limitations of the study designs. Without understanding the material work conditions, which are the “day-to-day working conditions of faculty, such as teaching loads and institutional support” (Meloncon, England & Ilyasova, 2016, p. 209), of faculty who teach these courses, we stand little chance of ever improving them. And all the grand plans of integrating new theoretical models, such as that offered by Bay et al., will potentially work until they have to be scaled across a multitude of sections with committed faculty who unfortunately have little background in technical and professional communication. Material work conditions also come into play as seen in Arduser’s entry where the addition of another “specialized” service course simply means hiring another contingent faculty member without due consideration of the perpetuation of the labor problem and simultaneous problem of undermining the field’s own expertise as researchers and teachers.

The point of including a distinct section on labor conditions is that absolutely every conversation about the service course from future research on the course, to training teachers to what pedagogical approach to use, must first and foremost consider explicitly issues of material working conditions and labor.
Building a Programmatic Perspective
When I started my own programmatic research trajectory, I did it with an eye toward both a macro- and a micro-understanding or programs. By macro, I directly follow Ken Rainey (1995) when he lamented that most curricular research is self-centered around a local context, but that in most situations the questions raised were always about whether programs should be doing this or offering that (p. 54). My goal when I started was to move outside of local contexts so that technical and professional communication program administrators could answer broader field-wide questions, while still attending to the local —the micro—situation. The service course is a rich site for the field because it can give us insights at both the micro- and the macro-level. We have to become meta-reflective to examine our own processes, and the service course provides us the perfect site to do many aspects of that reflection.

Many years ago, M. Jimmie Killingsworth (1990) lamented, “Information on service teaching seems to have drained out of our journals” (p. 38), and unfortunately, that is still true. Even though scholarly attention to the service course may have drained from our journals and collections, technical and professional communication program administrators and faculty have always been consistently and acutely aware of the service course. I believe we fail to do research on the service course or more rigorous studies of curricula because we are simply too busy doing the job of administering and working in programs. Also, as I have noted here and in numerous presentations, good, thorough curricular research is hard because it takes an inordinate amount of time from designing the study to gathering the data to writing it all up. It is painfully slow and requires meticulous attention to detail to make the results worthwhile. Recognizing the immense and intensive time investment (that in most cases cannot be met because of systemic problems in the ways—both real and perceived—faculty are evaluated), I still stand by my assertion that we have to do better research. This will be the only way to determine what is a better method for teaching the service course, and it will be the only way to determine solutions, both large and small, to the field’s ongoing labor problem.
Critical Postscript

I am hopeful that this special issue will serve as an impetus to bring the service course into broader discussions of what the field values and what it does, and becomes the focal point for future research endeavors. Because in reading these essays carefully, I do appreciate the rich avenue of potential questions that they open for the field.

Some examples of the types of problems or questions that researchers should pursue are

- **Alignment of our classroom practices to workplace practices taking into consideration the fact we, as academics, have knowledge about skills that is equivalent to those of practitioners.** Questions of transfer are most needed, particularly about the service course. Research studies that investigate how well, or not, students (not our own students) perform on the job in close proximity after they take the service course can shed light on pedagogical approaches.

- **More in-depth work on the alignment of assignments to workplace practices as well as a consideration of outcomes.** We have so little work from a field-wide perspective that programs are at a disadvantage without this type of data-driven work.

- **Studies that focus on the difference between courses** (following Patriarca & Veltsos, 2017; Schrieber, Carrion, & Meloncon, 2017). Attention needs to be paid to specific questions around stakeholder views as they compare to our expert perspectives. In addition, comparing across institutions with keen attention to similarity in gathering data will provide insights that can be applied across the field.

- **Studies that look more in-depth at assignments across the field in the current different kinds of courses.** Beyond gathering this data, we need qualitative work with technical and professional communication PAs and faculty to understand how assignment decisions were made to gain insights into the overall approach to designing and teaching the service course and other “core courses” within the curriculum.

