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Introduction to Special Issue on Programmatic Research

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Programmatic Perspectives has always been a space in which to discuss issues particular to academic scientific and technical communication program administration. This special issue on programmatic research explores the intersection of research and programs, and it strives to do so in ways that reflect the diversity of the field. As well, this special issue provides a touchstone in terms of the evolution of programmatic research in technical and professional communication. In 2009, Bruce Maylath and Jeffrey Grabill articulated an overview of the accomplishments of CPTSC over its then 35-year history. That article described the origins of CPTSC’s research grant program and the beginning of Programmatic Perspectives, and it’s our hope that this special issue will support the continued development of those two important aspects of CPTSC. As stated in the original call for proposals, “This special issue will focus on approaches to and applications of programmatic/program-based or focused research in the field in order to enhance our understanding of and perspectives on programs.”

Yet as guest editors of this special issue, we found ourselves confronted with one fundamental question: What counts as programmatic research? One of the tensions present in this question is a definition of “research.” For example, we might think of “research” as systematic, methodologically-driven data collection that addresses a specific research question or hypothesis and is intended for scholarly publication. Research articles of this sort carry expectations about methods, analysis, and ethical treatment of data involving human participants. However, assessment is another important form of programmatic research, which may involve...
local or global evaluation of student work, curricular outcomes, and perceptions of programmatic value (see the CPTSC white paper on TC Program Assessment by Tammy Rice-Bailey for an excellent overview). Certainly, program administrators consider assessment a form of systematic, empirical data collection that would count as research. What, exactly, do we mean by “programmatic research”?

Our perspective on this question is informed by the insightful contributions to this special issue. We suggest that there are different types of programmatic research that are equally valuable to administrators of academic scientific and technical communication programs, and we have organized our special issue around them. For example, the Articles in this special issue report findings from completed empirical studies that address issues pertinent to programs. Program Showcases highlight uses of systematic assessment data to inform unique programmatic emphases and directions for program growth. And Commentaries offer suggestions for research methods and approaches that might positively influence program development. In any case, we believe that Programmatic Perspectives welcomes discussions about programs that are informed by and/or driven by research. As such, this journal holds a special place in technical and professional communication that emphasizes the intersection of research and program administration.

We received many proposals for this special issue, and choosing which ones to accept was not an easy task. Our end goal was to publish the results of research, so we gravitated toward work that presented a research methodology appropriate for programmatic issues and that presented data (qualitative or quantitative) as evidence of the usefulness of the research methodology. What follows is an overview of the contents of this special issue.

Nancy Coppola, Norbert Elliot, Faye Newsham and Andrew Klobucar reviewed program assessment models and introduced a Design for Assessment (DFA) framework that emphasizes accountability. They applied the DFA framework to a case study involving surveys of program alumni about valued competency areas in curriculum and on the job. They presented a rigorous and informed approach to assessment that will help program directors make decisions.

Chris Lam, Mark Hannah, and Erin Friess analyzed social media data about technical communication topics and argued that such data may supplement other program metrics like enrollment and graduation rates. The authors described archival methods (Twitter Archiving Google Spreadsheet/TAGS) for collecting and analyzing language data such as
Twitter. Using Twitter data relating to technical communication topics, they explained uses of AntConc to analyze word frequency analysis, concordance analysis, and collocation analysis. They applied findings from their Twitter analysis to three types of programmatic decisions: assessment, vision, and curriculum. Their article demonstrates how social media data and analysis can insightfully inform programmatic decisions.

Susan Popham presented a qualitative study of African-American women in a graduate master’s program in technical communication. Noting the current lack of African-American students in technical communication programs, she argued that we should actively explore ways to shape our programs to better appeal to African-American students. She used positionality theory to identify three areas of power in which African-American women felt power or felt the lack of it in their technical communication programs. Ultimately she illustrated the need for programs to recognize unique needs of minority students in technical communication programs.

Scott Kowalewski and Bill Williamson discussed the evolution of a professional writing program focus on usability and user-centered design, based on years of program assessment data. Their Program Showcase not only argued for the value of a usability focus, but it also argued for an integrated assessment approach. They demonstrated how this focus on usability helped their department establish itself on campus, noting that usability studies connected their department well to its campus and community.

Rebecca Walton, Jared Colton, Krista Gurko and Rikki Wheatley-Boxx shared interview data from community-based clients and students based on classes they teach and changes they have made to incorporate a social justice theme. They showed how a social justice emphasis fit their university, and they argued for other programs to consider it. Further, they reported that their social justice emphasis is informed by and continues to inform programmatic research at their institution. As an example, their Program Showcase in this special issue is informed by an on-going empirical study of student and community partner engagement in social justice courses and projects.

Heidi McKee showed how assessment data such as enrollment data, qualitative surveys of students, and curricular assessment informed program decisions at Miami-Ohio to close a low-enrolled Scientific and Technical Communication (STC) degree and create a Professional Writing (PW) degree, all within an English Department. The change resulted in great success and dramatically increased numbers in the PW degree
program. She described a process and rationale that could help administrators with new programs, those within English departments seeking to create new programs, and those wondering what to do about low-enrolled STC programs.

John Spartz and Julie Watts discussed the importance of external advisory boards to technical and professional writing programs. They advocated participatory action research (PAR) as a research method that can extend traditional forms of program assessment to include external advisory boards. In addition, they illustrated how PAR can be integrated with existing forms of program assessment such as portfolio evaluation, and they offered suggestions for integrating external advisory boards in regular program assessment.

Denise Tillery and Ed Nagelhout advocated a student-centered assessment approach designed for flexibility in their undergraduate professional writing minor program at University of Nevada-Las Vegas. Their assessment approach emphasized “knowing why” over “knowing what,” and it integrated elements of the National Writing Project “habits of mind” (creativity, persistence, risk-taking, mindfulness, and engagement). Their dynamic assessment approach is flexible and designed for situated learning and continued study beyond the undergraduate minor; they advocated learner control and involvement in assessment.

In sum, the focus of this special issue carries the theme from the 2015 CPTSC conference, “Programmatic Research,” and we hope it inspires readers to continue conducting research that improves programs in technical and professional communication. This special issue also serves as a transition in Programmatic Perspectives editorship. As editors of this special issue, we are grateful to the leadership provided by former editors Tracy Bridgeford and Kirk St. Amant. We also extend our gratitude to Karla Kitalong and Bill Williamson, who founded the journal with Tracy Bridgeford in 2007. And we look forward to the leadership of editor Susan Popham, who will continue the important work of this journal into the future.

References


Programmatic Research in Technical Communication: An Interpretive Framework for Writing Program Assessment

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Abstract. Important advances have been demonstrated in the assessment of writing programs. In this paper, we identify an application of programmatic research based on an accountability framework for writing program assessment. A form of relational modeling that allows a postsecondary institution to identify and fashion the variables that impact the writing program, the application is termed Design for Assessment (DFA). To demonstrate its benefits, we review contemporary views of program assessment, explicate the interpretative features of the framework, and describe a case study application. We close with heuristic questions for program assessment attentive to stakeholder contributions. A postscript from the current program director at our institution provides a reflective statement on the need for evidence-based responsiveness in writing program design.

Keywords. Design for Assessment (DFA); empirical methods; program assessment; technical, scientific, and professional communication; variable modeling

“What gets measured gets done.” This management meme is often passed around an organization when it is time to make decisions about company performance, value, or worth.

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Higher education is no stranger to this maxim as its institutions must find ways to measure, monitor, and validate the college experience. We need look no farther than the performance ratings of post-secondary institutions provided by the United States Department of Education College Scorecard (2016) for evidence of a system that takes into account access, affordability, and student outcomes. In post-secondary education, the Every Student Succeeds Act (ESSA, 2015)—the most recent re-authorization of the Elementary and Secondary Education Act signed into law in 1965—allows states to develop their own college-and-career-ready standards to assess student performance. So radical is this legislation that it forbids the Secretary of Education to coerce the states to adopt the Common Core State Standards Initiative (2016) or assessments tied to them (ESSA, 2105, SEC. 1111, j, 1). ESSA legislation will require teachers and administrators to have an even more sophisticated grasp of assessment metrics and meanings to provide required information about the performance of their students. A promising signal for localism, contextually-based accountability is critical to all of us who contribute to measuring, monitoring, and validating writing program value.

Doubts nevertheless remain: Are we hitting the target but missing the point? In professional, technical, and scientific communication (hereafter referred to as technical communication), the target is small and errors are costly. The Bureau of Labor Statistics (BLS) reports that in 2014 there were approximately 52,000 jobs for technical writers with an above average projected rate of growth at 10 percent for the following year and a median salary of $69,030 per year (United States Department of Labor, 2016b). When compared to the 1,114,000 jobs for software developers at a 17 percent growth job outlook with salaries of $97,990 per year, we quickly realize that the decisions we make in educating our students have consequences for the existence and growth of our relatively small profession (United States Department of Labor, 2016a).

This article proposes an evidence-centered, principled approach for using program assessment research to guide curriculum development, administrative practice, program identity, and sustainable development. Termed Design for Assessment (DFA), the accountability framework is a form of relational modeling that allows a postsecondary institution to identify the variables that impact the writing program and to ecologically model the variables to increase student success (White, Elliot, & Peckham, 2015). Because assessment is a problem-solving activity within contexts that are complex, multifaceted, and contingent, the framework we present is designed to serve as a heuristic to create opportunity structures for students, instructors, administrators, and workforce leaders. With this
aim, our work may therefore be viewed as an extension of the Outcome Survey conducted by the Council for Programs in Technical and Scientific Communication for revising assessment both descriptively and analytically so that programs “improve our instruction and contribute to increased professionalism” (Barker, 2012, p. 206).

Our paper begins with a discussion of contemporary program assessment, with special emphasis on the creation and advancement of opportunity structures. We then turn to a brief exposition of the DFA interpretive framework and its evidential categories. To demonstrate the generalization force of the framework in terms of construct inference, we present a case study that illustrates the value of DFA in terms of empirical analysis of traditional and new variables driving the Master of Science in Professional and Technical Communication (MS∙PTC) at our home institution, New Jersey Institute of Technology (NJIT). To demonstrate the extrapolation force of the framework as it is extended to new construct domains, we offer a heuristic intended to encourage shared program responsibility among key stakeholders. In the postscript, the new program director discusses the sustainability of the DFA model and future directions for the graduate program—directions that hold implications for other similar programs in our field.

**Contemporary Program Assessment: From Accountability to Structured Opportunity**

How do we measure a program’s value? According to *The Program Evaluation Standards* (Yarbrough, Shulha, Hopson, & Caruthers, 2011) developed by the Joint Committee on Standards for Educational Evaluation, an educational program’s worth is best authenticated according to five key attributes of evaluation quality: utility, feasibility, propriety, accuracy, and accountability. The 30 standards, developed from the input of 400 stakeholders over six years, give us exemplary ways to collect program evaluation information that could demonstrate our program’s quality.

Yet many program leaders in our field would think of information presented in standards of any type as an ideal concept, an abstraction perhaps too standardized that fails to provide the unique pathways needed to provide assessment research for an individual program. Jo Allen’s important bibliography (1993) of technical communication assessment was the first work that moved our field beyond basic discussions of standardization to examine aims, criteria, and concerns. A more recent annotated bibliography (St.Amant, et al., 2015) demonstrates that program assessment has received our scholarly
attention, an observation confirmed by Tracey Bridgeford, Karla S. Kitalong, and Bill Williamson (2014) who note that “program administrators have benefited greatly from colleagues’ expertise [in program assessment] which is often gained through lengthy experimentation and trial and error” (p.12). Innovation aside, program assessment often remains a speculative chore accompanied by well documented faculty reluctance—the single biggest impediment to the adoption of systematic assessment of learning outcomes (Katz, 2010). Making program assessment more complicated and time consuming is often the result of a systematized metaparadigm and its resultant static methodology—in essence, bureaucratized default choices from a drop-down menu.

A corrective to this view of program assessment is gained from the perspective that the writing construct is best understood as “a complex social participatory performance in which the writer asserts meaning, goals, actions, affiliations, and identities within a constantly changing, contingently organized social world, relying on shared texts and knowledge” (Bazerman, 2016, p. 18). Writing assessment and the evaluation of programs that support it are both most meaningful when site-based and locally controlled (Broad, 2003; Gallagher, 2011; Huot, 2002; White & Wright, 2016)—an acknowledgement that each program is unique in its design and its barriers (Scott & Brannon, 2013). The Technical Communication Body of Knowledge (TCBOK) (2016) through its early development in 2007 (Coppola, 2010) to its redevelopment in 2012 (Hart & Baehr, 2013) has attempted to bring together our disciplinary core competencies as a codified collection of knowledge assets for the profession to be used in contextualized instruction and assessment of the writing construct.

Reflection on the TCBOK yields an important link between programs of research and program assessment. As is the case with theory development, programs of research need not be fully articulated by anyone, as Adam Morton (1980) observes. The key to consensus in a program of research is twofold: Those participating in the program must act as if the concepts refer to objective realities; and participants must act as if the possibility of increasing knowledge lies within the grasp of designated traditions, boundaries, and processes. Linking both concepts together is a single premise: as if. Psychometric theorists Frederic Lord and Melvin R. Novick (1968) long ago demonstrated the value of as if thinking to psychological theory itself. As they write, “[N]owhere is there any necessary implication that traits exist in any physical or physiological sense. It is sufficient that a person behave as if he were in possession of a
certain amount of each of a number of relevant traits and that he behave as if these amounts substantially determined his behavior” (pp, 358-359). While disarming, this notion of the hypothetical well serves those who perform research in communication where sociological (Mehan, 2008) and sociocultural (Gee, 2008) perspectives inform the contingent interpretations we make.

When programs of research are present in educational settings, a recurrent outcome is assurance that those programs continue from one generation of researchers to another. In post-secondary settings, researchers create undergraduate and graduate degree programs which, in turn, may be investigated by the very same research methods that increase knowledge in the field. In the case of degree programs in technical communication, this impulse to inquiry means that the family of theories and techniques used to investigate phenomenon in non-academic settings are equally useful in studying the very academic programs in which those same researchers hope to create others like themselves.

There is, however, an important difference in the development of programs of research and the occasion of program assessment. While there are many aims of research in our field, as demonstrated in the literature, program assessment is most focused—and therefore most meaningful—when the aim is to advance learning. While the concept of exigence is popular as a way to investigate context—Lloyd Bitzer (1968) famously defined an exigence as “an imperfection marked by urgency…a defect, an obstacle, something to be done, a thing which is other than it should be” (p. 6)—nothing is more harmful to program assessment than viewing its existence under this framework. The advent of program assessment viewed solely as occasions of reporting renders it an occasion for static methodology and default claims.

If the aim of program assessment is solely to rid ourselves of exigence, then little good can come from it. Conversely, if assessment is defined as learning—that is, as a form of research, undertaken in the service of opportunity structure identification, and for the purpose of advancing the scholarship of teaching and learning—then the authentic aims that underlie programs of research are manifested in the genre of program assessment (Hayward, 2015). The aim of program assessment and the desire for programmatic research is thus strengthened by reference to the concept of opportunity structures—creation of authentic, realizable means of success demonstrably open to all (Cloward, 1959; Merton, 1938, 1996).
Program Assessment: An Interpretive Framework

Survey methods such as those described in the case study to follow are but one way of re-examining program and course outcomes in order to guide curricular development, establish administrative practices, and renew program identity. Further evidence would be drawn from institutional data (such as admission scores) and performance assessment (such as EPortfolio scores), as well as review by program advisory boards (on planned annual visits). While the case study attends to curricular changes that hold the potential to substantially shift the orientation and direction of the program, identification of sources of evidence situates assessment episodes such as this within a capacious, meaningful framework providing aim and evidence under specified categories ranging, as we will show, from the consequences of our inferences to the sustainability of program infrastructure.

If we look at the assessment incidents diachronically as histories, we see the origins of program review, with audit of enrollments and evaluations, as a traditional accountability model. Emphasis on student outcomes and relational modeling advances synchronic analysis. In this new phase, we turn to a new evaluative model for writing programs that flips the idea of assessment so that sources of evidence are planned in detail in advance of the assessment itself. Inspired by evidence-centered design (Mislevy, Steinberg, & Almond, 2002), Edward M. White, Norbert Elliot, and Irvin Peckham (2015) have called this concept Design for Assessment (DFA). Their conceptual model (Table 5.1, p.155) establishes assessment aims “to assure that, in advance, those responsible for the writing program anticipate evidence collection and widespread participation as part of the assessment cycle” (p. 9). In turn, these aims become sources of evidence that can be used to advance opportunity for all assessment stakeholders. Under this model, the survey described in the case study becomes a source of evidence ready for interpretation and use (Kane, 2013). Use of the conceptual model before an assessment begins allows principled investigation aimed at the creation of opportunity structures as, of, and for learning. Integration of aim and evidence renders DFA uniquely suited to advance learning opportunities for all stakeholders.

We have applied DFA assessment aims and sources of evidence here for technical communication to help program leaders identify assessment aims. This application to the program at hand, representative of other degree programs in technical communication, supports the field’s unique focus on consequences as they are related to programmatic research on the communication construct. As shown in Figure 1, we propose a
framework of three overarching constants of consequence, research, and communication, as well as recursive components of localism, documentation, accountability, and sustainability.

**Figure 1: A Design for Assessment Framework**

- **Consequence**: The first priority of program assessment is structuring opportunities for students. This priority creates an overarching mindset for all facets of the assessment. Under the foundational concept of fairness, our actions have moral as well as practical impact (Elliot, 2016).
- **Research**: Working within a designated program of research, reframing our task in assessment as research shifts our focus and our roles empowering instructors to design the assessment and to
build knowledge bases about their students and programs (Huot, 2002). Theory-building—based on knowledge of the literature on
theories of technical communication, rhetoric, writing assessment,
and program evaluation—is an essential part of the research
component in designing program assessment; in turn, research
continues to inform the process and product of self-study
throughout the assessment process.

- **Communication.** The third constant in designing and implementing
assessment is commitment to communication. At every point in the
process, we communicate to networks of stakeholders, sharing our
inferences and our intended information use (Gallagher, 2011).

- **Localism.** Following the claim of Brian Huot (2002) that assessment
should be site-based, locally controlled, context sensitive,
rhetorically-based, and accessible, acknowledgement of the deeply
situated nature of communication allows detailed study of the
construct through sociological and sociocultural perspectives.

- **Documentation.** Alice I. Philbin and Mark D. Hawthorne (2007) have
described sources of evidence that document performance of the
program through calendars, budget data, and other existing
records. Their narrative demonstrates how a relatively new
department used novel techniques in the service of program
assessment.

- **Accountability.** Demands for accountability suggest that the public
wants to know what the university is doing with their funds and
whether their work is effective (Tebeaux, 2004). As a form of public
responsibility, accountability uses contemporary project
management systems to analyze resources allocated to the
program, design instruments to measure programs success, and
allocate resources under conditions of scarcity (Kaplan & Norton,
2007).

- **Sustainability.** Assessment allows for measured and strategic growth
that is sustainable and purposeful, looking beyond the present to
engage the future and public good (Johnson, et al., 2004).

This applied framework has two advantages. First, it advances
considerations of consequence prior to the assessment itself. Such
foregrounding allows discrimination of that which will structure
opportunity for students to learn and that which will not. Consideration of
the anticipated and unanticipated negative and positive impacts of an
assessment strategy before it has begun affords a unique advantage to
pursue fairness. Second, the applied framework advances research (and
theory-building) as well as communication (and stakeholder analysis) as complementary forms of action and sources of evidence. Attention to research serves as a guard against bureaucratization; attention to networks of stakeholder information guards against solipsism.

While the DFA model is deliberately broad in conceptualization, this application allows advancement of programmatic research and stakeholders as especially significant to the field of technical communication. Additionally, the framework advances principled investigation and sources of information in the service of inference. In the field of educational measurement, Michael Kane (2013) has provided an important contribution to validity in his use of interpretation/use arguments (or IUA)—a rubber-meets-the-road view of assessment. Emphasizing “claims based on the test scores (i.e., the network of inferences and assumptions inherent in the proposed interpretation and use),” he has led a refreshed emphasis on the contingent, language-based, temporally-situated nature of information (p. 2).

The applied DFA operationalizes what Kane (2016) has termed “the network of inferences and assumptions leading from test performances to conclusions and decisions based on the test scores” (p. 201). For example, under the model shown in Figure 1, information derived from the survey discussed in the case study would be evaluated in a broad as if context:

- **Consequence**: How would new variables lead to new opportunity structures that would, in turn, be used to advance opportunity for all students in the program?
- **Research**: What empirical methods of qualitative and quantitative analysis, along with emerging theories of communicating in digital environments, would provide additional information to that obtained by surveying the graduates?
- **Communication**: What other kinds of information, derived from other stakeholders, would be necessary to justify a seismic shift in the graduate program curriculum?
- **Localism**: What are the institutional circumstances that would allow dramatic changes to be made to the program, and how are those changes related to those made at other similar STEM research universities?
- **Documentation**: What kinds of performance-based information will be needed from students in order to rigorously study the transformed curriculum to ensure its ability to structure student opportunity?
• **Accountability**: In what ways will the new curriculum render instructors and administrators accountable to students and workplace leaders?

• **Sustainability**: How will the new curriculum impact hiring, staffing, tenure, promotion, professional development practices?

Under DFA, the inferences made from the case study are understood in a framework in which validation is subsumed under a larger consideration of fairness (Elliot, 2016). Ultimately, it is the interpretive emphasis of DFA—advancing nuance and explanation over proof and argumentation—that sets the stage for inquiry.

**Case Study: Changing Program Outcomes through Relational Modeling**

The following case study is an instance of that which occurs when those involved in programs of research attend to program assessment. A single-case design, defined as an adaptation of a time-series design intended to provide information on intervention impact (Kratochwill, et al., 2010, 2012), the present study examines the variables of our MS-PTC at a public research university. Using survey data, the study attends to curricular changes that have the potential to substantially shift the orientation and direction of the program.