- **Control-group studies that try out different pedagogical approaches and then attempt to scale those approaches across multiple sections (and then different institutions).** Innovative teaching approaches to the course itself (studying in detail what happens when we shift our generic approach and ways to train faculty in other methods).
• **Studies on feedback.** Two new, innovative studies (Doan, in progress, and Singleton, 2016) seek to understand better with actual empirical evidence the feedback practices of instructors in the field and whether or not the existing practice of individualized feedback can be altered without impacting student learning. There are other questions as well such as understanding feedback practices in the workplace, working toward alternative methods, and delving into the efficacy of peer review as a strategy to name but a few.

• **Research on the outcomes of the service course, other courses in technical and professional communication, and for programs themselves.** While understanding and taking seriously the criticism of outcomes (e.g., Gallagher, 2012), the field cannot escape their importance in institutional initiatives (such as assessment) and the role they should play in curricula. However, we have little understanding of outcomes at the field level. The information presented above is from a pilot study focused on the service course, and there is an initiative within CPTSC at the programmatic level, but much more work needs to be done.

• **Additional research on contingency and its impact on our programs.** The forthcoming project on contingent faculty in the field answers many questions with a great degree of context and generalizability, but it also opens up a whole series of questions such as should there be minimum educational and experience (teaching and industry) requirements for instructors? How is the best way to provide ongoing and useful professional development opportunities for all faculty, most particularly contingent faculty? How can we begin to address and more importantly minimize our reliance on contingent labor? Is there an impact (as found in other fields) on student learning in courses and programs with a high use of contingent faculty?

I do not want to rehash the power and legitimacy arguments made in the past (for example, see St.Amant & Meloncon, 2016; Spilka, 2010; Sullivan et al., 2003), but I do want to end with the idea that if we are not willing to do the research to have the data that we need to argue for our disciplinary knowledge and distinction, then we deserve what we get. Even when we are mandated to do more with less, we still have the opportunities to insert our own beliefs and knowledge into the work we do. We often forget that we have more power than we think.
we do. We have an expertise, and we should start every consideration, particularly of the service course, with that understanding and then move out from there.

As technical and professional communication PAs and faculty, we are the makers of our programs and courses and to that task we do bring our own knowledge, but we need to match that knowledge to the various communities we serve. An indisputable fact is that the future of technical and professional communication programs is directly and intimately connected with the future of the service course. It is past time for the service course to become a designated focus of our research and attention.

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1 Many of the ideas presented here are based on a longitudinal research study, *Putting Technical and Professional Communication in its Place: A Curricular History*. That study is in the final phases, and pieces of it have been published or are currently in review. There is not enough room to fully discuss the methodological orientation and study design, but I am happy to any questions any one may have. (One can find a partial overview that provides additional information at tek-ritr.com or can contact me at Meloncon@tek-ritr. com to ask more about this study.)

The information about labor is part of a separate (yet related) national study that is in process and is under something akin to an advance contract at the journal, *Academic Labor*, for publication later this year, but several pieces on labor that is specific to the service course have already been published (Meloncon & England, 2011; Meloncon, 2014; Meloncon, England, & Ilyasova, 2016; Meloncon, 2017). My data on faculty and programs directly refutes several of the points offered by Read and Michaud, and Francis, differences which are likely based on differences in the research study design, and afford the field an opportunity to have richer and more data-driven conversations.
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Service Courses as an Extension of Technical and Professional Communication Disciplinary Identity

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Workplace communication practices and technologies have fundamentally changed since the initial development of technical and professional communication service courses. These changes include such things as social media use and adaptation in the workplace (Pigg, 2014), shifting market and customer expectations (Porter, 2010), global partnerships (St.Amant & Flammia, 2016), shortened product development cycles (Schreiber, 2017), new strategies for content development and dissemination (Andersen, 2014), and increased public participation (Luzón, 2013). Similarly, new technological affordances affect a range of issues and practices from project management to social justice initiatives (Ding, 2013; Spinuzzi, 2015; Walton, Mays & Haskelkorn, 2016). These changes can be discipline or industry specific but can also indicate broad trends. As Jason Swarts (2008) explains, these technological and workplace changes indicate increasing and evolving writing practices in the workplace, and, as Michael Salvo (2004) has argued, digital contexts and architectures require critical rhetorical engagement. Further, these advancements also afford the opportunity for disciplinary experts to directly disseminate knowledge and participate in knowledge creation in the public sphere (Gross & Buehl, 2016), to effectively facilitate risk and disaster response (Potts, 2013) and to advocate for change (Edbauer, 2005; Keränen, 2014).
Because technical and professional communication researchers explicitly and regularly engage questions related to this state of ongoing change, service courses need to be more closely aligned with technical and professional communication disciplinary values than ever before. The kinds of exigencies discussed above present pedagogical challenges, to be sure, but also social challenges. That is, technical and professional communication, as a discipline, should not only prepare students to meet the communicative demands of their respective workplaces and improve those practices, but also prepare students to successfully engage in these knowledge-making practices in the public sphere. In the context of such lofty goals, the articles assembled in this special issue collectively illustrate global and local tensions that affect the content and pedagogies of the courses and also raise important challenges for technical and professional communication as a field. At the heart of these tensions are the issues of disciplinarity and sustainability. In using the term disciplinarity we refer to, as Carolyn Rude (2009) delineated, questions related to “our definitions, history, status, possible future, and research methods” (p. 176). This tension also encompasses how we define expertise in the field and, by extension, who possesses it. We agree with Robert Johnson’s (2004) argument that “to sustain means to think and act, to contemplate and practice” (p. 102) and that disciplinary identity and growth, including programmatic growth, ought to be seen through the lens of sustainability. In other words, the term sustainability implies a continuous relationship between growth and limits that requires constant reflection. The programmatic feature we are examining—service courses—contributes to the sustainability of programmatic, and thus disciplinary, identity at both an institutional and cross-institutional level.

In this afterword, we take up the interrelated issues of disciplinarity and sustainability in order to guide suggestions for technical and professional communication researchers, teachers, and administrators as they critically implement and build from the central ideas and models advocated in these entries. We argue that in order to build both sustainable approaches to service courses and a sustainable technical and professional communication disciplinary identity, future research should carefully examine the nature of the expertise brought to bear by technical and professional communication service course instructors and students. We suggest that doing so can help to redirect
Service Courses as an Extension of Technical and Professional Communication Disciplinary Identity and Values

Service courses present a unique challenge for technical and professional communication disciplinary identity. On the one hand, technical and professional communication is often given little attention by disciplines within the humanities (Meloncon & England, 2011). On the other hand, technical and professional communication has grown so quickly that the same disciplines that fail to recognize the importance of technical and professional communication as its own field are nevertheless the disciplines (e.g., literature) from which technical and professional communication service course instructors are often recruited (Kimball, 2017; Meloncon & England, 2011; and Meloncon, England, & Ilyasova, 2016). To add further complication, technical and professional communication scholars must grapple with explaining to the disciplines served in these courses that they offer something different from literature or composition.

Like it or not, though, service courses are highly visible extensions of technical and professional communication’s disciplinary identity. They are often more visible than programs and are probably the most visible entities that other disciplines and administrators across institutions associate with technical and professional communication. This visibility poses both challenges and opportunities for technical and professional communication in terms of building productive relationships with other disciplines and promoting technical and professional communication values like ethical and accessible communication practices.

There are, of course, challenges to effectively promoting technical and professional communication values in service courses. Because technical and professional communication service courses preceded the inception of technical and professional communication as a discipline in its own right, other stakeholders, both inside and outside the humanities, have long been involved in curricula. For example, though
Service Courses as an Extension

technical and professional communication has grown (Meloncon & Henschel, 2013; Meloncon, 2018), it is still much smaller than other disciplines that often teach service courses, namely composition and literature (St.Amant & Melconcon, 2016), and the disciplinary values of these fields do not always align with those championed in technical and professional communication. As the entries in this special issue have shown, these challenges are further buttressed by the technical and professional communication service courses’ need to address complex local and institutional needs as well as to represent the broader field. As such, technical and professional communication needs to find ways to address service courses across programs and to develop strategies that address local needs while maintaining the broader identity, goals, and values of the discipline.