**Program Core Competencies**

In spring 2001, the researchers responded to the demands of a program review audit for our MS-PTC at NJIT, a science, technology, engineering, and mathematics (STEM) public research university in Newark, New Jersey. As a result of the internal review process, four elements of program review were identified: commitment of institutional resources as measured by the allocated faculty lines; curricular and instructional design as evidenced in syllabi; student satisfaction and support as interpreted from course evaluations and student surveys; and faculty support as obtained from records of released time and professional activity. As easily imagined, the bureaucratized auditing process was oppositional to the spirit of our own programs of research during that time in environmental discourse (Coppola & Karis, 2000) and health communication (Elliot, Quinless, & Parietti, 2001). Notably, the numbing exercise did not include measurement of student learning outcomes through performance assessment (Lane & Stone, 2006).

In fall 2003, we applied our sense of practitioner knowledge as field researchers to literature review, survey, and bibliographic data in order to develop the most important skills for our students' success as technical
communicators. Our research orientation led us to design the program and its assessment according to a set of eight core competencies: collaboration and teamwork; document design; interpersonal and oral communication; problem solving, personal traits, and work skills; specialized expertise; technology; writing and editing; and rhetoric (Coppola & Elliot, 2010, Table 1, pp. 134-135). For our purposes as researchers, these competencies were envisioned as a relational model in which the competencies were predictors \( X \), or independent variables) that were related to the outcome \( Y \), or dependent variable) of graduate education in professional and technical communication (Coppola & Elliot, 2010, Figure 2, p. 131). As shown below in Tables 1 and 3, a version of these traditional variables is present in the program at the present writing and remains part of our research program.

**Relational Modeling**

To validate the relational model within our specific NJIT context, MS∙PTC faculty collaborated in spring 2004 to particularize how these core competencies might be addressed in their courses. We posted these to a core matrix, returned it to instructors for practitioner validation, and sought review by advisory board members. At mid-semester in spring 2004, with the assessment model operationalized into core competencies and enumerated as descriptors, we were ready to evaluate the ways those competencies were taught within the NJIT curriculum. Beginning in spring 2004, faculty met to review students’ EPortfolios, which were organized to demonstrate the core competencies. For the fall semester formative review, instructors used a form, derived from the descriptors list, which served as a qualitative report of progress with accompanying confirmation of ability and advice for improvement. At the close of the spring 2004 semester, faculty met again to conduct a summative review designed to yield quantitative performance information; that is, faculty used a Likert-scale scoring rubric to provide information for further improvement of both student ability and the program itself. By 2013, we completed 13 instances of highly quantitative EPortfolio assessment over nine years, confirming the significance of the traditional variable model and its longitudinal force of advancing student learning (Coppola & Elliot, 2007; Coppola & Elliot, 2013). Thomas Barker (2012) has classified our method under an analytic tradition that “inserts the element of performance assessment into the descriptive picture” (p. 191). While that is certainly true, we also believe our method allows research designs using the survey methodology and Massive Open Online Course (MOOC) experimentation described below. Each of these designs incorporates variable modeling at the research core.
Competency Mapping

By the spring of 2012, we began to have doubts about the decade-old variables that had served us so well in our performance assessments. Were we hitting the target but missing the point? We can best explain our reorganization impulse in terms of the deep changes in the worldwide economy and society during that period. According to the Organisation for Economic Co-operation and Development (OECD), the number of Internet users in 34 OECD countries increased from fewer than 60 percent of adults in 2005 to about 80 percent in 2013, reaching 95 percent among young people. More than 75 percent of all enterprises in the OECD area had a website and 21 percent sold their products electronically. Higher speed internet, lower unit prices, and smart devices not only changed the skills our students needed but also the way we could deliver educational preparation for those skills. As Andrew Klobucar points out in his postscript to the present study, these market changes signaled a hallmark event in which digital environments were re-envisioned on both technical and conceptual levels.

Topics of our program faculty meetings trended toward discussions of how social media, a globalized economy, and networked technologies were changing the technical communication profession and education. How, we asked, are we adapting to media changes today to help develop the communication workforce of tomorrow? Is it enough that our graduates are proficient in tweeting, blogging, tagging, podcasting, and wiki writing? We began to problematize the skill sets identified with social media and possible learning outcomes for program leaders (Coppola & Klobucar, 2010). Faculty also considered major research questions facing our field and posited adaptive learning, an orientation toward pedagogy in which technology and instruction meet at a nexus of behavioral psychology, cognitive semantics, design, automated assessment, and big data analysis. How could adaptive learning, we wondered, become part of our research program so that we might more ably study how emerging communication techniques and just-in-time learning strategies used in the workplace could be translated into digital educational environments for our students (Longo, et al., 2013)?

Because our involvement in research turned increasingly to program assessment since 2001, we were attuned to the 2011 Society of Technical Communication (STC) initiatives regarding the TCBOK and the then newly formed STC Certification Commission (STCCC) (Coppola, 2011; see also Society for Technical Communication, 2016). As a member of the CPTSC Assessment and Program Review Committee, Coppola participated in the CPTSC Outcomes Survey pilot (Barker, 2012) that sought program
outcomes in an effort to align educational efforts with professional impetus. Academic and professional leaders of TCBOK had identified core knowledge areas for technical communication using a multi-method approach: mapping, card sorting, affinity diagramming, and shareholder analysis (Coppola, 2010). The original STCCC identified broad areas of practice that represent the major activities performed by technical communicators in which the certified technical communicator would demonstrate proficiencies (Coppola, 2011). Together, Coppola and Elliot (2013) identified strategies to advance the TCBOK through its integration with national efforts to develop knowledge taxonomies, its conceptualization through metaphor, and its application through the use of personas and genres relevant to its stakeholders. With the growing role of a digital economy, rapid evolution of knowledge in the field, and new faculty joining the program, it was time to re-examine the relevance of our established core competencies, which we refer to as “traditional variables” in our paper.

**New variable identification.** In the fall of 2013 we began creating a new variable model for our program. With graduate student Faye Newsham (2014), instructors used mapping techniques to arrange the competencies from three sources—the present core competencies from our graduate program (MS-PTC), the TCBOK (2016), and STC Certification—in a hierarchical grouping. Shown in Figure 2, the key variables are written communication, visual communication, and content development; these were also the must-pass areas of the STC certification assessment. Each of these variables was then defined in terms of STCCC primary core competencies, STCCC secondary competencies, TCBOK areas of core knowledge, and our own traditional MS-PTC core competencies. The figure highlights the mapped commonalities among the three sources of integrated skill sets.
From the interaction between columns (the broad variables) and rows (the facets of these variables as informed by STCC, TCBOK, and MS-PTC), we identified nine new variables: 1) project planning, 2) project analysis, 3) solution design, 4) organizational design, 5) written communication, 6) visual communication, 7) content development, 8) content management,
and 9) final production. We noted the recurrence of variables across categories and understood this replication as evidence of intersectionality. To estimate exactly how relevant these new variables might be to students, we developed an online survey of program graduates with survey questions mapped to the new variable model shown in Figure 2. As Table 2 and Table 4 illustrate below, these new variables were amenable to empirical study (Johnson & Elliot, 2010). In addition, because we were interested in how the traditional variables were viewed, we also included questions on our MS∙PTC core competencies: collaboration, teamwork, document design, interpersonal communication, oral communication, problem solving, personal traits, work skills, specialized expertise, technology, writing and editing, and rhetoric. These variables are identified in Table 1 and Table 3.

**Design Justification**

The survey design, sampling plan, IRB approval, response rate, descriptive, and correlation analyses are understood as a way to examine traditional and new variables in their ability to advance student learning. There was little benefit in continuing performance assessment of EPortfolios without exploring new program variables. Indeed, as Klobucar demonstrates in his postscript, the creation and examination of new variables can be undertaken in a variety of ways, both standard (surveys) and innovative (MOOCs).

**Survey design.** Screening questions on the survey included year of graduation, first job title upon graduation (using the Bureau of Labor Statistics Standard Occupational Classifications [SOCs]), years in the profession, and current job title (again using the SOC classifications). Questions also were included on job preparation and degree relevance.

To elicit responses from our respondents on the traditional and new variables, we used a Likert scale with a range of scores from most important to least important. Variables were framed according to four questions. For the traditional variables, two questions were asked: Question 1—Rate these topics according to their level of importance for your first post-graduate job; and Question 2—Rate these topics according to their level of importance to your job today. For the new variables, identical questions were asked in Question 3 and Question 4. Varying the time sequence would allow respondents to reflect on their past and present experiences, as well as allow identification with program graduates in the future.

**Sampling plan design.** Our respondents were exclusively program graduates identified through an email list provided by our university’s
alumni association. Calls for participation were additionally issued on social media, including Facebook, Twitter, and LinkedIn. Using the platform SurveyExpressions, we provided links to the survey in all participation requests. Design followed best practices as identified by Don Dillman et al. (2009).

**IRB approval.** NJIT Institutional Review Board (IRB) reviewed and approved the research according to standards set for research at the university.

**Sampling plan response rate.** While 43 respondents agreed to participate in the survey between October 14, 2013, and November 1, 2013, the response rates varied according to question. For example, the range of graduation dates on the survey extended from 1996 to 2014—the history of the program. On this question “What year did you graduate?” 40 students responded, with the majority (n = 38) reporting graduating from 2003 to 2014. Based on this response rate and the fact that the program graduated 132 students during this 11-year period, the total response rate was 30 percent of the total population (n = 40 responses).

Following data cleaning only 33 surveys were usable (25 percent) in order to analyze the four main variable questions regarding traditional and new curricular topics. For some questions relating to these variables, the response rate fell according to the question answered. For instance, in Table 1, 30 respondents answered questions on the importance of problem solving, personal traits, technology, and writing and editing to their first post-graduate job. In Table 2, 33 respondents replied to the importance of the new variables to students’ first post-graduate jobs while 32 respondents replied on these variables as they related to their importance to jobs today. These total numbers were then used to produce the traditional and new variable correlations in Table 3 and Table 4, respectively. While the rate of response was not reported by Barker (2012), our sample size is similar to that reported by him.

**Descriptive analysis.** While only two students reported that they graduated in 1999 and 2000, the other 38 reported graduating after 2003. While graduates were employed in a variety of first jobs after graduation, the largest (n = 11, or 28 percent) were employed as technical writers (BLS SOC 27-3042). The next largest two groups (n = 3, or 8 percent) were editors (SOC 27-3041) and those who held job titles in education, training, and library operations (SOC 25-0000). Other professions were spread among 49 SOC codes, with no other distinct group pattern. Similar patterns held in their present job titles. The largest (n = 10, or 25 percent) were employed as technical writers. The next largest two groups (n = 3, or
8 percent) were editors and computer and information system managers (SOC = 11-3021). Asked if they had ever worked in the technical communication profession, 85 percent (n = 34) answered yes; asked if they were employed in technical communication at the time of the survey, 68 percent (n = 27) reported that that they were. Graduates (n = 33 on this question) reported that they were very well prepared (n = 7, or 21 percent) or well prepared (n = 18, or 55 percent) for their first postgraduate job. They also reported that they very strongly agreed (n = 7, or 21 percent) or strongly agreed (n = 14, or 42 percent) that their degree remained important to their work today.

Responses to questions asking graduates to rate the traditional topics (or variables) according to their level of importance for their first postgraduate job (Question 1) and rate these topics according to their level of importance to their jobs today (Question 2) are provided in Table 1.

**Table 1: Descriptive Measures: Traditional Variables (n = 30-31)**

<table>
<thead>
<tr>
<th>VARIABLE (respondents)</th>
<th>Most Important (1)</th>
<th>Important (2)</th>
<th>Σ 1+2</th>
<th>Somewhat Important (3)</th>
<th>Somewhat Unimportant (4)</th>
<th>Least Important (5)</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Collaboration (31)</td>
<td>29% (9)</td>
<td>29% (9)</td>
<td>58% (18)</td>
<td>23% (7)</td>
<td>13% (4)</td>
<td>6% (2)</td>
<td>2.38</td>
<td>1.22</td>
</tr>
<tr>
<td>2. Team Work (31)</td>
<td>32% (10)</td>
<td>32% (10)</td>
<td>64% (20)</td>
<td>16% (5)</td>
<td>13% (4)</td>
<td>7% (2)</td>
<td>2.29</td>
<td>1.24</td>
</tr>
<tr>
<td>3. Document Design (31)</td>
<td>48% (15)</td>
<td>19% (6)</td>
<td>67% (21)</td>
<td>10% (3)</td>
<td>10% (3)</td>
<td>13% (4)</td>
<td>2.19</td>
<td>1.47</td>
</tr>
<tr>
<td>4. Interpersonal Communication (31)</td>
<td>39% (12)</td>
<td>26% (8)</td>
<td>65% (20)</td>
<td>26% (8)</td>
<td>6% (2)</td>
<td>3% (1)</td>
<td>2.09</td>
<td>1.11</td>
</tr>
<tr>
<td>5. Oral Communication (31)</td>
<td>32% (10)</td>
<td>39% (12)</td>
<td>71% (22)</td>
<td>16% (5)</td>
<td>13% (4)</td>
<td>0% (0)</td>
<td>2.09</td>
<td>1.01</td>
</tr>
<tr>
<td>6. Problem Solving (30)</td>
<td>63% (19)</td>
<td>17% (5)</td>
<td>80% (24)</td>
<td>14% (4)</td>
<td>3% (1)</td>
<td>3% (1)</td>
<td>1.67</td>
<td>1.06</td>
</tr>
<tr>
<td>7. Personal Traits (30)</td>
<td>23% (7)</td>
<td>37% (11)</td>
<td>60% (18)</td>
<td>30% (9)</td>
<td>3% (1)</td>
<td>7% (2)</td>
<td>2.33</td>
<td>1.09</td>
</tr>
<tr>
<td>8. Work Skills (31)</td>
<td>48% (15)</td>
<td>23% (7)</td>
<td>71% (22)</td>
<td>23% (7)</td>
<td>3% (1)</td>
<td>3% (1)</td>
<td>1.9</td>
<td>1.08</td>
</tr>
<tr>
<td>9. Specialized Expertise (31)</td>
<td>48% (14)</td>
<td>21% (6)</td>
<td>69% (20)</td>
<td>21% (6)</td>
<td>3% (1)</td>
<td>7% (2)</td>
<td>2.0</td>
<td>1.22</td>
</tr>
<tr>
<td>10. Technology (30)</td>
<td>43% (13)</td>
<td>27% (8)</td>
<td>70% (21)</td>
<td>17% (5)</td>
<td>10% (3)</td>
<td>3% (1)</td>
<td>2.03</td>
<td>1.16</td>
</tr>
<tr>
<td>11. Writing and Editing (30)</td>
<td>60% (18)</td>
<td>30% (9)</td>
<td>90% (27)</td>
<td>0% (0)</td>
<td>3% (1)</td>
<td>7% (2)</td>
<td>1.67</td>
<td>1.12</td>
</tr>
<tr>
<td>12. Rhetoric (31)</td>
<td>16% (5)</td>
<td>23% (7)</td>
<td>39% (12)</td>
<td>35% (11)</td>
<td>16% (5)</td>
<td>10% (3)</td>
<td>2.81</td>
<td>1.94</td>
</tr>
</tbody>
</table>
### Importance to Job Today

<table>
<thead>
<tr>
<th>Variable</th>
<th>1st Response</th>
<th>2nd Response</th>
<th>3rd Response</th>
<th>4th Response</th>
<th>5th Response</th>
<th>6th Response</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration</td>
<td>36% (11)</td>
<td>32% (10)</td>
<td>68% (21)</td>
<td>13% (4)</td>
<td>13% (4)</td>
<td>6% (2)</td>
<td>2.23 (1.26)</td>
</tr>
<tr>
<td>Team Work</td>
<td>36% (11)</td>
<td>32% (10)</td>
<td>68% (21)</td>
<td>13% (4)</td>
<td>13% (4)</td>
<td>6% (2)</td>
<td>2.23 (1.26)</td>
</tr>
<tr>
<td>Document Design</td>
<td>50% (15)</td>
<td>10% (3)</td>
<td>60% (18)</td>
<td>17% (5)</td>
<td>17% (5)</td>
<td>6% (2)</td>
<td>2.2 (1.39)</td>
</tr>
<tr>
<td>Interpersonal Communication</td>
<td>48% (15)</td>
<td>26% (8)</td>
<td>74% (23)</td>
<td>13% (4)</td>
<td>10% (3)</td>
<td>3% (1)</td>
<td>1.94 (1.15)</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>37% (11)</td>
<td>33% (10)</td>
<td>70% (21)</td>
<td>13% (4)</td>
<td>17% (5)</td>
<td>0% (0)</td>
<td>2.1 (1.09)</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>55% (17)</td>
<td>25% (8)</td>
<td>80% (25)</td>
<td>10% (4)</td>
<td>10% (3)</td>
<td>0% (0)</td>
<td>1.74 (.99)</td>
</tr>
<tr>
<td>Personal Traits</td>
<td>30% (9)</td>
<td>40% (12)</td>
<td>70% (21)</td>
<td>16% (5)</td>
<td>7% (2)</td>
<td>7% (2)</td>
<td>2.2 (1.57)</td>
</tr>
<tr>
<td>Work Skills</td>
<td>53% (16)</td>
<td>20% (6)</td>
<td>73% (22)</td>
<td>17% (5)</td>
<td>3% (1)</td>
<td>7% (2)</td>
<td>1.9 (1.21)</td>
</tr>
<tr>
<td>Specialized Expertise</td>
<td>53% (16)</td>
<td>23% (7)</td>
<td>76% (33)</td>
<td>10% (3)</td>
<td>7% (2)</td>
<td>7% (2)</td>
<td>1.9 (1.24)</td>
</tr>
<tr>
<td>Technology</td>
<td>55% (17)</td>
<td>26% (8)</td>
<td>81% (25)</td>
<td>6% (2)</td>
<td>10% (3)</td>
<td>3% (1)</td>
<td>1.81 (1.38)</td>
</tr>
<tr>
<td>Writing and Editing</td>
<td>61% (19)</td>
<td>29% (9)</td>
<td>90% (28)</td>
<td>0% (0)</td>
<td>3% (1)</td>
<td>7% (2)</td>
<td>1.65 (1.11)</td>
</tr>
<tr>
<td>Rhetoric</td>
<td>33% (10)</td>
<td>17% (5)</td>
<td>50% (15)</td>
<td>30% (9)</td>
<td>7% (2)</td>
<td>13% (4)</td>
<td>2.5 (1.38)</td>
</tr>
</tbody>
</table>

Analysis is meaningful when attention is given to the first two responses in which Likert scale 1 and 2 categories are combined (Σ 1+2). In terms of their first post-graduate job, respondents reported that these 12 traditional variables were most important or important from a range of 39 percent for rhetoric (16 percent plus 23 percent) to 90 percent for writing and editing (60 percent plus 30 percent). The mean score of the 12 traditional variables reveals that the respondents believed that 67 percent of these topics ($SD = 12.32$) were above the level of somewhat important to their first jobs. Overall, the mean score of these variables when considered in terms of first post-graduate job ranged from a low of 2.81 percent for rhetoric to a high of 1.67 percent for writing and editing and problem solving. Notably, no variable received a mean score of 3 or above, a sign of declining importance.

In terms of the importance of their jobs today, respondents reported that these variables were most important or important from a range of 50 percent for rhetoric to 90 percent for writing and editing. The mean score of the traditional variables reveals that the respondents believed that 72 percent of these traditional topics ($SD = 10.3$) were above the level of
somewhat important to their first jobs. Overall, the mean score of these variables when considered in terms of their jobs today ranged from 2.5 percent for rhetoric to 1.65 percent for writing and editing. No variable received a mean score of 3 or above.

In a test of mean differences between the traditional variables in their importance to their first job ($M = 2.12, SD = .316$) and importance to their job today ($M = 2.03, SD = .249$), a statistically significant difference was observed (two sample t-test, $t(60) = 2.58, p < .01$). Thus, there is evidence that the variables lost value over time in terms of respondents’ perception of importance.

Responses to questions asking graduates to rate the new topics (or variables) according to their level of importance to their first post-graduate job (Question 3) and to rate these topics according to their level of importance to their jobs today (Question 4) are provided in Table 2.

<table>
<thead>
<tr>
<th>VARIABLE (respondents)</th>
<th>Importance to First Post-Graduate Job</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project Planning (33)</td>
<td>36% (12) 36% (12) 72% (24) 25% (8) 3% (1) 0% (0) 1.94 (.86)</td>
</tr>
<tr>
<td>2. Project Analysis (33)</td>
<td>39% (13) 27% (9) 66% (22) 31% (10) 0% (0) 3% (1) 2.0 (1.0)</td>
</tr>
<tr>
<td>3. Solution Design (33)</td>
<td>36% (12) 46% (15) 82% (27) 15% (5) 0% (0) 3% (1) 1.87 (.89)</td>
</tr>
<tr>
<td>4. Organizational Design (33)</td>
<td>33% (11) 36% (12) 69% (23) 28% (9) 3% (1) 0% (0) 2.0 (.87)</td>
</tr>
<tr>
<td>5. Written Communication (33)</td>
<td>61% (20) 30% (10) 91% (30) 0% (0) 6% (2) 3% (1) 1.61 (.99)</td>
</tr>
<tr>
<td>6. Visual Communication (33)</td>
<td>61% (20) 30% (10) 91% (30) 0% (0) 3% (1) 6% (2) 1.64 (1.08)</td>
</tr>
<tr>
<td>7. Content Development (33)</td>
<td>64% (21) 21% (7) 85% (28) 3% (1) 6% (2) 6% (2) 1.69 (1.18)</td>
</tr>
<tr>
<td>8. Content Management (33)</td>
<td>49% (16) 27% (9) 76% (25) 15% (5) 6% (2) 3% (1) 1.87 (1.08)</td>
</tr>
<tr>
<td>9. Final Production (33)</td>
<td>36% (12) 36% (12) 72% (24) 22% (7) 3% (1) 3% (1) 2.0 (1.0)</td>
</tr>
</tbody>
</table>
## Importance to Job Today

<table>
<thead>
<tr>
<th>Variable</th>
<th>First Response</th>
<th>Second Response</th>
<th>Third Response</th>
<th>Fourth Response</th>
<th>Fifth Response</th>
<th>Sixth Response</th>
<th>Seventh Response</th>
<th>Eighth Response</th>
<th>Ninth Response</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Planning (32)</td>
<td>44% (14)</td>
<td>34% (11)</td>
<td>78% (25)</td>
<td>16% (5)</td>
<td>6% (2)</td>
<td>0% (0)</td>
<td>1.84 (.92)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Analysis (32)</td>
<td>44% (14)</td>
<td>22% (7)</td>
<td>66% (21)</td>
<td>28% (9)</td>
<td>6% (2)</td>
<td>0% (0)</td>
<td>1.97 (.99)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solution Design (32)</td>
<td>41% (13)</td>
<td>31% (10)</td>
<td>72% (23)</td>
<td>22% (7)</td>
<td>3% (1)</td>
<td>3% (1)</td>
<td>1.97 (1.03)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational Design (32)</td>
<td>34% (11)</td>
<td>34% (11)</td>
<td>68% (22)</td>
<td>22% (7)</td>
<td>10% (3)</td>
<td>0% (0)</td>
<td>2.06 (.98)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Written Communication (32)</td>
<td>72% (23)</td>
<td>16% (5)</td>
<td>88% (28)</td>
<td>6% (2)</td>
<td>0% (0)</td>
<td>6% (2)</td>
<td>1.53 (1.07)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual Communication (32)</td>
<td>53% (17)</td>
<td>28% (9)</td>
<td>81% (26)</td>
<td>13% (4)</td>
<td>3% (1)</td>
<td>3% (1)</td>
<td>1.75 (1.01)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content Development (32)</td>
<td>59% (19)</td>
<td>16% (5)</td>
<td>75% (24)</td>
<td>16% (5)</td>
<td>3% (1)</td>
<td>6% (2)</td>
<td>1.81 (1.20)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content Management (32)</td>
<td>47% (15)</td>
<td>19% (6)</td>
<td>66% (21)</td>
<td>16% (5)</td>
<td>6% (2)</td>
<td>12% (4)</td>
<td>2.19 (1.42)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Production (32)</td>
<td>41% (13)</td>
<td>19% (6)</td>
<td>60% (19)</td>
<td>25% (8)</td>
<td>9% (3)</td>
<td>6% (2)</td>
<td>2.21 (1.26)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Again, attention is given to the first two responses in which Likert scale 1 and 2 categories are combined (Σ 1+2). In terms of their first post-graduate job, respondents reported that these nine new variables were most important or important ranged from 66 percent for project analysis to 91 percent for both written communication and visual communication. Respondents reported that 78 percent of these new variables (SD = 9.38) were above the level of somewhat important to their first jobs. Overall, the mean score of these new variables when considered in terms of first post-graduate job ranged from a low of 2.0 for project analysis, organizational design, and final production to a high of 1.61 for written communication. Notably, no variable received a mean score of 3 or above, a sign of declining importance.

In terms of their jobs today, respondents reported that these new traits were most important or important ranged from 60 percent for final production to 88 percent for written communication. The mean score of the traditional variables reveals that the respondents believed that 71 percent of these traditional topics (SD = 9.17) were above the level of somewhat important to their first jobs. Overall, the mean score of these variables when considered in terms of job today ranged from 2.21 percent for final production to 1.53 percent for written communication. No variable received a mean score of 3 or above.
In a test of mean differences between the new variables in their importance to first job ($M = 1.85$, $SD = .159$) and importance to job today ($M = 1.93$, $SD = .218$), no statistically significant difference was observed (two sample t-test, $t(60) = 1.65$, $p = .10$). Thus, there is no evidence that the variables gained or lost value over time in terms of respondents’ perception of importance.

**Inferences from descriptive findings.** While graduates hold a variety of present jobs, the largest group is in the field of technical communication. Seventy six percent of graduates reported that they were prepared at a level above average for their first post-graduate jobs, and 63 percent reported their degree was relevant today.

The concept of relevance is further demonstrated by Questions 1 through 4. In terms of the importance of first post-graduate jobs (Question 1), the traditional variables are above the 50 percent level in terms of relevance as most important or important, with the single exception of rhetoric. Among the nine variables, writing and editing is clearly most important. In terms of the importance of these traditional variables to present jobs (Question 2), each of the variables is above the 50 percent level. The importance of writing and editing remains paramount. However, there is evidence that the variables, taken together, lost value over time.

Among the new variables, written communication and visual communication are clearly the most important (Question 3). In terms of their relevance for jobs today (Question 4), these two variables continued to hold the most important positions. All variables held value above the 60 percent level for both first post-graduate jobs and jobs today. In addition, the new variables remained stable over time.

In summary: In terms of first post-graduate job, our graduates reported that the traditional variables that drove their master’s program were valuable, but they declined in importance over time at statistically significant levels. In terms of their first post-graduate job, our graduates reported that the new variables did not change over time in their level of importance. If a single word is used to capture the essence of the survey responses when descriptively analyzed, it would have to be fluidity. While some variables remain of consistent importance, others shift over time. A model that is fluid will allow students to envision a curriculum that is responsive to change.

**Correlation analysis.** For the purpose of the present analysis, these interpretive ranges were used for statistically significant correlations: high positive correlations = 1.0 to 0.70; medium positive correlations = 0.69 to 0.30; and low positive correlations = 0.29 to 0.00. A companion to Table 1,
Table 3 presents correlations of the traditional variables of Question 1 (shaded in top of table) and Question 2 (unshaded in bottom of table).

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>1</th>
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<tbody>
<tr>
<td>1. Collaboration</td>
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<td>.92*</td>
<td>.44**</td>
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</tbody>
</table>

*p < .05  
**p < .01

In general, correlations are medium-to-high at statistically significant levels in terms of the value of the traditional variables in first post-graduate jobs. While there are cases where no statistical significance exists, there is a notable absence of low correlations. The variable of work skills demonstrated medium-to-high statistically significant correlations with all other variables, while rhetoric demonstrated the least number of statistically significant correlations. In terms of importance to job today,
the traditional variables retained medium-to-high statistically significant correlations. Again, there are few non-statistically significant relationships and no low statistically significant correlations. The variables of interpersonal communication, oral communication, and work skills demonstrated medium-to-high statistically significant correlations with all other variables, while rhetoric again demonstrated the least number of statistically significant correlations.

A companion to Table 2, Table 4 presents correlations of the new variables of Question 3 (shaded in top of table) and Question 4 (unshaded in bottom of table).

Table 4: Correlation of New Variables: Importance to Student First Post-Graduate Job [FJ] (n = 33) and Importance to Job Today [JT] (n = 32)

<table>
<thead>
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<td>.67**</td>
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<td>.51**</td>
<td>FJ↑</td>
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</table>

*p < .05
**p < .01

In terms of relevance of these new variables to first post-graduate jobs, the correlations are medium-to-high at statistically significant with
the exception of project analysis. All of the other variables are related at statistically significant levels. Regarding today’s jobs, correlations are medium-to-high at statistically significant. Remarkably, all variables are correlated.

**Inferences from correlational findings.** The traditional variables are generally cohesive in terms of first post-graduate jobs and importance of jobs today. The new variables, however, are exceptionally inter-related. Indeed, when the descriptive statistics from Tables 1 and 2 are considered, it is apparent that the new variables are perceived as more relevant to, and more integrated with, first jobs and jobs today than are the traditional variables that our graduates experienced in their course work. While there differences between variable sets, the continued relevance of written communication remains evident.

This relevance is borne out through linear regression analysis that considers written communication as the dependent variable ($Y$) and each of the other eight variables in the new model as independent variables ($X$). In terms of first post-graduate job, analysis reveals that 86 percent of the variance is accounted for by the model ($R^2 = 0.86, F(8, 24) = 18.10, p < .001$). In terms of importance to job today, the model accounts for 75 percent of the variance ($R^2 = 0.75, F(8, 24) = 8.4, p < .001$).

In summary: In terms of first post-graduate jobs and importance of jobs today, our students reported that the traditional variables held together in a cohesive fashion. In terms of their first post-graduate job and their job today, our graduates reported that the new variables were more strongly related. Among the new variables, a regression model that takes written communication as the sole outcome proves to be an extraordinarily high predictor of skills needed for both first job and job today. If a single word is used to capture the essence of the correlations, it would have to be cohesion. A model that is interrelated at medium-to-high levels will allow students to envision a curriculum that is unified. The generalization inference of our traditional and new variable models suggests that the construct of technical communication shifts; as such, conclusions regarding construct coverage will change over time.

**Heuristic for Interpretive Program Design:**

**Stakeholder Networks**

In the global environment described by OECD (2014), speed and flexibility are more in demand than ever before thanks to an accelerating knowledge economy and sophisticated communication networks (Spinuzzi, 2015). Moving away from document-based information development, our students will likely use digital collaboration platforms...
and participate in online meetup groups to get work done (Johnson, 2015). Traditional technical writing skills as well as a disposition toward flexibility, independence, and strategic thinking are the order of the day, according to the managers who hire our graduates (Kimball, 2015). Technical communication pedagogy is changing apace. Any framework for assessment must provide a process for nimble interpretation, one that can be adapted for contingency and local problem solving while providing inferences that facilitate fair action through valid practice. Further, these new frameworks must allow programmatic research to be presented in meaningful ways to members of the field, university administrators, and individuals and institutions outside of academia.

Heuristics are often a way to navigate complex and contingent situations such as the one described in the case study. In recursive fashion, heuristic thought connects abstract theories to concrete practices; that is, this kind of thinking allows problem solvers to shift their thinking from broad, intuitive concepts to strategic, practical applications (Johnson-Eilola & Selber, 2004; Kahneman, 2011). In this case, we have used the DFA framework to generate heuristics as a series of broad foundational and practical questions that, in turn, are made specific by focusing on unique programmatic aims, outcomes, and mission. An extension of Figure 1, Table 5 provides a starting point for considerations by major networks of stakeholders in assessment: students, program instructors, program administrators, and workforce leaders. As Chris Gallagher (2011) has emphasized, attention to these networks “allows us to confront the dangers, limitations, and affordances” of the social and logical structures that constitute our society (p. 465). Answers to the questions facilitate agentic roles for each stakeholder network that, in turn, enrich the DFA interpretive framework through diverse perspectives.
Table 5: Heuristic Questions: An Interpretive Assessment Framework for Technical Communication

<table>
<thead>
<tr>
<th>Considerations for Students</th>
<th>Considerations for Program Instructors</th>
<th>Considerations for Program Administrators</th>
<th>Considerations for Workforce Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consequence</strong></td>
<td>How will the assessment results be used to draw inferences about the individual student’s ability as well as success of specific student groups?</td>
<td>How can various sources of evidence be used to provide information for instruction across the entire curriculum?</td>
<td>How can administrators use constructive alignment to map the institutional mission statement to program outcomes as they are instantiated in performance assessment?</td>
</tr>
<tr>
<td><strong>Research</strong></td>
<td>How are the answers to what we value, gained from theory and research, brought into the cycle of assessment and learning at the level of the individual student?</td>
<td>Have instructors been encouraged to think of themselves as researchers, collecting evidence for best practices and advancing the body of knowledge for the field?</td>
<td>How can administrators facilitate programs of research focused on the scholarship of teaching and learning?</td>
</tr>
<tr>
<td><strong>Communication</strong></td>
<td>How are program objectives clearly communicated to students so they understand what they are to achieve and the relevance of that achievement?</td>
<td>Have barriers to defining criteria and key terms of assessment been identified and negotiated to achieve the aim of transparency?</td>
<td>How can tensions between administrative demands and programmatic research become open dialogue?</td>
</tr>
<tr>
<td>Localism</td>
<td>How is the curricular design made relevant to individual student majors?</td>
<td>How are program development initiatives planned to advance the professional development of instructors so they may keep up to date in the latest technological innovations and market demands?</td>
<td>How can resources be shared across academic and geographic boundaries so that opportunities are increased for instructors and students?</td>
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<tr>
<td>----------</td>
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<td>-----------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Documentation</td>
<td>How may an EPortfolio demonstrate meaningful engagement of program objectives and document the student’s preparation for graduation and career success?</td>
<td>Will instructors share syllabi, tasks, and grading criteria to ensure that proven practices for achieving programmatic goals are transferred within and across the curriculum?</td>
<td>How will inter-institutional collaboration be encouraged through legacy documents such as assessment reports from benchmark institutions to foster growth of programmatic research?</td>
</tr>
<tr>
<td>Accountability</td>
<td>How might students demonstrate a professional identity that is contemporary and unique in ever changing global markets?</td>
<td>How is accountability understood by instructors in terms of teaching, research, service, and economic development as part of the institutional mission?</td>
<td>How will administrators ensure that hiring, staffing, tenure, promotion, and professional development practices are sufficient to ensure student success?</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Will the framework of the program stand the test of time, yielding immediate and future career success of its students?</td>
<td>How are instructors encouraged to view their teaching as research-based and longitudinally-centered?</td>
<td>Has sufficient investment been made in the program to ensure its success within shifting economic conditions?</td>
</tr>
</tbody>
</table>

While the questions stress agentic roles for each stakeholder network, they also distribute the responsibility for programmatic research applied to program assessment. For example, in terms of consequence, program administrators are charged with implementing constructive alignment (Biggs & Tang, 2011). As an integrated instructional and assessment framework used to map learning activities to outcomes, administrators can use constructive alignment to link learning activities at the level of institutional mission to the syllabus at the level of the course. Such mapping allows those involved in assessment to document the ways that the program uses available resources to advance student learning so that, in turn, the range of inferences is enriched regarding student performance. Once administrators take on this active role, coursework for students become defined, instructors began to see their work as research providing evidential information, and workforce leaders begin to see their roles as more consequential than cosmetic. In terms of each center of evidence, heuristics allow meaningful distribution of responsibility and precise, actionable direction. The extrapolation inference of our heuristic questions suggests that the shifting construct of technical communication is best understood by involving a wide variety of stakeholders. By providing historical, theoretical, and contextual evidence, we have attempted to demonstrate that program assessment is an ideal vehicle for programmatic research. The evidence-centered DFA framework we have featured provides opportunities for future program researchers.

To close our proposal for an interpretive framework for program assessment in technical communication, we have asked the current program director, Andrew Klobucar, to provide a reflective statement on efforts thus far and to identify new directions for the future of graduate study in our field. Sustainability in program assessment is important as one generation of researchers departs the assessment scene and others

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take their place at center stage. Following is the postscript of our new program director.

PostScript: New Director, New Directions

To complement the analysis of program assessment and its impact on online learning in technical communication offered by my colleagues, I would like to discuss the recent emergence and nature of new socially constructed learning environments, noting specifically how they helped me test the fit of the variable model shown in Figure 2 in relation to a massive open online course (MOOC). I then want to conclude the paper with a focus on alignment and comment briefly on that which lies ahead for graduate instruction in technical communication.

Responsiveness

The early 21st century saw dramatic improvements in content delivery in online education through the transition to broadband and fiber-optic networks along with important usability enhancements in web interfaces and page design formats. Faster and more reliable distribution technologies helped refine course delivery on many levels, while paving the way for the more essential, paradigm-shifting developments in professional communication we attribute to social networking software like Twitter, YouTube and Facebook, released between 2005 and 2006. With the media enhancements brought on by these later tools, however, the web moves from a means for networked communication to what contemporary cultural theorists call “platformed sociality” (van Dijck, 2013).

These same developments sponsor many of the profound transformations we continue to witness in education-related digital network technologies today. In general, we can see that the social media enhanced web has done much in just a single decade to refine online networks into serious tools of academic instruction; the very first peer-reviewed publications on digital modes of curriculum design, course delivery and general pedagogy have appeared only recently in 2008 (Liyanagunawardena, Adams, & Williams, 2013). Assessment research is obviously crucial to these developments, as many of the same tools and learning management system enhancements that helped to improve the web’s capacity to nurture connections and build communities also provide the means to collect and process in real-time a uniquely rich array of data regarding online course-related student behavior, interpersonal conduct, and human performance.
MOOC Field Test

By 2015, MS∙PTC courses in social media were supported with supplementary modules in instructional design, user experience (UX) and universal design learning (UDL). Many of the core tasks could be delivered through a MOOC run in tangent to the program’s central learning management system (LMS). In line with several of the program’s new core competencies, these modules could showcase collaborative, peer-driven activity around larger project-based ventures, and in doing so, required the ongoing refinement of the variable model shown in Figure 2 and its assessment framework shown in Figure 1.

The MS∙PTC MOOC “The Strategic Communicator’s Toolkit,” developed and hosted on the Canvas LMS (registered as CN-1875-TOOLKIT), was open to enrollment from September through October 2015 with initial course assignments made available the first week of October.

Enrollment

Enrollment had reached just over 400 students by the course’s opening date of October 5, 2015, with approximately 150 additional students joining the projects by the end of the first month for a total peak enrollment of 589 students. Of these participants, one of several exit surveys showed that 55 percent were women, with almost 60 percent of all learners currently living in either North America or Western Europe, half of whom spoke English as their primary language. The solid majorities in these categories give us a fairly consistent portrait of the contemporary MOOC learner.

She is a native English speaker living in a developed western country with an interest in professionalization and current information and communication technologies. Additional survey results provide an even more interesting portrait regarding this learner’s highest level of education achieved. Although the MOOC course was offered in conjunction with our MS∙PTC program, 39 percent of respondents indicated that they already held master’s degrees, while 8 percent had completed doctoral programs, including medical or law degrees. Factoring in those learners who were either currently enrolled in a graduate program at a degree granting institution or at minimum held a four-year college degree, our survey shows us that a full 79 percent of all participants were college educated. This high level of education coincided well with the average age of our respondents, showing, as it did, that 74 percent of these learners were over the age of 35, with just over 30 percent between 45 and 54, and 18 percent between 55 and 64.
The older age of the MOOC’s participants, combined with their relatively high levels of education, guaranteed advanced levels of discussion and task management within all the modules.

### Alignment

The MS-PTC MOOC “The Strategic Communicator’s Toolkit” consisted of four major modules, each one organized around a single theme and a set of related topics currently considered critical to the field of professional communication in both high technology and digital media firms. The modules were designed to be completed in one week and, although offered consecutively, were left fully accessible for the duration of the course in support of a heutagogical approach to learning. These assignments—and their alignment to the new variable model shown in Figure 2, Table 2, and Table 4—are shown in Table 6.

<table>
<thead>
<tr>
<th>New Variable Model</th>
<th>Aligned MOOC Course Module</th>
<th>MOOC Course Content</th>
<th>Future MS-PTC Considerations</th>
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<tr>
<td><strong>1. Project Planning</strong></td>
<td>Module 1: Communication</td>
<td>General history and principles of communication theory</td>
<td>➢ Continue to develop and feature project oriented tasks.</td>
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<td></td>
<td>Module 2: Simplicity</td>
<td>Concept mapping leading to improved collaborative communication</td>
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<td>Organizational methods in collaborative project organization</td>
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<td><strong>2. Project Analysis</strong></td>
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<td>Value of revision, interaction, and dialogue</td>
<td>➢ Develop new project planning based competencies, along with enhanced opportunities for project analysis emphasizing design and implementation.</td>
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<td>Techniques to solicit strong feedback, open up negotiations, and build communal interaction</td>
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<td><strong>3. Solution Design</strong></td>
<td>Module 2: Simplicity</td>
<td>Methods and tools designed to facilitate near instantaneous peer-review and critical commentary on group assignments and tasks</td>
<td>➢ Develop new opportunities for engagement in collaborative solution design, as well as assignments intended to develop techniques in feedback and forum discussions.</td>
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<td>Module 3: Feedback</td>
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<td><strong>4. Organizational Design</strong></td>
<td>Module 2: Simplicity</td>
<td>Social media and augmented reality technologies to organize and manage group situations. Leadership skills through established communication and collaboration techniques, with particular emphasis on agile project management methods.</td>
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<td></td>
<td>Module 4: Leadership</td>
<td>➤ Develop new social media and augmented reality assignments intended to establish collaborative and leadership techniques.</td>
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<td><strong>5. Written Communication</strong></td>
<td>Module 1: Communication</td>
<td>Familiarity and fluency in using screen-based, digital communication technologies/media. Techniques and tasks in peer-review assessment and commentary.</td>
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<td>Module 2: Simplicity</td>
<td>➤ Continue opportunities for formal writing as well as development of stronger, more persuasive rhetorical voices in written communication.</td>
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<td>Module 2: Simplicity</td>
<td>➤ Develop new opportunities for video-based production, as well as advanced graphic design skills.</td>
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<td><strong>7. Content Development</strong></td>
<td>Module 2: Simplicity</td>
<td>Instruction and management techniques in the context of adapting personal expertise to direct a new project. Methods to condense and share information within a group with multiple skills and backgrounds.</td>
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<td></td>
<td>Module 3: Feedback</td>
<td>➤ Develop new opportunities for content produced off-line to be incorporated into the LMS.</td>
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</table>
| 8. Content Management | Module 2: Simplicity  
Module 3: Feedback  
Module 4: Leadership | Methods and tools to help professional communication managers organize and distribute content through sharable archives and catalogues  
Techniques to design and promote related project campaigns  
Methods and tools to help professional communication managers build augmented reality archives for projects managed in multiple locations | ➤ Develop new opportunities for management executed off-line to be incorporated into the LMS. |
| 9. Final Production | Module 4: Leadership | Emphasis on the collective nature of each assignment and strategies of professional media producers adept at working in collaborative settings  
Focus on strong leadership needs in communication projects, with particular emphasis on augmenting existing strengths and inspiring others in shared enterprises  
Methods to help project managers define boundaries and provide direction when needed | ➤ Develop new opportunities for increased integration of learner-based activities with instructor led assignments leading to a final product. |

Looking at Table 6 in some detail, we can see specifically how individual learning outcomes as well as task and topic-based directives are able to address the nine competencies outlined in the new variable.
model. The first four competencies—project planning, project analysis, solution design and organizational design—together accurately frame the primary learner project around which the MOOC is actually constructed. As learners work through each of the modules of communication, simplicity, feedback and leadership, they will simultaneously be in the process of organizing, designing, and implementing a team-based social media campaign, either promotional or educational in its aims, based on a corporate or community-based assignment of their own imagining. Central to the success of MOOCs as learning environments is their distinctive capacity to align contemporary professional, expertise-driven situations and issues with practical tasks and activities. “The Strategic Communicator's Toolkit” required learners to build and then actively incorporate that exact instrument into their major project: a communicator’s toolkit. The course content was accordingly built around this primary objective. Learners were encouraged to use and gain experience with an array of different contemporary online media tools by adapting them to a strategic communication project that they individually devised and then constructed. Thus, the next five competencies—written communication, visual communication, content development, content management, and final production—were brought into play as the MOOC progressed.