Building from the Special Issue Entries

The entries in this issue offer a foundation from which to develop such strategies. However, while many of these strategies enable technical and professional communication service courses to better meet the needs of their external stakeholders, both academic and professional, they also point to tensions with regard to disciplinarity and expertise, and they raise important issues with which the field must grapple. Lisa Meloncon’s critical postscript calls upon researchers to embrace the messiness of technical and professional communication programmatic research to build better data and for administrators to demand better data when making curricular decisions. Looking at the entries in this special issue collectively, there are several places to build in terms of research and in best practices for teaching and program administration.

Building institutional models into disciplinary models. The entries from Teena Carnegie and Kirk St.Amant provide a glimpse of the critical care required to effectively build and maintain service courses from a technical and professional communication disciplinary perspective at the program and institutional levels. Technical and professional communication researchers need to look to Carnegie’s entry as a touchstone for developing models to be used across programs. Carnegie illustrates what long-term care and reflection can look like for service courses in programs from an administrative perspective. How can our field foster best practices for this kind of sustained care? What might a multi-institutional study of these practices yield? We recom-
mend administrators also look to Carnegie’s entry for an important example of what sustained care, development, and refinement of the service course looks like over time.

St. Amant’s model for contextualizing and refining the service course to meet unique institutional needs illustrates the complexity of stakeholders at a single institution. St. Amant’s local issues may play out in different ways across institutions, but the model he has developed, we think, importantly highlights the power and disciplinary dynamics at play around service courses at the institutional level. Researchers and administrators can apply this model at multiple institutions in order to develop programmatic data that could contribute to effective global practices. How might St. Amant’s model be applied across institutions and how might a disciplinary perspective further complicate contextualized course design? One way might be by aligning with programmatic sustainability models, such as Joanna Schreiber and Lisa Meloncon’s (in press) Gather-Read-Analyze-Make (GRAM) model.

**Building with disciplinary stakeholders.** If developing best practices in teaching and administering service courses will ultimately come from promoting the values of the field, such questions must be central to our programmatic research, and resulting development, moving forward. Jeff Grabill (2006) argues for critically engaging descriptive studies, and administrators use this research as a way to build professional development opportunities for those teaching service courses so that the course aligns with the values of the field. By looking at Sarah Read and Michael Michaud’s, Ann Marie Francis’, and Lora Arduser’s entries together, questions emerge about disciplinary stakeholders. Each of these articles offer us important perspectives on what is currently happening in service courses and thus provide both researchers and administrators opportunities to build from these studies in ways that advance technical and professional communication pedagogies and practices.

Read and Michaud’s study of service course instructors illustrates that many instructors lack technical and professional communication backgrounds, and Francis’ entry critiques multimodal projects as not aligning with engineering writing practices. These two entries prompt questions about the extent to which service courses align with technical and professional communication values, scholarship, and best practices. If instructors without technical and professional communi-
cation backgrounds are teaching the course, surveying and testing current assignments does not necessarily test technical and professional communication pedagogies. To build from these entries, the central questions for technical and professional communication researchers and program administrators become about how to widely test and refine technical and professional communication pedagogies. Such an approach would position service courses to rely on and test technical and professional communication pedagogies, which are built from the study of workplace practices, rather than to treat other disciplines, both inside and outside the humanities, as expert in course content.

Likewise, Arduser explores how specialized technical and professional communication service courses can be developed in collaboration with other departments to better serve discipline-specific needs. Such an approach offers a promising avenue for growth but also illustrates the double-edged sword of designing discipline-tailored courses; while this “multidisciplinary” tag can be beneficial, it can also create confusion in terms of disciplinary identity and visibility on campus and may serve to create further distance between technical and professional communication instruction and its disciplinary foundation and values. Further, administrators and researchers might ask how well increasingly specialized courses prepare students to meet workplace expectations of communicating across function and expertise as part of diverse teams and global enterprises.

**Building new pedagogies.** Building from the descriptive research provided by Read and Michaud, Francis, and Arduser can help technical and professional communication researchers and scholars critique and advance existing technical and professional communication pedagogies and develop new pedagogies that align with emerging workplace practices. Jenny L. Bay, Richard Johnson-Sheehan and Devon Cook’s entry provides us with one such example. By embracing niche economies and entrepreneurial practices, their pedagogical method provides an alternative to more traditional genre approaches described in technical and professional communication textbooks. Their entry also serves as a model for taking advantage of institutional opportunities by effectively aligning with the startup culture cultivated by their institution, which may be an important component for applying institutional models across programs, such as St.Amant’s. Technical
and professional communication researchers and administrators might ask: How might Bay, Johnson-Sheehan and Cook’s approach be applied across programs and what other new pedagogies could meet the needs they identify?