Future Considerations

As illustrated in Table 6, the course content developed for the MOOC generally supported the new variable model, while referencing key learner outcomes associated with the model’s nine competencies. Just as significantly, multiple learner surveys conducted during and immediately following the course’s initial run indicate several areas of alignment between learner attitudes of MOOC participants regarding these outcomes and those of MS∙PTC survey respondents.

To be specific, variables in Table 2 rated by enrolled students as most important to their current jobs and job-related experiences tended to be ranked equally highly by most learners in the MOOC, as may be interpreted through particular questions posed to them regarding their personal and professional motivations for participating in online education programs. (This last qualification should be considered when comparing responses between MOOC and traditional MS∙PTC participants because the original survey taken by the program graduates was not taken by MOOC learners.) Nevertheless responses submitted through the MOOC regarding primary learning motivations—along with overall attitudes towards the professional value of the material, tasks, and learning outcomes offered within the program—can be rudimentarily
compared to the earlier MS-PTC survey. Where 56 percent of MOOC participants claimed that their primary motivation for enrolling in such programs was due to their personal enjoyment in learning about the featured topics compared to only 5 percent who participated to learn specific skills, we can conclude through participant work that more comprehensive competencies such as project planning, project analysis, and solution design were appealing. The competency of organizational design, however, suggested less alignment: While MOOC learners expressed a consistently strong regard for all project-based assignments, MS-PTC participants did not rank that variable as most important or important in terms of their jobs today, as demonstrated in Table 2.

In general, MOOC participants were drawn to a coherent, well-integrated set of tasks designed to develop a single, more unitary project. The MOOC surveys also demonstrated an overall high appreciation among participants for each of the module’s writing as well as multimedia assignments. This ranking seems to complement the general significance MS-PTC participants attribute to the competencies of written communication and visual communication. When MOOC learners chose to enroll in “The Strategic Communicator’s Toolkit,” they were clearly looking for distinct opportunities to develop both written and visual communication skills by working with current online communication tools. As Table 6 suggests, written communication should remain central to MS-PTC, with new opportunities identified for students to develop voice and persuasion strategies. Similarly, while visual communication remains important, new opportunities should be developed for video production and advanced graphic design skills. While each of the new variables should be maintained in MS-PTC, particular directions for advancing student learning should be newly considered.

In sum, program directors in the process of guiding graduate program curriculum design in technical communication will no doubt find it beneficial to consider the introduction of the variables, modules, and content identified in Table 6. It is important to recognize that these are manifestations of a particular evidence-based attitude toward programmatic research that lends itself to innovation and change.

Commencement

Use of the DFA interpretative framework—the design, codification, implementation, and revision, and assessment methods—has proven essential to the growth of NJIT’s MS-PTC. Use of evidence-centered assessment design has further made it possible to gauge more rigorously what issues matter most to instructors in the design and implementation of their courses.
Granted the last word in my role as the new program director, it seems only fitting to re-emphasize how any sense of an ending in the program’s DFA model of assessment signifies first and foremost a new beginning. In documenting their ongoing efforts to maintain a high level of quality assurance in the MS-PTC, one might do well here to recall the critical savvy of my colleagues Nancy W. Coppola and Norbert Elliot in their reference to exigence. While exigence respectfully expresses the often urgent nature of the types of changes and adaptations the field of technical communications routinely undergoes as media technologies continue to advance, one must be careful not to let it obscure the important learning opportunities program assessment can provide as a consistent tool of analysis and evaluation. It will no doubt be perpetually tempting to reduce many of these more recent changes to curricula and administrative practices to an “urgent” need to correct newly perceived imperfections in program identity. At the same time, assessment has provided an unparalleled structured opportunity for research and discovery through careful consideration of the learner’s own role in his or her instruction. Exigency itself, as my colleagues demonstrate, must be mitigated by principled action informed by evidence. Their observation of the need for both fluidity and cohesion is especially relevant.

As it is now being re-designed and re-constructed, MS-PTC stands at a particularly important crossroads in its long history of development. The post-print world, suggested as a mere possibility in 1994, has fully arrived. What is especially important to recognize is the centrality of what has been documented in this paper: The challenges the program now faces in its effort to adapt to these new education technologies will soon likely be general to all academic disciplines. Both the professional and social relationship between learners and instructors are in the process of being transformed at a number of levels; while such changes represent significant trials and even difficulties, they also offer important opportunities for student learning within the platformed sociality of our increasingly networked world. To this end, the interpretive framework described in this paper provides a proven and sound way to leverage success, both for ourselves and our students.
References


CPTSC 2010, the Council for Programs in Technical and Scientific Communication, 43-45.

Dillman, Don A.; Phelps, Glenn; Totora, Robert; Swift, Karen; Kohrell, Julie; Berck, Jodi; & Messer, Benjamin L. (2009). Response rate and measurement differences in mixed mode surveys using mail, telephone, interactive voice response (IVR) and the Internet. *Social Science Research, 38*(1), 1-18.


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Connecting Programmatic Research with Social Media: Using Data from Twitter to Inform Programmatic Decisions

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**Abstract.** Traditional data sources provide technical communication programs with a variety of useful decision-making metrics. However, many of these data sources are constrained by a variety of factors such as misalignment of institutional and programmatic goals and the summative nature of programmatic data and its subsequent application. Therefore, we argue for the use of data from Twitter to inform decisions about curriculum, assessment, and long-term programmatic vision. In this article, we outline relevant research questions related to programmatic decision making and then describe how to collect, analyze, and apply Twitter data to answer those questions.

**Keywords:** social media, Twitter, curriculum, assessment, data analysis

Academic programs are dynamic entities. Over time programs morph and mutate due to a variety of reasons, including institutional changes, economic or political pressures, student and alumni feedback, or faculty research. The goal for program administrators and faculty is to create academic programs that meet both short-term and long-term goals of the various programmatic stakeholders. One mechanism that has perhaps been underutilized by program administrators and faculty in the ongoing modifications of academic programs is data collected from social media. In this article, we argue that program administrators should use social
media data, specifically data collected from Twitter, in tandem with traditional academic decision-making metrics, such as enrollment, revenue generation, graduation rates, and job placement rates. While traditional metrics are helpful, they also are constrained by factors like institutional goals (which may not match discipline-specific goals), turnover in program administration that occurs with many academic service positions, and the summative nature of these types of metrics in that they often are analyzed annually or even less often. In contrast, the method we propose in this article allows for a more iterative programmatic decision-making process. Because the method can archive data from Twitter in real-time as well as data that goes further back in time, program administrators can use this data for a variety of programmatic decisions.

The use of Twitter within technical communication isn’t a new discussion. For example, Alice Daer and Liza Potts (2014) argue that social media should be integrated into the technical communication educational curriculum. Other research in technical communication has examined how social media’s timeliness and community building influence, affirm, and challenge long-standing technical communication frameworks. What has yet to be established is a way to harness data from Twitter to affect change at the programmatic and curricular level.

Ultimately, we argue that specific applications of Twitter data can equip program administrators with unique, data-driven arguments to aid in several types of programmatic decisions including decisions regarding curriculum, assessment, and programmatic vision. Here, we first provide a broad overview of the literature on social media in technical communication scholarship and discuss ways in which social media might be well-suited for programmatic contexts. After reviewing the prior literature, we describe a method for collecting and analyzing language data from Twitter. Finally, we’ll end the article by applying this approach to three common types of programmatic decisions.

**Social Media in Technical Communication Research**

As a communication tool, social media has received much attention from technical communication scholars. Daer & Potts (2014) note that between 2009 and 2014 more than 50 articles were published on topics like how technical communicators’ use social media tools; the role of social media applications in gathering, measuring, and distributing information; and the benefits of social media engagement for technical communicators such as career enhancement, gathering and analyzing large data sets, and building relationships with products and customers. In this section, we examine
literature about social media’s two unique characteristics: 1) its ability to share and archive timely and relevant information and 2) its capacity to develop deep insights about communities. We then examine literature about scholars’ efforts to account for social media pedagogically in light of these unique characteristics. Lastly, we review how technical and professional communication programs historically have conducted programmatic research.

**Social Media’s Capacity to Share and Archive Timely Information**

One valuable aspect of social media has been its ability for users to share timely information and for that information to be archived. In technical communication, this has been studied primarily through the exploration of crisis response to events. For instance, Liza Potts (2013) explored social networking tools in disaster cases like Hurricane Katrina, the 2005 London bombings, and the 2008 Mumbai attacks. In her work, she found that in times of crisis, people tend to ignore specialized sites set up by aid workers and instead use available social networking tools to perform activities such as sharing breaking news; quickly connecting with friends, family and strangers; and coordinating complex work that requires collaboration.

Similarly, Huiling Ding (2009) examined a medical crisis event and discovered how professionals and members of the public used alternative media to participate in unofficial risk communication during the 2002 SARS outbreak in China. Ding found that when official channels of risk communication were shut down due to economic and political considerations, people used alternative media to circumvent the communication barriers and quickly release risk messages to the public. Also in China, Juelin Yin, Jieyun Feng, and Yuyan Wang (2015) examined how the Chinese public responded to the Conoco Phillips oil spill. The authors examined Chinese social media websites between June 2011 and February 2013 to better understand the sentiment of the Chinese public following the oil spill that occurred on June 4, 2011. They found that, in general, a sentiment of anger and frustration was present in the social media posts during this time period.

These articles highlight social media’s capacity for users to quickly and efficiently share relevant information with the public—with many people actually ignoring traditional channels of communication and using social media instead. They also highlight the democratization effect that social media affords in that the people often favor social media to get and share the “real” story as opposed to a curated story produced by traditional media outlets. Finally, the studies also show the archival value of social media in that it allows researchers to examine a set time period in order to
understand public sentiment during that particular time period. While these studies clearly articulate many unique and positive characteristics of social media, we see much potential for examining how the timeliness and archival nature of social media might be used to inform decisions regarding technical communication programs, which is an area that has yet to be studied.

**Social Media’s Capacity to Develop Insights About Communities**

In addition to sharing timely information, technical communication scholars have also explored social media’s ability to develop deep insights about communities to which they may have limited access.

One strand of research on social media in technical communication has focused on how various communities use social media to find technical information. For instance, Jordan Frith (2016) examined online forums to gain insights into several unique communities of practice including communities of do-it-yourselfers (DIYers). He found that moderators on DIY forums thoughtfully employed information architecture to sub-forums in order to better serve and engage their fellow DIY community members. On the other hand, Frith also discovered that DIYers who were part of a flooring community found sub-forums to often be overly specialized and unhelpful. Overall, this study shows the value in examining social media to understand distinct characteristics of a particular community. That is, because social media provides communities of practice with a shared online space, knowledge sharing that would typically occur in private meetings or job sites is now openly shared. Similarly, Jo Mackiewicz (2010) examined a community of product reviewers on epinions.com and found, among other things, that the reviewers asserted expertise in product reviews using ten distinct strategies. In a related study, Mackiewicz (2011) found that epinions amateur editors exhibited similar skillsets to that of technical editors by using linguistic politeness strategies to motivate reviewers to make comprehensive edits.

Outside of online forums, some research has examined how Twitter is used to better understand a community of technology users. Chris Lam and Mark A. Hannah (2016b) examined the dedicated Twitter help accounts of six technology companies to better understand the information seeking practices of users. They found that this particular population primarily used Twitter to complain about a brand rather than seek support for a specific technical problem, which provides new insights into how this particular community of users used Twitter as a help desk. In addition to Twitter, Facebook posts have been studied by Mark A. Hannah and Chris Lam (2015) to gain insights into the posting practices of
agribusinesses. The authors examined Facebook posts from a sample of sustainable agriculture companies over a 12-month period and found that the public tended to prefer entertainment posts, or posts that worked to specifically connect and engage audiences, over posts that tried to educate or market to the public. The findings provide insight into the preferences of a community of users when engaging with businesses on Facebook. To reiterate, these studies show how social media is useful in learning about particular communities of practice. The shared nature of social media further provides researchers with access to communities who would otherwise might be difficult to access. Additionally, Mackiewicz (2011), Lam and Hannah (2016b), and Hannah and Lam (2015) all examine language data within the social media they are studying, which as we’ll describe later in this article, directly relates to the type of data analysis we are proposing.

Finally, some research on social media has specifically examined communities of technical communicators. Michael J. Faris and Kristen R. Moore (2016) recently explored the role of social media in the professional lives of writing studies scholars. They surveyed and interviewed emergent scholars to understand more clearly how and why scholars approach social media for professional purposes. Among other important findings, the authors point out the inherent tension that social media poses when searching for a tenure-track job or applying for a promotion. Mark A. Hannah and Chris Lam (2016) examined the blogging practices of a community of technical communication practitioners and found that practitioners were primarily interested in blog posts discussing technology as it relates to the profession. These two studies provide the basis for the present article in that they show how social media can be used to understand communities of technical communicators, which we argue, should be directly applicable to programmatic issues.

To briefly summarize, it’s clear that social media enables outsiders of communities to better understand practices, cultures, and even language patterns that are unique to those communities. However, no research has yet examined how social media can be used to specifically inform programmatic decisions. Therefore, we believe there’s a clear opportunity to applying social media data to inform issues related to technical communication programs.

**Social Media and Technical Communication Pedagogy**

While we’ve pointed out the lack of research on social media as it relates directly to technical communication programs, there has been some work that examines social media in the context of the technical communication
classroom. For instance, some scholars worked to broaden the field’s pedagogical practices in light of social media’s influence on technical communicators’ work. Melody Bowdon (2014) worked with a group of students to collaboratively code tweets created by the American Red Cross, the Centers for Disease Control and Prevention, and CNN in their response efforts to Hurricane Sandy in 2011. Bowdon’s aim was to help students identify and better understand how organizations deploy specific rhetorical moves to cultivate an ethos about its work. To foster more critical awareness of social media, Elise Verzosa Hurley and Amy C. Kimme Hea (2014) sought to disrupt the notion that social media writing was careless or unprofessional by devising a pedagogy centered on Bob Pearson’s (2011) concepts of reach—"the ability to form relationships, address user interests, and determine long-term effects of networking," and crowdsourcing—"the practice of tapping into the collective public intelligence to complete a task or gain insights that would traditionally have been assigned to a member of or consultant for an organization" (p. 57). Through this pedagogy, students came to understand how traditional markers of effective writing such as organization, conciseness, and clarity were present in much of the writing they published on Instructables.

Finally, Daer and Potts (2014) have started to bridge the gap between the application of social media and programmatic implications, at least on a curricular level. They offer best practices for incorporating social media into curriculum design including a belief that “social media can be used, adopted, and implemented best when its champions are thinking strategically, not just tactically” (22). To support such strategic thinking, Daer and Potts offer program administrators eleven suggestions for beginning conversations that will inform best practices for incorporating social media in a program’s curricula. These recommendations emphasize a need for flexibility and adaptability when accounting for social media in curricular strategies. More importantly for our purposes in this article, Daer and Potts provide an entry point for program administrators to begin considering the opportunities afforded by social media’s unique characteristics for programmatic decisions.

**Directions for Moving Forward**

We conclude this literature review by discussing how social media potentially connects with programmatic research questions. We present a broad overview of the main strands of programmatic research in technical communication, which has sought to answer a wide variety of research questions; however, the most prevalent concerns stem from three areas:
• **Curricular decisions:** (Balzhiser et al., 2015; Bay et al., 2010; Bemer, Moeller, & Ball, 2009; Carrington, 2015; Christensen, Gibson, & Vernon, 2010; Daer & Potts, 2014; Lam, 2014; Malone & Wright, 2012; McDaniel, 2015; Rehling & Lindeman, 2010). This scholarship investigates how to enhance student learning as well as align curricula to emerging trends in industry and technology. Examples of research questions that drive this area of inquiry include 1) do our current course offerings for majors align with the skills employers want in an entry-level technical communicator? and 2) what specific topics or courses will better align our curriculum with industry needs? Twitter data gathered from practitioners about the profession offer program administrators a timely and relevant resource for answering such questions.

• **Programmatic assessment and learning outcomes:** (Barker, 2012; Brumberger, Lauer, & Northcut, 2013; Charlton, 2012; Henschel & Meloncon, 2014; Johnson & Elliot, 2010; Reamer, 2012; Salvo & Ren, 2007; Vealey & Hyde, 2015; Yu, 2010). This area of research acknowledges the variety and limitations of assessment protocols and advocates for methodologies that support best assessment practices and innovate on the ways that programs partner with external shareholders to align their assessment practices with contemporary industry needs. Examples of research questions in this programmatic area include 1) how authentic are program outcomes and assessment methods? and 2) what competencies and genres should be addressed in an authentic, terminal deliverable? Twitter data gathered from practitioners, administrative colleagues, and students can be leveraged by program administrators to address such questions.

• **Long-term disciplinary and programmatic vision:** (Ford & Lanier, 2011; Gordon, 2009; Hall, 2015; Lanier, 2009; Lauer, 2013; Leslie & Northcut, 2013; Rude & Cargile Cook, 2004). At the core of this research strand is a concern with program visibility, specifically how programs present themselves to the world. Examples of research questions related to visibility include 1) should programs specialize in a specific sub-discipline of technical communication? If yes, what specialty should we focus on? and 2) what constitutes or makes up a good programmatic research partner? Data gathered on Twitter from industry professionals or prospective research partners can help program administrators tailor the ways they articulate and
present their programs’ work capacities to the world.

Overall, studies in these three areas have relied on a variety of data sources to inform their research including surveys and interviews of practicing technical communicators and academics, archives of job postings in technical communication, and academic and non-academic publications in technical communication. While these data sources have provided valuable insights into the programmatic areas of assessment, programmatic vision, and curriculum, we argue that there is much promise for the integration of Twitter data to factor into these areas of programmatic research and decision-making. We’ve previously outlined in the literature review how social media’s unique capacity to produce timely and archival data as well as to help researchers deeply understand communities make social media a rich data source for technical communication. In the remainder of this article, we’ll further articulate how and why program administrators can use data from Twitter to answer such programmatic questions. We’ll first describe the method of collecting archival Twitter data and then describe results from a sample data set as they apply to three areas of programmatic research: assessment, vision, and curriculum.

**Methodological Description for Archival Twitter Research**

As shown in the literature review, the incorporation of social media as a mechanism for informing specific programmatic decisions has yet to be researched. In this section, we will describe a way to begin to bring social media data to bear on programmatic decision-making. First, we present an archival methodology for collecting and analyzing data on Twitter. Following this methodological explanation, we’ll briefly provide an overview of a specific sample data set of archival Twitter data. Then, we’ll finish the article by applying some sample results from our data set to three common programmatic questions.

**Rationale for Twitter as a Research Site**

As described in Daer and Potts (2014), social media plays “a significant role in gathering, measuring and/or distributing information among technical and professional communicators” (Daer & Potts, 2014, p. 21). In that same article, the authors argue that Twitter is especially useful for program leaders as a means to connect with other academics. To extend this line of thinking, we believe that Twitter also provides a means for program leaders to connect with industry professionals. In fact, there exists a
thriving online community of professional and technical communicators on Twitter where community members share information about best practices, trends in the field, technical tutorials, and other discipline-specific content (Hannah & Lam, 2016). Finally, while many other social media sites like Facebook or Instagram rely on one-to-one "friendships" to view and share content, Twitter allows strangers to follow each other and form networks based on shared interests (Daer & Potts, 2014). Therefore, we believe Twitter provides a fertile ground for insights and knowledge about the field.

Collecting Twitter Data

To collect tweets, we used an application developed by Martin Hawksey called the Twitter Archiving Google Spreadsheet (TAGS). TAGS allows any user who has a Twitter Developer’s account and a Google account (both of which are free) to automatically archive tweets. This application allows you to create spreadsheets that archive hashtags, Twitter handles, or any other keyword. In this article, we'll briefly describe TAGS, but for a comprehensive treatment of TAGS, see Lam and Hannah (2016a).

When collecting data via TAGS, it’s important to consider whether an existing Twitter community or hashtag exists for the question you are attempting to answer. That is, social media allows researchers to gain insights into communities only if those communities in fact have a presence on Twitter. For instance, a program administrator would likely be interested in student retention for technical communication programs. But, it’s probably unlikely that there is a community of Twitter users who have rallied around the topic of student retention solely. Therefore, instead of creating an archive that stores the term “student retention,” we recommend performing an exploratory search on Twitter to see if there is a relevant conversation and robust community present. To determine if a search term is worth archiving, it’s important to examine:

- Quantity of tweets related to your search term (i.e., more tweets on a search the better)
- Frequency of tweets (i.e., if there are multiple tweets for a single date, the search term is probably more viable)
- Related search terms and how the terms are adopted (i.e., look for search terms that are widely adopted by a community of users)
- Sociality of tweets (i.e., look to see if certain terms are generating more replies, retweets, or quotes)

Once you have determined viable search terms, you can set up your
TAGS spreadsheet. Figure 1 below is a screenshot of the front page of the TAGS archival spreadsheet, which can be accessed at http://tags.hawksey.info. In text box 4, you will notice the use of Boolean operators to search multiple search terms in one spreadsheet. Alternatively, however, we suggest creating separate spreadsheets for different search terms so that your data is clearly separated once it is time to analyze the data.

![TAGS v6.0](figure1.png)

**Figure 1. Screenshot of TAGS front screen**

Once you have set up TAGS and the application has begun archiving tweets, the tweets will be stored in another tab within the spreadsheet labeled “Archive.” Figure 2 shows a screenshot of this archival sheet, which shows just an excerpt of the entire archival sheet. As can be seen, the sheet collects information like the username of the individual who tweeted, the text of the tweet itself, and time stamp information. For the purpose of this article, we are primarily interested in analyzing the data within the column labeled “text.”
There are two limitations of TAGS to consider when conducting your own programmatic research—both of which have bearing on the timeliness characteristic of social media. First, TAGS only allows you to go back ten days to archive old tweets due to restrictions that Twitter places on their database (you can go further back than ten days by purchasing the data through a third-party vendor, however). Therefore, if you are interested in an ongoing, longitudinal analysis of data, which we argue that you should be, you can set up your spreadsheet to automatically archive tweets as they happen and essentially collect the data in “real time.” A second limitation is the number of Tweets a single archive can store. Currently, TAGS can handle 20,000 tweets per spreadsheet. If your search term is extremely popular, an archive can fill up relatively quickly. Therefore, it’s important to check the progress of the archive every few days, and once the archive reaches the 20,000 tweet limit, set up a new spreadsheet with the same search terms.

**Data Analysis**

Once you have collected tweets, there are many potential methods for analyzing the data. Here, we walk through some basic methods for analysis that stem primarily from corpus linguistics. While it is outside of the scope of this article to provide a full treatment of corpus linguistic methodology, our intention is to provide program administrators of technical communication, who may not have any background in linguistics, with an entry point for examining patterns in language data and extracting meaning from this data. For a more comprehensive treatment of corpus linguistic methods, see Bennet (2010), which provides an in-depth look at using corpora in the classroom.
To analyze the data extracted from Twitter, we use AntConc, a free text analysis tool created by Laurence Anthony. AntConc is relatively easy to use and is very well supported by a wealth of user documentation and video tutorials. AntConc allows a user to complete a variety of textual analyses, but we will walk through three simple analyses: word frequency analysis, concordance analysis, and collocation analysis.

**Word frequency analysis.** The AntConc software has a keyword list function that presents the frequency of each word in the corpus from largest to smallest. This analysis provides a logical starting point for basic patterns in the data. Generally speaking, a higher frequency indicates that the particular keyword can provide some meaningful insight simply due to the prominence of the word in the corpus. The word frequency analysis has inherent limitations because a simple frequency list does not provide any context for each keyword. Therefore, additional analyses must be completed including concordance analysis and a collocation analysis.

![Figure 3. Screenshot of Word Frequency List in AntConc 3.4.3m](image)

**Concordance analysis.** The concordance analysis allows a researcher to examine keywords in the context in which they occur. In AntConc, the concordance feature allows a user to highlight and sort words to the left and the right of any keyword in question, which provides a visualization...
from which a researcher can draw conclusions. This additional context allows a researcher to start to make more meaningful conclusions about a particular keyword. For example, a keyword like “strategy” (see Figure 3) may occur often in a data set. A concordance view of the data might reveal that most of the occurrences of “strategy” were in the context of content strategy (as opposed to marketing strategy, for example). Figure 4 below shows a screenshot of the AntConc concordance screen. As you can see, AntConc allows you to view the most-used words in context of your target word, and it color codes the words. Figure 4 shows that the word “content,” marked in red, always occurs before the word "strategy." Additionally, if you are working with a corpus over a particularly long period of time (e.g., five years), AntConc has a concordance plot feature that visualizes where a word is mentioned in the corpus. This is particularly useful if a word’s occurrence suddenly drops off or increases as it could indicate some interesting historical pattern.

**Figure 4. Concordance screen in AntConc 3.4.3m**

**Collocation analysis.** Collocation provides a researcher with additional context for keywords within a data set. Collocation, however, provides an explicit list of words that significantly co-occur with a keyword. Therefore, collocation can be used to confirm a hypothesis based on a concordance analysis by showing an exact list of words that co-occur with the keyword in question. Using our previous example above, a collocation analysis could reveal that the word “content” is significantly associated with the
word “strategy.” The finding is essentially the same as revealed by the concordance analysis, but the collocation provides additional statistical support. Figure 5 below shows that the word “content” co-occurs with “strategy” more frequently than any other word.

Figure 5. Collocate screen on AntConc 3.4.3m

Describing a Sample Archival Dataset

We created a sample archival data set using TAGS and collected tweets marked with the hashtag #techcomm from the time period of February 27, 2014 to June 18, 2014, which represented four full months of data. During this time period, TAGS archived 13,434 unique tweets. A variety of industry professionals, academics, and corporations actively use this hashtag to denote tweets related to technical communication including tweets on topics like job advertisements, educational resources, best practices, and commentaries about the future of the field. We chose to archive this general hashtag as opposed to a more targeted search term because we feel it provides the largest quantity of data as well as the most relevant data.

Finally, we want to briefly discuss the ethical implications of collecting and analyzing data from Twitter. First, because our application of this data examines textual data in aggregate, the actual data itself is anonymous. Therefore, the application of such data places no risk on the individuals who tweeted using the hashtag #techcomm because their usernames are
not included in the analysis. However, if program administrators are interested in analyzing and attributing decisions to specific individuals, ethical guidelines relating to the use of social media data should be considered (see AoIR ethics guidelines (Markham & Buchanan, 2012) for a broad overview on the topic).

**Answering Three Potential Programmatic Questions Using the Archival Method**

As we outlined in the literature review, programmatic research in technical communication has focused on questions about curriculum development, assessment, and long-term vision. In this section, we’ll examine how archival Twitter data might speak to these three common programmatic questions.

**Answering Curriculum-based Questions with Archival Twitter Data**

As outlined in the literature review, programs are interested in decisions about curriculum. This could include decisions about individual courses, course rotations, new certificates, or degree offerings. As described previously, some relevant research questions include

- Do our current course offerings for majors align with the skills employers want in an entry-level technical communicator?
- What specific topics or courses will better align our curriculum with industry needs?

While comparing course offerings to other programs is a helpful and necessary starting place, we argue that examining archival data on Twitter might provide a program administrator with complementary insight. To determine whether a program’s curriculum aligns with industry job trends, a natural place to start is by analyzing the word “job” within our sample data set.

As described previously, we can use AntConc’s word frequency feature to search for the word “job.” Based on this search, “job” ($n = 1,051$) ranked as the 27th most-used word in the data set, which makes it highly prevalent in the sample. We then examined the word “job” using a concordance analysis and found that “job” was unsurprisingly used in the context of job advertisements. That is, individuals or companies were sharing job advertisements for technical communication jobs on Twitter, which further legitimizes Twitter as a valid data source for contemporary news and trends regarding technical communication. That is, if people or companies are posting jobs (over 1,000 jobs were mentioned in a four-
month span), there is an assumed audience for those advertisements in the technical communication Twitterverse. After examining the word “job” in context, we conducted a collocate analysis, which revealed several interesting findings in regards to words that were significantly collocated with the word “job.” Table 1 displays the top five collocated words with the word “job.” As seen in Table 1, the word “editor” is the most frequently associated word alongside “job.” This is particularly interesting as it indicates that the core competency of editing continues to be extremely important for those seeking technical communication jobs. However, another interesting finding stems from the next two most frequently collocated words, “API” ($n = 235$) and “XML” ($n = 128$). The high frequency of these technical words also illustrate how technical communication continues to progress. Finally, the words “senior” ($n = 107$) and “junior” ($n = 78$) seem to indicate a slight preference for senior-level hires.

<table>
<thead>
<tr>
<th>Word</th>
<th>Frequency</th>
<th>Stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Editor</td>
<td>367</td>
<td>7.18</td>
</tr>
<tr>
<td>API</td>
<td>235</td>
<td>7.76</td>
</tr>
<tr>
<td>XML</td>
<td>128</td>
<td>6.06</td>
</tr>
<tr>
<td>senior</td>
<td>107</td>
<td>7.41</td>
</tr>
<tr>
<td>junior</td>
<td>78</td>
<td>7.87</td>
</tr>
</tbody>
</table>

Therefore, the results of the data analysis might affirm or challenge a program’s current curriculum. First, the data shows that the important core competencies of technical communication, namely editing, are still essential skills in a contemporary job market. As a majority of programs likely already offer specific courses on editing, this finding should affirm the program’s current course offerings. On the other hand, the findings could push program administrators to consider educating students in more contemporary genres (e.g., API) or in technical markup (e.g., XML). We see several avenues for incorporating this finding into curricular decisions. The first option, which has the lowest barrier to entry, is to offer students extra-curricular workshops on technical topics like API writing or XML markup. Secondly, programs could work to integrate these technologies into current course offerings. Finally, programs could create
new courses that focus on teaching these newer genres and/or technologies if they had the staff to do so. Regardless of the approach, all three of these options could help programs better provide their students with instruction on relevant and contemporary topics in technical communication.

**Answering Assessment-related Questions with Archival Twitter Data**

Prior research shows that assessment, both at the curricular and programmatic level, is a vital component of program administration. To this end, relevant programmatic research questions about assessment might relate to what Han Yu (2010) calls authentic assessment:

- How authentic are program outcomes and assessment methods?
- What competencies and genres should be addressed in an authentic, terminal deliverable?

Two of the authors of this article recently had to answer both of these questions when we replaced our existing terminal deliverable—a comprehensive written exam. This exam included traditional written questions on style, editing, design, and a design memo. We determined as a committee that such a deliverable did not represent an authentic representation of competencies needed to be a technical communicator. Therefore, we decided to replace the exam with a more authentic assessment—a print and digital technical communication portfolio. However, what remained unclear were the types of deliverables required for such a portfolio.

To answer the question of what genres or competencies should be represented in the final portfolio, we searched our sample dataset for several genre-related terms. Table 2 shows the frequencies of these searched terms. Of particular interest is the overwhelming use of the word “content” in the data set. While “content” is not genre-specific, it is indeed related to a variety of genres. To better understand the context of this finding, we examined the concordance plot and collocates of the word “content” and found that the word “strategy,” “strategist,” and “content strategy” significantly co-occurred with the word “content” 326 times. Content strategy, while not solely for web-based content, is often associated with the genres of web authoring (Halvorson & Rach, 2012). Therefore, it’s relatively safe to assume that “content” in the context of this data set refers to web-based content. Additionally, there were other web-related terms that significantly co-occurred (387 times) with “content,” including “structured,” “management,” “dita,” “xml,” “reusable,” “metadata,” and “intelligent.” To add to this finding, Table 2 also reveals a
relatively low frequency of more traditional print-based genres like manuals, reports, brochures, and flyers. Also of interest is the prevalence of the word “video,” which recent scholarship suggests is an emerging technical communication genre.

Therefore, based on this data set, a portfolio used to assess student work should almost certainly include some non-print-based genres such as structured or modular web-based writing. It might even be relevant to have students include video tutorials or other web-based training materials.

<table>
<thead>
<tr>
<th>Genre or Genre-related Term</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>1410</td>
</tr>
<tr>
<td>Documentation</td>
<td>312</td>
</tr>
<tr>
<td>Video</td>
<td>254</td>
</tr>
<tr>
<td>Elearning</td>
<td>199</td>
</tr>
<tr>
<td>Presentation</td>
<td>155</td>
</tr>
<tr>
<td>Proposal</td>
<td>71</td>
</tr>
<tr>
<td>Instructions</td>
<td>70</td>
</tr>
<tr>
<td>Manual</td>
<td>69</td>
</tr>
<tr>
<td>Website</td>
<td>58</td>
</tr>
<tr>
<td>Report</td>
<td>18</td>
</tr>
<tr>
<td>Brochure</td>
<td>0</td>
</tr>
<tr>
<td>Flyer</td>
<td>0</td>
</tr>
</tbody>
</table>

**Answering Questions Related to Long-term Vision with Archival Twitter Data**

Finally, technical communication programs grapple with establishing and communicating a long-term vision for a program to ensure relevancy in future years. As previously described, some relevant research questions might include
• Should our program specialize in a specific sub-discipline of technical communication? If yes, what specialty should we focus on?
• What skills or research interests should we look for in a new hire in order to shape our program’s long-term vision?

While data from Twitter shouldn’t replace research of other similar regional and national programs, Twitter data can reveal trends that may complement the research program administrators are already conducting. When considering long-term vision, program administrators must also differentiate fads from trends when considering and communicating a programmatic vision. This task, of course, requires insider knowledge and experience within the field—something that Twitter can’t provide on its own. However, over time, a program could use longitudinal Twitter data to see how trends shift from one year to the next.

To address the question of specialization, we examined our sample data set for keywords that point to related sub-disciplines or specialized areas of expertise. For example, we searched for specific disciplinary keywords and found that “UX (n = 658), “design” (n = 251), and “marketing” (n = 224) were highly prevalent in the data set. There were also 700 instances of words related to the web including “elearning” (n = 199), “web” (n = 169), “html” (n = 167), and “mobile” (n = 165). Additionally, one could argue that “ux” is also closely related to the web. Furthermore, the word “design” was significantly collocated with the words “web” (n = 33) and “responsive” (n = 33), which seems to indicate that the design in this data set is more associated with web design as opposed to visual design or graphic design, which co-occurs with “design” only three and four times respectively. Therefore, there seems to be a strong trend towards the web within technical communication, which also seems to support the results of our previous analysis of genres in the data set.

Based on these findings, a program might consider some area of web or UX specialty in its long-term vision—perhaps in a minor, certificate offering, or even a programmatic rebranding. Of course, analyzing how these trends evolve over the next year, or five years, or ten years, is essential to truly differentiating a fad from a trend. Furthermore, considering current and future resources should be important factors in the decision as well. However, contextual knowledge certainly supports the rise of the web and UX as an integral part of technical communication.

**Reiterating the Value of Twitter Data for Program Administrators**

Before concluding this article, we want to briefly rearticulate the value of this data collection and analysis methodology we’ve presented for
program administrators. As program administrators, we often look to data in order to craft our programs, our courses, and our pedagogies in ways that are reflective of ideas and concerns beyond the perhaps insular opinions of the faculty. Data collected by universities on behalf of programs (such as graduation rates, retention rates, major change rates, etc.), while perhaps "better than nothing," often hold within them their own challenges. Such data are often context-free, thus the data becomes un-actionable, as administrators can't determine what modifications to the program resulted in data variations. Some data collected simply aren't relevant to the programmatic nature of administrator concerns. Further, such data is "dropped" on administrators at regular intervals, which provides administrators with summative evaluations of the program but prevents formative evaluations. Beyond institutional data, when programs collect data for programmatic purposes themselves from employers and students in the form of surveys or interviews, we often run into small response rates as well as self-reporting problems.

All data collection comes with limitations, and data from Twitter is no different. Only those technical communicators who self-select to tweet (and tweet with specific hashtags) are part of the data set; therefore, it may only be representative of a smaller (but influential and vocal) subset of the field. In the system presented here, the data set can always be both formative, in that it can aid in immediate decision making and forecast future discipline behaviors, and summative, in that the longitudinal nature of the dataset can provide a longer term assessment of where predictions of future field endeavors went accordingly or astray. It provides immediate context for various applications and processes, while also allowing a longitudinal view of the field.

We propose that Twitter-based data (along with other social media data) should be another tool to be used in concert with university-collected data, department-collected data, and expert opinion in making programmatic decisions. We believe that with its focus firmly affixed to the practitioners and experts who shape the constructs of the field, Twitter-collected data can enable program administrators to more reliably reflect the workplace actions and needs of the field in programmatic decision-making.

Conclusion

In this paper, we have laid the groundwork for accessing, collecting, analyzing, and ultimately applying Twitter data to programmatic decision making. The approaches presented in this paper represent just a fraction of
the potential that social media presents for programs in technical communication. For example, one way to use social media would be to incorporate it into a freshman or sophomore level technical communication course. Students in these courses could be encouraged (through instructor enthusiasm, extra credit, or course requirements) to tweet in response to course topics with a dedicated hashtag. The program administrator could then analyze this data in a multitude of ways, including determining student mastery of certain topics, ascertaining the students’ attitude of the course, and finding out what other hashtags students associate with the course. Furthermore, analysis of this data may allow administrators to better tailor classroom instruction and potentially improve overall recruitment and retention for both the program and the university.

While the examples presented in this article will not be perfectly applicable for every program, we do believe that the general underlying principles of data driven decision-making and argumentation do apply to all programs. Additionally, we also realize that programs must consider other sources of data when making decisions (e.g., academic metrics like graduation and retention rates), but we hope that this article encourages and enables readers to use Twitter as a viable and realistic data source. Finally, many of the examples and anecdotes in this article are hypotheticals drawn from sample data sets. However, we do want to reiterate the fact that one of the authors has used specific findings from the sample data described in this article to make specific and actionable curricular changes to the graduate program. Ultimately, we believe that Twitter data can be a valuable mechanism for collecting data about the field, and we believe that this data could be a critical tool in helping administrators craft their technical communication programs.

References

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


Christensen, David; Gibson, Keith; & Vernon, Laura. (2010). The role of the cognate course in graduate professional communication programs. *Programmatic Perspectives, 2*(1), 23-41.


Ford, Julie Dyke, & Lanier, Clinton R. (2011). If you build it they will come: Establishing a research group at New Mexico Tech to increase campus visibility of the technical communication program. *Programmatic Perspectives, 3*(1), 96-106.


Hannah, Mark A., & Lam, Chris. (2016). Patterns of dissemination: Examining and


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Disempowered Minority Students: The Struggle for Power and Position in a Graduate Professional Writing Program

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Abstract. To meet the complex realities of our contemporary society, academic programs in technical writing should examine diligently the current lack of African-American participation and explore possible ways in which programs may be marketed, revised, and shaped to meet the expectations and needs of potential African-American students. This study used individual interviews with five African-American women while they were pursuing graduate degrees (MA and PhD) in a professional writing program. With a theoretical framework of positionality and agency theory, this article describes with detail how these women faced complex challenges: choosing such a degree program, learning needed academic and career skills, negotiating invisible racial difficulties, and creating support systems for themselves. The article concludes with suggestions for creating programs that may be more amenable to the challenges faced by minority graduate students, like the women in this study.

Keywords: African-American women, minority graduate students, position, agency, power, powerlessness.

In the professional and technical communication field in which we regularly talk and research issues of globalization and internationalization, we rarely focus on our local and national diversities. One area in which we might seek to engage with the lives of African Americans is in our academic programs and courses.

Seemingly few students applying for and enrolling in technical writing programs are African American, despite the fact that graduate technical and professional writing programs are increasing in number across the nation. As reported by Rachel Spilka in 2007, few African Americans enroll in technical writing programs, even fewer in such graduate programs. Across the nation, the lack of African-American participation in technical and professional writing programs is a serious issue, suggesting a field
with narrow interests and a career path that may overlook the interests and expectations of African-American communities and students. Moreover, published research about African-American participation in professional and technical writing programs is rare. This lack of full social representation in our academic program enrollment and in our scholarship is disheartening: it suggests that efforts at recruiting more students of color and of offering scholarships to students of minority backgrounds have little effect. It also suggests that recruitment efforts alone may not be enough to more suitably engage with the interests and needs of diverse student populations. To meet the complex realities of our contemporary society, academic programs in technical writing should examine diligently the current lack of African-American participation and explore possible ways in which programs may be marketed, revised, and shaped to meet the expectations and needs of potential African-American students. We should ask ourselves how we can build on the strength of diversity within our own programs in order to become known for our research and scholarship in African-American research interests. We should ask ourselves how we can re-structure and re-design our programs to make them more attractive and effective for the goals and interests of our local African-American student population. If we can find ways to make undergraduate and graduate programs attend to and address the interests of the African-American community, we can strengthen our programs, can help improve the lives of the potential students, and can enhance the field of professional and technical writing.

The following study explores with in-depth, qualitative analysis some of the challenges faced by minority students as they participate in graduate programs in technical and professional communication. The statements from these students’ interviews show that issues of power and position are key to understanding the complex and challenging lives led by minority students seeking to empower themselves through higher education, including to what extent minority students are positioned and can position themselves to better access knowledge, to engage in collaborative support systems, and to empower themselves for choices made in academic degree paths.

Previous Research

In recent years, some attention has been given to studying the issues of minority students in higher education. For example, Frances Stage and co-authors (2003) report that African-American students often face significant frustrations with academic life, especially in predominately white
institutions, because they have to struggle with such issues as low institutional expectations, lack of informal faculty contact and support, and less than hospitable social environments. However in regard to the specific field of professional and technical communication, when we look at African-American student issues of recruitment, retention, and graduation, very little research has been accomplished. Spilka reported at the 2007 Conference on College Composition and Communication on the dearth of African-American students in professional and technical writing programs. She suggested that two reasons may account for this lack: African-American students are not introduced to the field of technical communication or have no knowledge of it as an academic pursuit or career aspiration, or that these academic programs may be seen as too stringent and demanding for minority students who may be perceived as having little aptitude or preparation for fields that require superior literacy skills. Spilka suggested that perhaps the field needs to change its approach to recruiting and teaching students of color. Another partial reason for the lack of African-American participation in the field of professional and technical communication may be related to what cultural technological scholars call the “technological divide,” which splits the American population between those who can afford and who are at ease with computerized technologies and those who cannot afford and do not use computers. This divide is typically along racial lines, as Adam Banks noted in his book, *Race, Rhetoric, and Technology* (2006). Cynthia Selfe and Gail Hawisher’s (2004) book, *Literate Lives in the Information Age*, reveals more disturbing trends in the “digital divide” indicating that while much of this divide broadly occurs along simple racial lines, it is also a divide that runs deeply through familial generations, so that as one generation encounters technological inaccessibility because of racial and socio-economic status, the future generations may also continue this same divisional trend. Such studies show us that academic programs that incorporate technological use and access must be very aware of racial, socio-economic, and generational trends in that use and that these same programs should try to counteract the current divisive technological trend.