**Conclusion: Service Courses as Foundations for Sustainable Programs and Impacts**

Addressing service courses as an extension of the technical and professional communication discipline is also to position service courses as part of a larger conversation about technical and professional communication disciplinary identity and sustainability. We have made this argument for three reasons. First, many of the issues of disciplinarity and expertise discussed above are directly related to the fact that the discipline’s growth has not always been matched by a strategic vision for the training and placement of technical and professional communication faculty and programs. Second, the potential of technical and professional communication’s positive impact on academic, workplace, and social practices is limited by the field’s—and its attendant scholars’—ability to meet university and student demand. Third, we wish to position the entries in this special issue, and work building from these entries, as part of a larger conversation about technical and professional communication programmatic and disciplinary sustainability.

Technical and professional communication scholars have already begun to address the sustainability of technical and professional communication growth from necessarily linked disciplinary and programmatic perspectives. For instance, well over a decade ago, Robert Johnson (2004) called for sustainable approaches to growing technical and professional communication programs and disciplinary identity, arguing that sustainable growth required both “maintenance and reflection” (p.102). In other words, the growth in our programs that continues to affect disciplinary identity and requires critical reflection beyond individual programs. More recently, Schreiber and Meloncon (in press) have built a model that acknowledges the many relationships across programs and with the discipline—including course to program, program to program, program to institution, and program to professional field—that must be tended to in the development and design of courses, curricula, and professional development. Their model, GRAM, is designed to help individual programs address local needs and align with larger field-wide concerns. The service course,
we argue, is central to these questions of sustainable programmatic growth and sustainable disciplinary identity.

Ultimately, building sustainable programs and a sustainable disciplinary identity must include building better data in terms of methods that embrace the messiness of technical and professional communication programs as Meloncon suggests in this special issue and that critically engage descriptive research, as Grabill (2006) has advocated. Further, the discipline must commit to critically cultivating service courses as visible extensions of the discipline, a discipline that builds important knowledge and pedagogies that can serve other disciplines well. Technical and professional communication scholars (e.g., Kimball, 2017) have also argued that because the importance of technical and professional communication practices have grown across professions, our discipline ought to be taking a bigger role in shaping areas like Writing Across the Curriculum (WAC) and first year writing programs. However, as Miles Kimball observed, the service course has often been taught by other disciplines and inexperienced teachers so that those with technical and professional communication backgrounds can build programs at undergraduate and graduate levels, arguing “the service course becomes something we think of as a support to the professional program, rather than as an end in itself” (Kimball, 2017, p. 348).

The ambitious scope of the technical and professional communication field in shaping workplace and public practices is necessarily ambitious. That is, in the introduction to this special issue, we described the complexity of practice and the role technical and professional communication scholarship has carved to go beyond teaching existing practices to critically examining and shaping them. This practice includes promoting participation in technical- and scientific-knowledge making, including diverse audiences, and improving product and workplace safety, among other things. In other words, technical and professional communication scholars are busy doing good and important things, but those things have decreasingly included teaching and attending to the service course.
If we agree with Kimball that service courses have become more important as our discipline has grown, it is important to engage in the critical reflection and maintenance to push technical and professional communication toward sustainable practices as Johnson (2004) suggests. Technical and professional communication needs to be a more active participant in the service course, beginning with promoting programmatic research that can help administrators and teachers to address local needs from a disciplinary perspective. The re-situation of the service course as central to programmatic growth and sustainability also requires, as Meloncon discussed, examining and reshaping the labor practices that have become commonplace in technical and professional communication as a field and the departments in which technical and professional communication programs are housed. From there, we argue, technical and professional communication is best situated to truly take up challenges posed by Rachel Spilka (1993), Ella Browning and Lauren Cagle (2017), and others to effectively shape and improve workplace practices.
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