Moreover, published research in the field of professional and technical writing about African-American issues, such as career opportunities, history, and community engagement, is also rare, although some is available. In 2004, in regard to technical communication among minority students, Emily Thrush argued that “it is startling how little research has been done on subcultures within the United States” (p. 424). In 2003, Lee Brasseur closed her cultural critique of visual technical information by
calling for future studies to provide “a more prominent place in the technical environment for the views [of minorities and those in lower socio-economic status] to be heard” (p. 150). In the past decade, some studies in the field of professional and technical writing have begun to show how technical writing may impact the lives of African Americans, drawing attention to the history, the communities, and the career opportunities of African Americans (Haas, 2012; Moore, 2013; Williams & Pimental, 2014). For example, Miriam William’s rhetorical analyses (2005, 2010) of antebellum regulatory documents reveals that the purpose of these documents is less to protect the rights of all citizens, and more to protect the rights of the upper-class; Williams also reveals that many of these same rhetorical strategies may still be used in current regulatory documents. In another study (2009) of city pollution policies and the documents used to propose, enact, and support those policies, she and Daisy James show how minority neighborhoods are impacted by these policies. They provide details about the public forums held by the city of Houston on the development of its clean air policies in public forums. Such research is important not only by what it reveals in analyzing technical documents, but also in what such research tells about people who are impacted by these technical documents, especially the disempowered positions of many minority people. In her 2013 commentary, Williams acknowledges the growing body, although still small, of research and teaching of ethnicity and minorities in professional and technical communication, and she hopes that in future scholarship issues of race, ethnicity, and social justice will be researched by scholars of all races and will address other fascinating topics . . . As we embrace this research, and as our field becomes more diverse, I urge you to also consider courses, at the undergraduate and graduate levels, that . . . give students the opportunity to wrestle with race, ethnicity, and technical communication. (p. 91-92)

This new foray into research about technical communication and minority peoples is vital and highly promising, yet the small number of studies that speak directly about the challenges faced in improving the participation of minority students in graduate programs in professional and technical communication is troubling.

A few recent articles explore issues of racial and ethnic diversity in professional and technical communication, three spear-headed by Gerald Savage. Specifically, Savage and Natalia Matveeva (2011) acknowledge that although much important work has been accomplished to address issues of age and gender in the field, issues of race and ethnic diversity
Disempowered Minority Students

...have often escaped our notice. With Kyle Mattson, Savage (2011) argues for a much more sensitive and nuanced way of understanding the term diversity, and they argue that while much research shows the benefits of including issues of diversity and multiculturalism in the curriculum of higher academia, such benefits do not necessarily exist simply by increasing the enrollment numbers of minority students. Instead, we need thoughtful curriculum and pedagogies that seek to create these benefits and that seek to benefit all students, rather than focusing on the enrollment numbers alone. Savage and Mattson surveyed schools and colleges about their goals for increasing diversity in their student body, faculty membership, and curriculums; the results of their survey showed that many academic programs are quite aware of the need for and the challenges faced in creating greater academic diversity in their technical and professional communication programs. Another article later co-written by Savage, along with Natasha Jones and Han Yu (2014), reported on the progress that many programs were making in recruiting students of diverse populations, noting, however, that much work still remained. Despite their acknowledgement of the challenges facing recruitment and retention issues for increasing the number of students of minority status, none of these articles, however, describes with detail the kinds of challenges that minority students face when participating in these programs. This study answers questions about what it is like to be a minority student in a professional and technical communication program. Such questions, which guide the research of this study, include the following:

- Traditionally, a graduate degree has been viewed by society as a path to empowerment and success. Thus, does, and to what extent, a graduate degree in technical and professional communication help (or hinder) minority students succeed in empowering themselves?

- What are some of the challenges faced by minority students who try to move into positions of advanced knowledge and careers in technical and professional communication?

- Traditionally, family support systems are often integral to a student’s ability to succeed in college. Thus, does, and to what extent, family support help or hinder minority students seeking to earn advanced degrees in technical and professional communication?
• Can the answers to some of these questions be used to help us redevelop our field and our academic programs to make them more amenable to minority student success?

To add to this nascent and much-needed conversation about diversity in technical communication, this study addresses a small group of students, African-American women, who have been traditionally marginalized and disempowered in society in regards to both race and gender.

Theoretical Framework of Positionality and Articulations

To interpret my findings in regards to issues of power and empowerment, I turn to postmodernist theories of positionality, agency, and connections, particularly the cultural studies theory proposed by Stuart Hall (Grossberg, 1986). A decade ago, Nancy Rounder Blyler (2004) explored Hall’s definition and construction of power in her article identifying critical interpretive research. From her understanding of cultural studies, she theorizes that power may be productive, not just repressive, and that power is situational—always dependent upon its relationships to other entities (p. 145). While much of her article is strongly focused on research methods and methodologies, her use of Hall’s theories is pertinent to any study that engages questions of power and culture, and that attempts to explore social practices “in relation to one another, because significance and meaning result from the connections among practices in specific situations” (p.146). Stuart Hall’s theory of power and ideology is based on a dyadic use of the word, “articulation,” which implies the British notion of linkages and connections (i.e., an articulated lorry or truck connected to a trailer) and the linguistic notion of speaking with meaning. In an interview with Lawrence Grossberg (1986), Hall defines articulation:

the form of the connection that can make a unity of two different elements, under certain conditions. It is a linkage which is not necessary, determined, absolute and essential for all time. . . . the articulation of different, distinct elements which can be re-articulated in different ways because they have no necessary belongingness. (p. 53, italics in the original)

This theory is particularly useful for thinking about academic programs, because it theorizes that ideology and power are not necessarily determined by socio-economic status, class, or social position. Power and disempowerment are not unchanging. For teachers, this theory
undergirds what we do. If power and disempowerment can change, then people, like students, who find themselves at odds with the current powers that be, may find ways to re-articulate their positions and the ideologies around them. If people can change, then people can learn. Thus, rather than seeing power as static and repressive, as other Marxist theorists like Foucault might do, using a theory of articulated power, we can research how power is situated, changing, connected, broken, and re-connected in our programs and in our students.

Hall’s theory of articulated, situated relationships of power parallels that of, perhaps unknowingly, the psychological theories of positionality, proposed by Rom Harre’ and Nikki Slocum (2003). Originally a practical psychological method of resolving disputes, positionality theory now is used to help many researchers understand how meaning and power are enacted. In this regard, researchers consider the relative positions of people within certain situations and scenarios, situations that Harre’ refers to as “story-lines.” For conflict resolution, analyzing how people enact their positions within certain stories helps therapists, and the patients themselves, negotiate the changing of one’s position and story. Thus, in positionality theory, power is enacted within the relationships between people, positions, and possible stories. If a person takes a position of leadership or expertise, and the other people in that story/situation act as if they accept that person’s expertise, then the positions of both parties create the power of that person. As Harre’ and Slocum state, “the rights implicit in one’s positioning oneself in a certain way serve to position someone else or some institution in the correlative position” (p. 106). Then, to recreate different power structures or positions, or to resolve disputes about power, the parties tell different stories, or, in other words, take on different positions, with different rights and obligations.

To parallel this theory of positionality with Hall’s theory of articulation, power is enacted in the articulations between the positions of people, the agents and actors of the stories. Both of these theories—that of articulation and of positionality—are theories that view power structures in a dynamic regard (van Merkerk and van Lente, 2008). For, if power structures are acted upon based on the positions of people, and if people can change the power dynamics by changing their positions, then power is situational, changeable, and socially constituted in the relations between people, not in distant, static, pre-determined abstractions of socio-economic status, like caste systems or a fatalistic view of power. That is, power is contingent, not constant; constructed, not conferred; created, not conceded. Further, these theories of articulations and positionality
allow us to see people as agents participating within powered structures. Thus, agents have the ability (i.e., agency) to create, change, and re-create by re-articulating positions the systems of power in which the agents reside. These three terms—agency, articulations, and positions—are of great importance when exploring the powerful academic systems in which many traditionally disempowered people, particularly African-American women (twice marginalized by race and by gender), participate. In some ways, these same terms (actors/agents) and theories (the mutability of power through the changing positions of people) are reminiscent of Actor-Network Theory (ANT), in which changing relationships between actors (sometimes people) and material things are examined and described. However, ANT is often best put to use when describing existing structures, rather than examining causal relations—the why and how relationships developed and redeveloped; moreover, it is often used to describe the influence and act-ability of non-human actors (machines, technologies, tools, etc.) in their relationships to other elements of a network or system. While ANT is an exceptionally good analytic method for understanding some material-semiotic relationships, other theories (here, positionality and articulation theory) may be better for understanding human motives and actions, especially those studies that seek to answer why some network relationships exist and how they can be changed; this study seeks to move beyond an ANT descriptive analysis of the relationships between minority students and the higher educational system, in order to understand why and how these minority students negotiate their positions within traditional power structures. How power can be re-articulated in traditionally powerful institutions, like academia with traditionally asymmetric positions of power, is an important consideration for those of us who work in academic programs. This study, then, attempts to explore African-American participation in professional and technical communication and is my attempt to answer the question of how I can participate in changing the traditional power structures to help improve the learning and lives of minority people.

Research Methods

This qualitative study, based on interview data, explores the perceptions of five African-American women in a graduate Professional Writing program, a program situated within a larger English department. Their participation in a graduate program of any discipline suggests that they were attempting to improve their lives, in effect to attain some measure of power in their academic pursuits and through that, to strengthen their
social status. In 2007, I received a small research grant from the Council of Programs in Scientific and Technical Writing (CPTSC) to begin studying the issue of African-American involvement in the field of professional and technical communication, a proposed study that was also approved by the university’s IRB committee. Five African-American female students, Felicia, Paula, Roberta, Wendy, and Winona, (pseudonyms, as per IRB policy), in the Professional Writing graduate program at a large, southern, urban university were interviewed in the spring of 2008. I recruited these women from the list of then-enrolled students, in which six identified themselves as African-American women (one student was unreachable). Two were finishing an MA degree, one was mid-way through an MA degree, one was nearly finished with her PhD, and one was newly finished with her PhD. All women were between the ages of 25-35 (see table 1).

Table 1: Age and education backgrounds of study participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Current degree sought</th>
<th>Prior degree obtained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felicia</td>
<td>32</td>
<td>Recently finished PhD in Professional Writing</td>
<td>Bachelors in Journalism</td>
</tr>
<tr>
<td>Paula</td>
<td>30</td>
<td>Finishing MA in Professional Writing</td>
<td>BA in Pre-Law</td>
</tr>
<tr>
<td>Roberta</td>
<td>24</td>
<td>Beginning of MA in Professional Writing</td>
<td>Bachelors in Education</td>
</tr>
<tr>
<td>Wendy</td>
<td>28</td>
<td>Finishing MA in Professional Writing</td>
<td>2-3 years course work in biology and computer science; BA in English</td>
</tr>
<tr>
<td>Winona</td>
<td>34</td>
<td>ABD in Professional Writing</td>
<td>2 years coursework in biology; BA in English</td>
</tr>
</tbody>
</table>

Each interview was conducted either in my office with a voice recorder, or by email if the individual was not living nearby. The interview questions were broken into three sub-sections: family background and demographic information, general academic information, and information specific to the field of professional and technical communication. These field-specific questions asked these women about their reasons for
choosing such an academic path, the problems they encountered along the way, their perception of the program, and the reasons why they were successful in their academic pursuits (for a full list of questions, see Appendix A). Each live interview (3) lasted approximately one-and-one-half hours, and the voice recording was later transcribed and coded according to concepts of power, position, and articulations. In the coding process, I tended to work with large, conversational segments, like lengthy responses to questions or brief anecdotes or examples used in their responses, as the interviewees referenced issues of power, position, articulations and linkages, rather than by small phrases in which the word “power” or “position” might have been mentioned. This type of analysis builds on articulation theory, in which the coding themes address issues of positionality—how meaning is derived from the position of something in relation to its context—the linkages between thing and context. For example, when Felicia responded to the question about difficulties faced in her graduate program, she stated “... and about half the time it was not my personality that turned people off, it was people I was associated with, and by the time I figured that out, it was too late. I was either praised or knocked down, and that was it.” This sentence reflected positionality in regard to her relationship with other people, and it reflected an understanding of self-power (or rather a lack of self-power), in which she was unable to change people’s perception of her, because “it was too late.”

Admittedly, the study has limitations, most notably that of the small number of participants, which certainly precludes any generalizable data. However, these were the only African-American women simultaneously enrolled in that program at that time. In a study seeking, in part, to understand the dearth of minority students in professional and technical communication, having only a few participants makes some sense. Further recruiting participants from other graduate programs in professional and technical communication would not have given the same level of detail about a single program, as was gained in this qualitative study. This study does not offer generalizable findings; instead, it seeks to share some insights gained through its qualitative, content analysis of the interviews in which the five minority students reported the challenges they faced. Yet, results of this study do suggest that much more research, both qualitative and quantitative, should be attempted so that program developers can learn how to develop more supportive programs and how to recruit more diverse student populations.
Results and Discussion

The results of this entry-level foray into the issue showed that these women, from traditionally disempowered populations, had remarkable experiences and expectations that are often overlooked in the ways in which we structure our graduate programs. All of the women expressed very positive qualities about higher academia: they had a high sense of self-esteem and held high expectations for themselves and for their families. Mostly, they were thrilled to be a part of a research study that hoped to bring to the forefront their unique challenges and accomplishments in the field of professional and technical communication. In reading through the interview transcripts, three themes of power repeatedly appeared in these women’s interviews: 1) nuanced themes of power in relation to family roles and positions, 2) articulations of self-efficacy in regards personal and professional power, and 3) articulations of relationships to friends and academic support systems. These concepts of power and position prompted my deeper reading of the theories of power and positionality so as to better understand some of the more nuanced ways in which power is experienced by these minority students. In all, these nuanced perceptions of power, or lack of power, show those of us who construct and build academic programs how much more can be done to help minority and other traditionally disempowered students learn and achieve success in our programs.

Articulations of Family Power

In their interviews the women were asked general, demographic questions about their families’ educational background; thus they were free to expand on the topic of family involvement in their own educational pursuits, as well as on their parents in particular. Their responses reveal a complex view of family influences and support, with encouragement and expectations of earning a college degree, but having received little specific advice or help and no encouragement to pursue careers in professional and technical communication.

Of these graduate students, three were raised in two-parent households, and two students were raised solely by their mothers. Of the five students, all of their mothers had attended college, although only two of the mothers completed a college degree. In regards to the fathers, only two fathers attended college, but no father earned a college degree (see table 2). One interviewee spoke of strong bond with her mother for emotional encouragement and support, while two other students spoke freely about the help they received from their sisters. One other
interviewee who didn’t mention a sister talked more about being supportive of her brother who had experienced “learning development problems early on,” and for whom his “high school diploma is still his most important piece of paper.” Two of the interviewees were less vocal about the maternal influence in their academic pursuits, seeming almost reticent to mention their mothers or fathers, even when prompted. All of these women expressed very strong family expectation for acquiring a college degree, although three of women said that they did not receive much support from their mothers or parents for getting admitted to college or for wisely selecting a career path.

**Table 2: Information about maternal and sisterly involvement in college pursuit**

<table>
<thead>
<tr>
<th></th>
<th>Parent(s) attended college?</th>
<th>Parent(s) finished college?</th>
<th>Sibling support?</th>
<th>Family expectation for college</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felicia</td>
<td>Mother attended; Father did not</td>
<td>No</td>
<td>Gave to brother</td>
<td>We just kind of always knew we were going to college. My parents told us that there was elementary, junior high, high school, and college, even though my dad never went and my mom didn’t finish, even though she did attend for a couple of years. But, for them, it was not an option that high school was the end. College is the end; what you do after that is your business. If you want to keep going, or if you want to get a job, okay that’s nice, but for them, raising us was getting us through college. But, I can’t ever remember ever having any focused conversations on it. It was just kind of an expectation mentioned here and there.</td>
</tr>
<tr>
<td>Paula</td>
<td>Mother attended</td>
<td>Mother earned BA</td>
<td>No siblings</td>
<td>My mother always told me that I was going to go to college. She went, and my aunt went. It was just what was going to happen.</td>
</tr>
<tr>
<td>Roberta</td>
<td>Mother attended</td>
<td>No</td>
<td>Yes</td>
<td>My sister went to college, and that was like an expectation for me to go.</td>
</tr>
<tr>
<td>Wendy</td>
<td>No mention</td>
<td>No mention</td>
<td>No mention</td>
<td>I was only told to go to college by my parents, but there was no preparation. Grade school did not prepare me either.</td>
</tr>
</tbody>
</table>
What is notable about these responses is the extent to which these women held the expectation that a college degree was both a measure of achievement and prestige, as well as their unwillingness to break that family expectation. A college degree was ironically both a way to earn a type of social power, but without having to be powerful enough to break the family expectation. Particularly noteworthy are Felicia’s and Winona’s comments about their own power for achievement: Felicia remarking that she “was always a high achiever,” and Winona stating, “Giving up was not an option.” However, while all the interviewees spoke of an unbreakable expectation that they attend college, none of them chose to major in English or professional and technical communication as their first choice in college. Instead, they were encouraged by the family to pursue degrees in fields that would earn good money or professions that would bestow a type of power and privilege on them, typically law or science. The choice to pursue a degree in professional and technical communication was made individually; see table 3 for descriptions of their degree choices.

Table 3: Reasons why they chose a degree in Professional/Technical Communication

<table>
<thead>
<tr>
<th></th>
<th>Descriptions of choice to study Professional/Technical Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felicia</td>
<td>BA, MA in Communication. I wanted to go into television broadcasting, but after my Master’s I think I just kind of hit that quarter-life crisis that a lot of people in their early twenties just kind of have. And, I was just kind of depressed, and that was kind of difficult, but not school wise. When I didn’t have a job or anything in communications, I applied for the PhD program in English, because my mother attended school here.</td>
</tr>
<tr>
<td>Paula</td>
<td>The summer of 2001, I was a program director at the YMCA, over youth programs, and then in May of 2002, I resigned that job to go to law school. And, so I was there for a year, and I came back in May 2003. And, I decided I always wanted my Masters in English, so I just jumped into that. So, this is how I got there.</td>
</tr>
<tr>
<td>Roberta</td>
<td>BA in education. After I got my BA in education, I decided I really didn’t want to teach because I don’t have much patience with children. I wanted a job with [named a large, well-respected, local logistics company], but I needed more training. So, I decided to get my MA in Professional and technical writing.</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Wendy</td>
<td>I majored in biology, psychology, and computer science before I turned to English. Who, if anybody, helped you? I went to career counseling at the [university]—did not help. My parents wanted me to major in computer science because I could make more money. No one really helped. I just had to remember my passion—English.</td>
</tr>
<tr>
<td>Winona</td>
<td>I had majored in biology for two years before changing my major to English. I had no idea that I could have then prepared for a career as a science writer. Instead, I planned to teach college English and write novels. After my first semester of graduate school, I took a break and learned about different career options for me. I then found a master’s program in professional writing and thought about pursuing that degree, but I decided to finish the program that I had started. Later, I took a technical editing class to see if I would like the work. I loved it, and I did well in the class. I then applied for a Ph.D. program in professional writing.</td>
</tr>
</tbody>
</table>

Here it is noteworthy that four of these women describe that choice of professional and technical communication in terms of remembering how much they liked literate acts of reading and writing, with Winona stating that she thought “many African-American women love to write.” Roberta did describe her choice of an academic major in terms of preparing for a specific career. Winona and Paula later stated how much they loved doing editing, with Paula lamenting that she would probably always work in a teaching career, but what she really wanted to do was to be an editor. Rather than seeing professional and technical communication, and an advanced graduate degree in such, as an articulation of power and professionalism, they tended to see their choice for professional and technical communication as a fallback, after their first failed attempts to pursue the powerful, financially rewarding and prestigious careers their families had chosen for them. In regards to positionality and articulations, as theorized by Hall and discussed earlier, these women’s experiences reflect the tenuous sway of family relationships and familial expectations. The experiences show strong family encouragement for college degrees and to see college degrees as an avenue for power and prestige, yet the women’s choice of a graduate degree in Professional Writing was not the kind of pursuit encouraged by their families. While the connections between college and power and between family and student were powerful and recognizable, the choice to pursue a graduate degree in Professional Writing required each woman to choose against the career path envisioned by her family. Thus, the articulation of familial power was undeniable but not inviolate in these women’s experiences, which shows that for each of these women, they re-articulated their family relationships in choosing their own educational path.
Articulations of Personal and Professional Power

In terms of positions of power, these women seemed more likely to describe themselves in terms of power, rather than seeing the field as a powerful position. For example, they tended to describe themselves as “high achiever,” “school person,” “highly competent,” “intentional,” and with action-oriented verbs: “decided,” “chose,” “planned,” “researched,” “prayed,” “jumped right in,” and “did it myself.” In describing the field, rather than seeing power and professionalism as inherent qualities in professional and technical communication, they saw it as a broad field with diverse options; in other words with many possible articulations for them, some more powerful than others. Wendy stated that her goals for her degree were “to write proposals, and maybe open up a continuing education school for literacy, [Then] receive a PhD and travel the world teaching the profession.” Winona remarked:

The field is diverse. It involves editors, writers, instructors, and some other professionals. Depending on the task to be completed, it may require extensive technical knowledge or simply the ability to decipher and convey technical information. . . . Within the past year, I have obtained a position that involves the type of ‘high quality’ work that I would like to do.

For these two women, the advanced degree opened many possible avenues in which they could pursue future work and livelihoods. They could articulate their degree to certain types of work, like research, editing, and writing, moving and re-articulating as career situations around them changed. In terms of Hall’s articulation theory, the knowledge gained in the pursuit of an advanced degree in professional writing could be connected for a time to certain types of career pursuits, then re-connected to other pursuits. Such ability to articulate and re-articulate one’s career and degree seems both appealing and empowering to these women. However, while both of these interviewees saw the field as broad and diverse with many different opportunities, Wendy, however, seemed to struggle with a view of herself as not prepared for those positions:

I do not feel as if I have adequate knowledge to achieve anything in the field. . . . Students need to know what jobs are looking for in a person with a professional writing degree. We need to be marketable.

In this statement, Winona seems to be expressing disappointment in her college classes, as well as a measure of disappointment in college in general. Perhaps she perceived a college degree as something that should bestow knowledge and marketability onto the student, rather than
seeing herself as an active pursuer of that knowledge. At the end of her MA degree, Wendy was neither satisfied with the amount of learning that she had experienced, nor in her own ability for independent learning: “I should have made an appointment to talk to someone to find out if the program would meet my needs,” she stated. Winona, however, seemed more at ease with a sense of incompleteness of a college degree, that a college degree does not always mean a full expertise in a career:

One lesson that college teaches is that options abound. Many of my friends do not think like college graduates in that they do not realize that they can set a course for their future and follow it. A college degree by itself does not translate to an enjoyable career. It is just a starting point. College graduates must ensure their own course by being intentional.

What is striking in both of these comments is the disparity between their identities as powerful people and powerful learners: Wendy did not see herself as having achieved a position of power, whereas Winona was much more positive about her abilities. Moreover, Winona perceived her PhD degree as just one of many powerful articulations open to her, but Wendy was more likely to see her MA degree as an articulation that did not give her any special skills or experiences, much more as a passive recipient of the knowledge that a college degree should hold, rather than in descriptions of empowerment. The disparity in their view of their own learned competencies might stem from the difference in the degree, the PhD having a much more extensive course work than the MA, but given the level of Wendy’s stated disappointment, one could also assume that there were also real differences of self-image.

**Articulations of Relational Power with Friends and Mentors**

In regards to their involvement with the field of professional and technical communication, all five women stated that they had not been encouraged to develop any kind of academic network in the field, although Winona did network successfully on her own, attending a meeting of a local STC chapter and establishing freelance opportunities through that communication. With the exception of Winona, none of these advanced students held a membership in a professional organization or subscribed to professional journals; in fact, they seemed a bit surprised when asked if they had any such memberships. Winona attended the STC meeting, after being encouraged by her advisor to apply for one of the STC scholarships, which she later was awarded. As to friendships and other social networks, Paula spoke at length about the strength and necessity for friends while
attending law school; in her view, strong friendships were like “a family,” and having that support system was the only way that she could envision anyone completing law school. Despite her having constructed several strong friendships in law school, including some with white women (a fact that she noted on her own), she did not mention any friends in her current program, Professional Writing. Winona mentioned having friends in her bachelor’s degree, but only in regards having an enjoyable social environment. During the interviews, most of the women did not report having a strong academic support system, outside of their teachers and advisors, which by Roberta’s and Wendy’s description seemed very weak. While a few of them mentioned friendships outside of their academic degree program, most of them spoke more of their own accomplishments and achievements in the professional and technical communication program, than about friendships or emotional support in their pursuit of that degree. In other words, networking and support systems, like study groups, collaborative projects, and other informal academic support, that many other students may have, especially those from Caucasian or upper-class backgrounds, were not accessed by these African-American women, or at least not to an extent that they recognized or discussed. In fact, while all the women were students at the same time, often in the same classes, none of them mentioned the others by name. What is seemingly clear, however, was that each of the women spoke more of herself as an individual, than as a member of a group, discussing more about her own accomplishments, decisions, and challenges, than about conversing with friends or studying with a group; these women seemed more willing to articulate and discuss themselves in connection to their choice of degree and career, than in connection with supportive friends or classmates.

Even while the lack of academic networking, formal or informal, may have been disempowering to these students, all them offered more dismaying stories of other challenges in their academic pursuits. Wendy said that she wished that there had been a class on grant and proposal writing, but when she asked for such a class, she was told by the department that they did not have the resources to offer it. She then said, “Not enough student and professor interaction. Too much professor and student distance. I would have liked to do some research with certain professors; however, time would not permit it.” This sentiment was unknowingly echoed by Roberta who expressed real frustration with a lack of helpful feedback and involvement with faculty. Another woman said that she almost lost her tutoring assistantship in an Engineering department when she had to miss several days while her husband was
hospitalized. She reported that her supervisor in that department filed a grievance against her for those missed days, but that the graduate advisor supported her and re-awarded her an assistantship for the next year. In her interview, she described herself as “bewildered” and as feeling somewhat betrayed: “I come from a master's program that was very supportive. . . . they would have sent me a cake or called or something.” Another woman, Felicia, angrily told of being the scapegoat of a racially motivated battle between two faculty members in her previous institution: “I didn't know what was going on, or why Dr. *** seemed to have it out for me, but then my advisor told me that it was really between him and Dr. ***,” and she continued to relay the story about a long-standing racial feud between the two professors.

Some of these stories about the students' lack of support and even their sense of betrayal and sabotage are disheartening. There’s no denying that some faculty, no matter the field or discipline, might be racist and sexist, but it is dismaying to realize that such prejudices can significantly impact our students' learning and achievement of success. The challenges these women faced in earning their degrees—a lack of social or academic support, having to choose between family priorities and workplace commitments, and racial discrimination—reveal the extent to which they lacked the power to change the academic situation around them and the extent to which they were unable at times to formulate more beneficial and positive articulations for themselves.

As to the subject matter of a degree in professional and technical communication, three of the women expressed some frustration at not receiving enough instruction in the technological skills they thought were necessary for a career in professional and technical communication, with the harshest criticism coming from Wendy who stated that she was “highly disappointed . . . because I did not learn the technological skills that I wanted to learn.” Because she had previously described her bachelor’s degree as having spent two years in computer science, the comment that her master’s degree did not supply her with necessary technological skills was surprising. But, this dissatisfaction was also expressed by Felicia and Roberta. These same three women also voiced some frustration at the lack of clarity of the definition for the field of professional and technical communication. “What is it?” asked Felicia, “Is it Professional Writing or is it Technical Communication? You all need to decide what this field really is.” While many of us might or might not agree with her, perhaps this lack of definition somehow hampered her own learning—that had she known more what it was she supposed to have learned, she might have learned
better. This sense that the field of professional and technical communication is amorphous and undefined perhaps led Wendy and Roberta to describe the field in terms of isolation and distance, a field closed to them: “the professors in this field should make a conscious effort to broaden their audience so that more people can know what it’s all about.” Winona, however, expressed a more positive view of the field and of the opportunities afforded to her by virtue of its study:

If you love the writing process and learning new things, the field of Professional Writing can be a wonderful thing. . . . Many African-American women love to write. I think the dearth of African-American women in the field is owed simply to a lack of awareness of the career option.

Conclusion

The study’s findings, albeit small and limited, lead to several suggestions for improved graduate program re-development, suggestions that may be of use to others working to redevelop their graduate programs in professional and technical communication in order to recruit and retain more diverse student populations. Several steps below may be applicable to other programs trying to help their minority students achieve academic success and build a more positive attitude toward the field of professional and technical communication.

- **Encourage membership in academic and professional networks.** As in the case of Winona, being awarded an STC scholarship allowed her to see herself as a member of a much larger group of like-minded individuals, and certainly provided a measure of some financial security.

- **Strengthen academic and career counseling.** In light of Wendy’s stated frustration and disappointment in her college classes, it seems obvious that students should be given adequate and realistic information about possible degree paths, along with realistic acknowledgement about the limits of a college degree.

- **Clarify the learning outcomes and expectations for success in courses and in the field.** All students, not just minority students, should know what they can expect to learn and to know when they have succeeded in meeting those outcomes.

- **Clarify and define the field.** As experienced by Felicia, an unclear and undefined field makes it hard for students to know what they can expect to do in their careers. The lack of a clear-cut definition for
the field is a long-standing dispute in the field. Felicia was not the first scholar to have noted it; however, Felicia’s experience should show us that our lack of a clear title may be disadvantageous to some of our students.

- **Help students recognize their own successes by clarifying and acknowledging what they have learned and helping them build on what they know.** Transcripts of Paula, Roberta, and Wendy show that these women did not fully recognize their own achievements or knowledge, and as such, they seemed less able to articulate career paths and options for themselves.

- **Increase “skill application” courses—computer applications, publishing, grant writing, internships.** As Wendy and Roberta’s experience shows, students want more courses in which the knowledge learned is directly applicable to work situations.

- **Encourage supportive peer networks.** All students can benefit from supportive peer networks for studying, collaborative projects, career advice, etc. For these minority women, the assumption they held for themselves seems to have been that they should be able to manage the demands of graduate course work on their own and be fully independent. However, especially for Paula, Roberta, and Wendy, their satisfaction and self-esteem might have been better had they been encouraged to forge some peer networks.

- **Improve our own abilities to be beneficial mentors/advisors.** We could offer improved mentoring to our students by encouraging them to seek out and build supportive peer and professional networks, and we could offer workshops and mentoring to other new faculty about the sometime unique challenges faced by minority students.

- **Be aware of students who don’t ask for help.** These are often the students, like Wendy and Roberta, who subconsciously feel like they should do it by themselves, to “go it alone” and are thus most likely to suffer needlessly.

- **Produce and encourage scholarship that is pertinent to a broader audience that includes minority members.** As more students and potential minority students see themselves and their experiences represented in published research, they may begin to see the field of professional and technical communication as a broad, diverse, and welcoming field to skilled employees of all ethnicities.
The results of this study suggest that these students, who in the history of professional and academic pursuits have been marginalized and relegated to minority status, may find it difficult to move into positions of professional legitimacy and power, unless academic programs take steps to redevelop programs that more appropriately meet the needs and support sought by minority students. It is vital that our field explore opportunities to increase and enhance the diversity of our academic programs as we become a field more influenced by global business and technical demands. Exploring the positions and perceptions of African-American students in graduate technical writing and communication programs, as this study has attempted in a small way, suggests several directions for further research, and it may help us design programs that contribute to a supportive environment for minority students as well as benefiting students of all backgrounds. Jones, Savage, & Yu (2014) argue that diversifying our classrooms does not simply mean that we welcome newcomers who were previously “underrepresented or excluded”; rather, it means that in seeking “real diversity,” we should challenge our classrooms and our workplaces to change and merge with “previously underrepresented populations” (p. 134). In meeting the needs and of minority students, we will simultaneously strengthen our scholarly, academic fields by broadening and deepening our interests beyond that of the traditional interests of technical writing.

References


Jones, Natasha; Savage, Gerald; & Yu, Han. (2014). Tracking our progress: Diversity in technical and professional communication programs. *Programmatic Perspectives, 6*(1), 132-152.


Appendix A: Interview Questions

Demographic Questions

What is your age?

How do you describe your ethnic heritage?

What is your current designation in the university?

How many years, counting this one, have you been enrolled in this graduate program?

How many years, counting this one, have you been enrolled at this university?

Academic Background

How many other people from your family, including your parents, attended a college or university?

How many people earned a college degree? What were the degrees?

How were you prepared for higher education? Who, if anybody, helped you prepare for college life?

What difficulties, if any, did you face when you began college? How did you resolve those difficulties? Who, if anybody, helped you?

Retrospectively, what do you wish you had known about attending college before you matriculated? Please explain.

What advice would you give to a young, African-American woman who is thinking about pursuing a college degree? Why?

Professional Writing Program

1. Why did you choose to major in Professional Writing?

2. What difficulties, if any, did you encounter in this program? How did you resolve those difficulties? Who, if anybody, helped you resolve those?

3. Who, if anybody, helped you prepare for a degree and career in Professional Writing?

4. What classes did you find helpful for your degree and for your career goals?

5. What classes do you wish you could have had?
6. Do you currently have a job or career in the field of Professional Writing?

7. What do you hope to achieve with your degree in Professional Writing? What career goals do you have for yourself with this degree? What “life” goals (if any) do you have with this degree?

8. What is your perception of the field of Professional Writing in general?

9. Do you belong to any professional organizations specifically related to Professional Writing?

10. Retrospectively, what do you wish you could change about this Professional Writing program?

Reasons for Success

1. To what or to whom do you attribute your success in this graduate degree program?

2. What advice would you give to a young, African-American woman who is thinking about pursuing a graduate degree in Professional Writing? Why?

Author Information

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Acknowledgements

I wish to thank the CPTSC grant committee, which generously funded this study, and to thank the anonymous reviewers and the not-so-anonymous guest editors Lee-Ann Breuch and Tori Sadler; their close readings, comments, and patience were unparalleled in getting this manuscript to publishable quality. Finally, I am sincerely grateful to the five women who took a chance to explain a little bit of their lives to me. I hope I have lived up to the trust they showed.
Strategic Assessment and Usability Studies: Tracing the Evolution of Identity and Community Engagement in an Undergraduate Professional and Technical Writing Program

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Abstract. In this article, we reflect on ongoing, annual assessments at our institution: Saginaw Valley State University, a regional, teaching-focused institution in Michigan’s Great Lakes Bay Region. Our programmatic development includes a recent external review conducted by the Council of Programs in Technical and Scientific Communication, and follows the cycle of assessment-to-implementation through several revolutions, tracing the evolution of usability studies as a defining local theme in our undergraduate program in Professional and Technical Writing (PTW). Annual cycles of reflection and assessment resulted in the development of a programmatic commitment to usability studies, including the development of a space to enact these practices. Further consideration of that commitment during ensuing years revealed a deepening student connection to concepts and strategies from usability studies. Although this article traces our own journey, we conclude by offering a five-part heuristic for programmatic development that readers may find useful for thinking about their own administrative priorities and practices.

Keywords: usability studies, participatory design, program administration, professional and technical writing, assessment, writing research centers

In the inaugural issue of Programmatic Perspectives, James Zappen and Cheryl Geisler (2009) frame ways in which communication technologies—
particularly computer-mediated technologies—are emblematic of a “fundamental shift in information design from the efficient delivery of information to users to more immersive user experiences” (p. 5). Our own story in a small rhetoric and professional writing department at Saginaw Valley State University (SVSU), a regional, teaching-focused university in Michigan’s Great Lakes Bay Region, parallels this fundamental shift toward a more-focused, nuanced understanding of user experience and usability studies. Locally, assessment of student portfolios serves as a significant catalyst for our programmatic evolution toward usability studies through public intellectualism and service learning.

“Information design is currently experiencing a transformation from its traditional emphasis upon system performance and the user satisfaction that results from system functionality and efficiency to a greater emphasis upon the quality of the user’s engagement with the system” (Zappen & Geisler, p. 7). As our department underwent fundamental changes in 2010 (events we discuss later in this article), usability studies offered us two particular ways to enact programmatic evolution. First, we saw a focus on usability studies naturally coalescing with existing programmatic emphases on public intellectualism and service learning. Second, a programmatic focus on usability studies could provide our students with a better understanding of the ways in which users engage with documents, interfaces, and other information artifacts. Research in the field of technical and professional communication during this timeframe also appears to support a trend toward incorporating usability studies into programmatic initiatives.

In their study “Current State of U.S. Undergraduate Degree Programs in Technical and Professional Communication,” Lisa Meloncon and Sally Henschel (2013) report that only 11% of undergraduate curricula in technical communication offer a regular course (either elective or required) in usability studies. They note, however, that from 2005 to 2011 (the years between their study and that by Sandy Harner and Adrienne Rich upon which they build), the number of academic programs that require such a course increased from 1% to 11% (p. 56), indicating a growing programmatic emphasis across the discipline on connecting students with these concepts. Our own programmatic evolution, driven by programmatic assessment, mirrors ongoing shifts in user experience, usability studies, and disciplinary directions.

In this article, we reflect on our own ongoing, annual assessments, including a recent external review conducted by the Council of Programs in Technical and Scientific Communication (CPTSC). We follow the cycle of
assessment-to-implementation through several revolutions, tracing the evolution of usability studies as a defining local theme in our undergraduate program in Professional and Technical Writing (PTW). Annual cycles of reflection and assessment resulted in the development of a programmatic commitment to usability studies, including the development of a space to enact these practices. Further consideration of that commitment during ensuing years revealed a deepening student connection to concepts and strategies from usability studies. Although this article traces our own journey, we conclude by offering a five-part heuristic for programmatic development that readers may find useful for thinking strategically about their own administrative priorities and practices.

Professional and Technical Writing at Saginaw Valley State University

The SVSU Professional and Technical Writing (PTW) program launched in 2001 as an assembly of courses from its host department (English), Graphic Design, and Philosophy. By 2005, the program underwent its first revisions, resulting in the streamlining of curricular options. Between 2005 and 2013, seven faculty members were hired to facilitate study in PTW; five remain active in the program. In 2010, the PTW program relocated from English into its own department, Rhetoric and Professional Writing (RPW).

The current PTW curriculum prepares students to become generalist technical communicators. That is, we do not serve a niche industry or specialization. Rather, the program is designed to develop professionals to enter a variety of industries and to serve a variety of roles. Alumni work in traditional industries: computer, automotive, insurance, and publishing, among others. Other graduates have secured positions with organizations that demand generalist expertise, such as nonprofits, libraries, or political organizations and government offices. Philosophically, the program emphasizes critical thinking and critical doing, a blend of concept and strategy—of theory and practice.

We translate such broad concepts into assessment practices by defining four areas of professional and programmatic knowledge: 1) writing, 2) design, 3) communication tools and technologies, and 4) theoretical perspectives. These areas are broadly conceived, allowing students to explore and develop their own interests and specializations within the curricular structure. Later, we’ll elaborate on these assessment areas.

Students engage in a variety of information design projects, from scholarly arguments to professional documents, such as proposals,
instruction sets, and reports. In all instances, we emphasize awareness of audience, context, purpose, and professional and ethical considerations. Students negotiate these emphases as they develop into reflective, adaptable information designers.

In a session from the 2010 meeting of the Association of Teachers of Technical Writing (ATTW), Bill Williamson, the RPW Department’s first chair, described the PTW program this way.

PTW … is a conceptually rich cultural enterprise founded on critical thinking and action, dependent on awareness of many layers of literacies, and dedicated to civic responsibility and community building. We teach our students to be adaptable, creative, and context-aware. They learn to be professional, authoritative, and attentive to details. They learn that forms and genres are only the beginning places for the real work of communicating to diverse audiences, that technology may function among other things as a tool, as a medium for expression, or as an impediment to social equity. And, they learn that when you need to get something done, you learn how others think, how they solve problems, how they view the world, and you find a way to create the possibility for entering into productive partnerships with them. (Williamson, ATTW)

Despite our broad-spectrum approach to curriculum development, many students opt to seek deeper knowledge that serves specific professional profiles. Historically, student interests emerged around topics such as alternative energies and environmental communication, digital journalism, entrepreneurial studies, and usability. Students who seek experiences that help them build such specializations often emerge as leaders within their programmatic cohorts, and just as often they explore pathways by which they might apply that knowledge in the communities in which they participate. That spirit of public intellectualism is important to the program.

Programmatic Emphases and Assessments at SVSU

Public intellectualism and service learning have always been important to individual PTW faculty. All department members are engaged in a variety of community initiatives that connect classrooms and offices to locations and challenges beyond the university. It is therefore logical that such commitments emerged as key elements of PTW’s programmatic identity during its ongoing evolution. When Kay Harley’s exploratory committee formulated its initial vision for a PTW program, they emphasized hands-on knowledge of writing strategies and engagement with real communication
challenges. Such philosophical framing resulted in courses built on service learning initiatives and on an internship or cooperative education experience as requirements for graduation. They saw such practices as a way to balance theoretical approaches with pragmatic goals.

Significantly, faculty members have maintained a consistent commitment to fostering student participation in programmatic administrative processes. PTW students have historically responded well to both the expectation and the opportunity, embracing possibilities for engaging in research projects and programmatic initiatives. Also, student research and information development projects regularly contribute to the success of a range of campus clients, including the RPW Department. As active members of the conversation about curriculum development and in response to the demands of their work in the campus community and beyond, students began requesting courses on video production, digital publishing, and usability studies.

PTW undergrads regularly position themselves as advocates for users and other stakeholders. They have in recent years completed usability studies on behalf of the university library, information technology services, and the university writing programs, among others. Ongoing projects include research collaborations with the SVSU Writing Center, Career Services, Web Development, and our first ventures involving corporate partners. In addition, individual members of our departmental faculty engage in a variety of high- and low-stakes pedagogical and administrative initiatives on campus. In this context of scholarly and professional service, usability studies and associated design practices anchors departmental contributions to its campus and community constituents.

We want to pause here to revisit how a confluence of cultural forces created an exigence for programmatic growth around usability studies here at SVSU. Ultimately, it is our ongoing commitment to regular, reflective, and targeted assessment in PTW that helped us generate programmatic action around this area of inquiry. By 2006, we had committed to annual assessment of portfolios from our capstone course (RPW 481 Managing Document Design Projects). Our institutional standard was at that time to assess programs every three to five years. However, because our program enrollments were in the 15 to 30 range at that time, we found value in assessing every graduating class. That practice has been useful for programmatic decision making, and thus we have maintained it even as the program has grown and evolved. More recently, SVSU hosted an assessment team from the CPTSC. We will address the internal mechanism first.
Annual assessments evaluated portfolios from the capstone course on the four broad areas of professional and programmatic knowledge we identified earlier: 1) writing, 2) design, 3) communication tools and technologies, and 4) theoretical perspectives. These knowledge areas blend rhetorical strategies (audience, purpose, context, and genre) with theoretical perspectives, and practical knowledge (technology and project management, for examples). These areas are assessed through nine core competencies: audience, purpose, genre, context, language, technology, design, theory, and project management. RPW faculty score 0–5 for each competency based on evidence of proficiency demonstrated in portfolio materials. A score of 0 indicates the standard for proficiency was not met, and a score of 5 indicates the highest possible proficiency. Faculty reviewers may also indicate a category score of NA (not applicable) or NM (not measurable). Portfolios are randomly distributed to faculty members, who score each category based on the above rubric. Each competency is then assessed an average score, which is used to calculate the cumulative average competency for a given assessment year. The composite average score from 2009–2012 is 3.48; scores from 2009 are the lowest so far at 3.0335, and 2011 represents the highest scores at 3.9 (Herzog 2015, p. 46). These scores provide a baseline for better understanding students’ proficiencies with these core competencies.

Annual portfolio assessments have helped focus attention on student proficiencies and areas for growth. In contrast, the program review by the CPTSC provided a comprehensive assessment of our program. During the 2014–2015 academic year, RPW Chair Brad Herzog lead the department faculty in conducting a self-study. This internal review included questionnaires distributed to current students and alumni, focus groups coordinated by a colleague from the Psychology Department, and a review of comparable programs across the United States. The external review followed the self-study. The CPTSC representatives interviewed faculty, students, and administrators, toured facilities, conducted classroom visits, reviewed materials such as the self-study and departmental website, and attended a meeting of our student organization. Their report recommended strategies for programmatic refinement and growth that emphasize marketing and publicity, curriculum, and ongoing service-learning initiatives.

These assessment activities helped us establish and maintain a programmatic commitment to usability studies. Even that emphasis evolved over a few cycles. The portfolio review from 2005 demonstrated that enrollees on the cusp of commencing from the program were capable
writers but were less consistently adept with concepts in visual rhetoric and information design. Specifically, we recognized a need for our students to be more consciously aware of the rhetorical and information design choices they were making for audiences outside of academic contexts. Responding to assessment results, PTW faculty engaged in curriculum reforms that would expand the range of foci for knowledge building, but remain anchored in the well-established strengths that had defined the first years of study in the program.

Following the 2014-2015 academic year, we assessed portfolios in our introductory course (RPW 260 Introduction to Professional and Technical Writing) in addition to those from the capstone course: “Based on our assessment and discussion of the 481 and 260 portfolios, we noted that many of the authors revealed an insufficient awareness of their audience in their work” (Herzog, p. 40). Although we certainly hoped students would more effectively demonstrate proficiency with audience awareness, we also recognized this as an opportunity for usability studies to help students better understand user needs. This focus appears to align with the external reviewers’ recommendation for increasing service-learning opportunities, specifically highlighting the Center as a space to facilitate the integration of such projects.

Our studies from 2006 to 2010 showed us that our students were weak overall in demonstrating how their work was informed by theory. Exit interviews and focus group discussions revealed that many of our students saw theory as a disconnected, peripheral activity, and generally not central to their academic needs or professional development goals.

One particular scholarly deficiency students exhibited was a lack of a critical understanding of nonacademic audiences. In other words, even when creating documents for external users and contexts, students struggled to see beyond the professor and classroom when crafting information products. For example, although portfolios should be designed with potential employers in mind, documents designed by PTW students instead often referred to coursework, or otherwise situated the authors as students rather than as professionals. Although this struggle for contextual awareness is certainly not unique to our program, we wanted a way to help our students more genuinely theorize about external audiences.

Usability Studies offered a means for helping students to bridge the gap between their notions of practical knowledge and the faculty’s programmatic commitment to developing reflective practitioners capable of engaging in theory building. Although usability was at that time one
element of content among many in the Instruction Writing course, some of our faculty members began to develop a much more consistent commitment to integrating user-centered design into the student experience of PTW. Williamson states during an episode of *The Technical Rapport* podcast: “[Usability] went from being an idea that was really at the periphery of the curriculum, but central to our needs [to] become absolutely core to the studies that our students are engaged in by the time they are done with their degree.” Indeed, usability studies is essential to our students’ experiences. We will return to that thread in a bit when we describe three core courses that implemented usability.

We see the combined mechanisms of internal and external assessment, and the programmatic actions they inspire, as ways to help students improve their rhetorical strategies, audience and context awareness, and to apply appropriate, constructive theoretical models to their professional development and communication activities.

**Usability Studies as a Site for Scholarly and Professional Engagement**

In our scholarly and pedagogical investigations of usability studies, we maintain consistency with the broader programmatic and professional philosophies that we foster in the PTW program at SVSU. That means exploring the complementary relationships between theory and practice; framing investigatory methodologies in the context of design; and design itself as a collaboration among technical communicators, employers and clients, and audiences with whom content is meant to connect. We regularly link the work of developing professionals in the program with people and ideas through exploration of ethics and civic engagement, moving beyond disconnected pedagogies where students design information products without the benefit of a practical, cultural context. In these ways, we see our programmatic assessment as being strategic because it is a locally-situated (Huot, 1996 & 2002), reflective practice, operating at the convergence of theory and practice and student feedback. To make these intersections more tangible, we will trace the thread of usability studies as a unifying methodology through our undergraduate program in several ways in the sections that follow. But first we begin by framing usability itself as an area of study.

Although the history of usability studies is connected to several disciplines, including software development and human factors engineering (Redish and Barnum, 2011), it has been an integral part of technical communicators’ work for several decades. “From the 1980s on,”
write Ginny Redish and Carol Barnum, “many technical communicators made the transition from writing as user advocate to usability specialist—helping to build usability into products, doing user research and analysis, assuring usability through usability testing and other evaluation techniques” (p. 92). In *User-Centered Technology: A Rhetorical Theory for Computers and Other Mundane Artifacts*, Robert R. Johnson (1998) suggests that during the 1990s (the decade that preceded the development of his book), usability experts were typically not the same people responsible for creating the documents that supported commercial technologies. In addition, he describes the outcome of usability in mechanistic terms: “usability research became increasingly interested in testing documents to determine such things as the accuracy, completeness, and usefulness of texts” (pp. 81–82). However, Johnson also argues that usability research offers insight into the motivations, habits, and strategic engagement with information and technologies, thus fostering the growth of “technical rhetoricians” who might temper technical values with humanistic ones (pp. 161–4). Johnson challenges technical communicators to “move more aggressively into the foray concerning technology and humans in a broader, more theoretically and historically based manner” (p. xiii) than they have. He argues for a user-centered approach to usability testing.

In our program, we draw heavily on a user-centered approach to frame much of the research our students conduct. We want students to be aware of the needs, values, and attitudes of audience members and to think critically about the ways in which users interact with a variety of systems. Again, we find the work of Zappen and Geisler valuable for framing the ongoing evolution of usability studies at SVSU.

“Traditional views of information design,” argue Zappen and Geisler, “emphasize the performance of the technology as measured by the functionality and efficiency of the human-system interaction, and thus of the simplicity and transparency of the technology that mediates the interaction” (p. 7). As we noted, however, a shift in recent technical communication scholarship extends traditional views of usability to prioritize “the quality of the user’s engagement with the system” (p. 7). Such a view needs to recognize not only the technological aspects of the system and its relationship with the user but also the social and cultural contexts within which those human-system encounters occur. Technical communication scholars advocate a more participatory design philosophy that emphasizes the development of “tacit knowledge” (Spinuzzi, p. 165), framed within civic engagement (Scott, 2004) through usability studies and testing to foster better spaces for public deliberation (Simmons and
Each of these configurations of usability and related areas of inquiry help us extend and contextualize our local approach. Clay Spinuzzi’s notion that “[p]articipatory design is research” (p. 163), and therefore fosters theory building, meshes well with our methodological positioning of usability studies. By emphasizing knowledge building, he challenges technical communicators to reflect on what they know, and how they know it. “Participatory design’s object of study is the tacit knowledge developed and used by those who work with technologies” (p. 165). As a research method grounded in design, it is ideally suited to linking with usability and civic engagement.

Echoing Johnson’s challenge for technical communicators to “move more aggressively into the foray concerning technology and humans in a broader, more theoretically and historically based manner” (p. xiii), J. Blake Scott (2008) asserts that “We need more expansive definitions and discussions of usability,… ones that account for the practices through which particular goals and methods are operationalized and customized” (p. 406). Scott distinguishes between “practices, as situated, tactical, and specific performances, and methods, as more generic procedures for organizing activities and structuring relations” (p. 382). After engaging in iterative cycles of document development and document studies, Scott’s students “expressed more process-focused and user-centered notions of usability … ” (p. 390). However, of greater value to him was their more-sophisticated examination of usability as a form of collaboration: “In addition to better understanding usability as an iterative process, most students’ usability experiences appeared to give them a better appreciation for user-centered goals, such as engaging users as partners in text development and facilitating a deeper, more empowering understanding of information-in-context” (pp. 390–391). A focus on “user-centered goals” and “information in context” allows usability specialists to better understand social and civic aspects of interface and system design, taking into consideration the usefulness of information for users.

In Interaction Design for Complex Problem Solving (2004), Barbara Mirel defines usefulness as “the ability to do better work better” (p. xxxi). Michele Simmons and Meredith Zoetewey (2012) extend the importance of social and civic commitments in usability studies when they emphasize that civic websites are spaces that “call for an enhanced usability approach to account for users who approach sites with different aims than those envisioned for them by designers” (p. 252). In other words, although the civic website may provide access to information that meets usability
criteria, focusing on whether or not that information is useful for users helps to better understand social and civic motivations that may not have originally been considered by site designers. Simmons and Zoetewey describe the emphasis on usefulness “as a progression of disciplinary developments rather than a new approach” (p. 252). Indeed, as technical communicators continue to shape their roles as usability specialists, they must continue to be informed by the user-centered focus of the 1980s, 1990s, and early 2000s, and advance the contemporary commitment to civic and social concerns, as research and practice reciprocally inform one another (Rude, 2015).

We have so far emphasized evolving, social-critical frameworks for usability studies. However, we also draw on historically significant texts. Core readings typically begin with the work of scholars such as Donald Norman, including Emotional Design (2004), and The Design of Everyday Things (2002); as well as Barbara Mirel’s “Advancing a Vision of Usability” (2002); Karen Schriver’s Dynamics of Document Design (1997); Steven Krug’s Rocket Surgery Made Easy (2010), and Don’t Make Me Think (2006); and Janice Redish. Redish’s (2012) Letting Go of the Words serves in our Writing in Electronic Spaces course (discussed below), which offers students an introduction to web communication. We see the impacts of such scholarship reflected in our graduates, some of whom have become usability specialists.

Foundational texts such as these not only blend disciplinary approaches, but they also challenge readers to integrate theory and practice in their own work. When we present these texts as complementary elements from the bodies of knowledge for usability studies and information design, we signal to our students that we want them to understand what it means to engage the world as critically thinking information developers who are informed by integrating theories from technical communication and usability studies. Further, we hope to see them engage methods of document testing appropriate to their design contexts fluidly and adaptively. Therefore, our programmatic and pedagogical foci fuse traditional user-centered information design with current views on the social and civic implications of usability studies. Our current work with the Usability Research Team (URT), discussed below, challenges students to consider not only the usability of a system or interface but also users’ unique context, motivations, and implications.

In the following sections, we demonstrate how the body of knowledge we have framed here informs our local, programmatic development. We discuss the development of the SVSU Center for Usability Studies before
describing the evolution of usability within our curriculum. We then discuss our programmatic emphasis and the courses where usability studies provide the core theoretical concepts.

**The Center for Usability Studies and Universal Design**

The PTW program secured funding in 2011 for a user-experience research and development facility, the SVSU Center for Usability Studies and Universal Design (the Center). The facility provides a site where SVSU faculty and students can engage in a variety of projects related to information design and document/product testing. It serves as a place for testing digital and print documents, as well as testing other products and designs; it provides a space where stakeholders and clients can engage the problem of implementing universal design principles in a variety of situations. Such work has become essential to the development of professionals who create high-end information products and essential to the success of companies that engage in design assessment.

The secondary function of the Center is developing and refining documents such as those the facility is equipped to study. Thus, project teams and clients can engage in focused development of information products and make immediate transition from testing to production. In addition, this provides a facility where special content documents (e.g., those requiring video and audio content, which are in increasing demand) are produced. Sites on our campus for such production are at present extremely limited.

The Center is physically compact. Figure 1 (page 108) illustrates the two-room configuration for the facility. The main space features three distinct zones. All machines are Macintosh desktop models configured with both Apple OSX and Microsoft Windows operating systems. The row of four machines along the left wall is equipped for information design. The solo machine can serve as an administrative or observation tool. The three machines configured hexagonally can be separated by movable screens and are all equipped with software for conducting usability studies (e.g., Clearleft Silverback, Techsmith Morae). The machine in the secondary room serves two purposes: one for information design, and one for usability studies. Because of its relative isolation, this machine is configured for higher-end audio recording. However, its separation also makes it ideal for use as an observation and administrative post during user testing.
Beyond its physical design, the Center connected forces from three different locations: the technical communication profession, the PTW program, and administration of faculty development for online learning at SVSU. Locally, the Center was conceived as a space for research and development and for pedagogical action, not a space for generating revenue for the University. Thus, free from several constraints, such as a need to generate an “externally-funded revenue stream” (139), outlined in Tharon Howard’s (2015) recent *Programmatic Perspectives* article, the Center materializes programmatic commitment to usability studies. Although the Center marks a milestone for usability studies at SVSU, it is part of the ongoing evolution within the PTW program.

**The Evolution of Usability Studies and PTW at SVSU**

Usability studies is integrated into the PTW curriculum at SVSU in several locations. In the courses where we emphasize these concepts, we frequently merge service learning with usability studies to help students understand the balance between theory and practice and the impact their designs might have on users beyond academic contexts. As we have already explored, this balance is informed by research in technical communication and grounded in our portfolio-driven assessment process.

Now, we briefly highlight three courses from the curriculum because they represent three important points within our program. We also describe the activities of our URT. Core concepts in these courses parallel disciplinary foci on user-centered design, as well as social and civic contexts for documents. Students navigate multiple responsibilities: as
producers of texts (in a broad sense of the word) and as usability specialists who must critically assess their work through usability testing. Testing takes many forms, from talk-aloud protocols, to card sorting, to more-sophisticated data capture and analysis using the Center’s resources. Each of the three courses we examine here are required experiences for PTW majors. The courses are summarized in Table 1.

Table 1. Summary of Usability in Core PTW Courses

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Usability Emphasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPW 285</td>
<td>Writing in Electronic Spaces</td>
<td>Usability testing typically emphasizes in-progress websites. Projects integrate users as participants in site development, including several revolutions of usability testing and website development.</td>
</tr>
<tr>
<td>RPW 322</td>
<td>Instruction Writing</td>
<td>Students create a variety of user documentation in print and digital genres. Usability testing typically includes utilizing video capture and talk aloud.</td>
</tr>
<tr>
<td>RPW 481</td>
<td>Managing Document Design Projects</td>
<td>Students have the opportunity to develop and implement immersive, client-based usability studies for complex and diverse user-centered projects.</td>
</tr>
</tbody>
</table>

**RPW 285 Writing in Electronic Spaces**

In RPW 285 Writing in Electronic Spaces, we emphasize the dynamic nature of writing for the web and other digital contexts. Students learn the basics of markup languages and cascading style sheets, and they complete projects that emphasize the design of digital texts. Students create websites during this course; for some, this is a completely new venture. Although these projects take various forms (e.g., digital portfolios, personal or promotional websites, topically driven exploratories), we emphasize a bottom-up, user-centered approach. That is, students employ an array of low-tech organizational and planning strategies before they write any code. By the time students transition to production, they have likely already proctored or participated in several usability tests to better understand user needs for their own projects, and those of their peers. Students then conduct more-advanced usability studies in the Center, combining screencasting and mouse-tracking among other data streams, to test their sites prior to final delivery and deployment.

**RPW 322 Instruction Writing**

RPW 322 Instruction Writing focuses on both digital and print media. Here again, we emphasize a need to create user-centered, contextually
appropriate documents. Thus, usability studies have become essential course content. It was in fact the first site where we integrated that content. Again, the Center offers students a dedicated space and proper tools for conducting testing of instruction sets, regardless of the medium. When students create print documents, they can use digital video recorders to capture users engaged testing. The combined audio and video data streams enable students to review user successes and struggles and to hear them articulate their experiences.

**RPW 481 Managing Document Design Projects**

RPW 481 Managing Document Design Projects (the PTW capstone course) integrates usability in much the same ways as Instruction Writing. Students work with external clients in a service-learning capacity and are responsible for planning, implementing, and assessing a project that addresses their clients' needs. Students design and conduct a variety of usability testing strategies to better understand user experiences. Where the capstone course deviates from the other two courses, however, is that students may opt to focus their entire client project on examining a set of usability issues. In recent years, such projects have become more common.

**RPW 324 Special Topics in PTW**

One of the ways we explore new curriculum directions is through our RPW 324 Special Topics in PTW course listing. We recognize the need to develop more courses that focus on usability, including one or more where the theories and practices of usability studies provide the primary content. During the fall semesters of 2013 and 2015, Scott Kowalewski taught courses on usability and user-centered design under the department’s Special Topics designation. Although the course, which was listed as User-Centered Design and Usability Studies, evolves with each offering, the core outcomes have provided a consistent foundation for study. (See Table 2 for details.) Students strove to master course outcomes through projects designed to develop grounded knowledge of the conceptual models and methodological approaches that anchor usability studies. The Center served as the primary site for conducting studies and analyzing data.
Table 2. Pedagogical outcomes for User-Centered Design

<table>
<thead>
<tr>
<th>Outcome 1</th>
<th>Outcome 2</th>
<th>Outcome 3</th>
<th>Outcome 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand theoretical (e.g. cognitive, behavioral) issues and challenges facing professional and technical communicators in the areas of usability, user-centered design, and human-computer interaction.</td>
<td>Demonstrate proficiency with industry-standard tools and technologies employed by the professional and technical communicators who design user documentation and conduct usability tests (e.g., Clearleft Silverback, Techsmith Morae).</td>
<td>Apply knowledge of user-centered design and usability testing by designing a bottom-up, user-centered approach to document design, usability, and/or accessibility, while working to solve complex and dynamic issues of human-computer (or human-document) interaction.</td>
<td>Evaluate the results of usability tests, and apply that information to advise clients on appropriate document revisions.</td>
</tr>
</tbody>
</table>

Both iterations of User-Centered Design and Usability Studies required students to complete client-driven projects. Those clients were local individuals or organizations who needed guidance developing or managing a document or interface. Students designed and implemented their own studies based on contextual parameters. For their tests, they developed scenarios and tasks, created and implemented schedules, analyzed data, and composed recommendation reports. We would like to add this course to our standard curriculum, rather than continue to offer it as a special topic.

**Other Programmatic Initiatives**

The 2015 CPTSC review of our program highlighted the potential for integrating the Center even more deeply into programmatic initiatives, thus forging stronger connections with the rest of SVSU, the region, and with the scholarly community. During this academic year, we have launched three usability-centered projects. First, we formed a usability studies research team. Second, we utilized the Center as a space for creative and scholarly activity. Third, we have positioned the Center as a
locus for development of usability professionals and scholars through the creation of a new publication venue. We discuss each initiative briefly below.

We assembled a Usability Research Team (URT) that brings together six undergraduate students, two PTW alumni, and four RPW faculty members. All have some academic or career interest in usability studies and user experience. Five of the six students have completed Kowalewski’s User-Centered Design and Usability Studies course. Three of the six students are at the time of this writing employed in positions that integrate usability. The URT has secured clients both on and off campus, including SVSU’s Writing Center and Office of Web Communications and an online software tutorial company. The Team’s mission is to serve a variety of stakeholders and establish the Center as a resource for campus and community partnerships.

Beyond the URT, the Center also supports several other scholarly and service projects. For example, the Center has provided a space for Cardinal Solutions, an interdisciplinary campus collaboration that brings together students and faculty from RPW, Art/Graphic Design, Business, and Computer Science. Cardinal Solutions serves as a communication, design, and marketing consultancy for its clients. Clients bring projects that are multifaceted, complex, and that transcend disciplinary borders. Williamson serves as the RPW faculty representative and associate coordinator for the project. PTW students contribute their knowledge and skills in various ways.

The Center also provides a recording space for The Technical Rapport, the RPW Department’s podcast. The podcast draws guests from among RPW students, faculty, and alumni, as well as from a range of other places and contexts. Topics for individual episodes vary but have included usability studies, community engagement, innovation in technical communication, and world usability day. Kowalewski created the enterprise and co-hosted and co-produced the 2015–16 season with Michael Blodgett, a senior PTW student. Beginning in fall 2016, Williamson will join the production team.

Finally, the Center serves a space to facilitate creative and scholarly projects. Fall 2016 will see the launch of a new publication that focuses on usability studies, universal design, and accessible design. ZeeTwoTwoNine.org (a site whose name pays homage to the Center’s original campus location) will host three professional and scholarly spaces for traditional articles and alternate media explorations of the subject matter. We envision the site as a space for both practitioners and scholars.
Linking Programmatic Assessments and Outcomes with Intellectual Commitments

Assessment activities, specifically annual portfolio evaluations and a CPTSC external review, led the PTW program and the RPW Department at Saginaw Valley State University to some key places during their relatively brief histories. The changes enacted and initiatives launched directly from the outcomes of assessment have altered the very identity of the program and its host department. All such programmatic endeavors have been designed to grow the department or program in some manner, whether through raising awareness of the students, faculty, and programs; through establishing partnerships; or through promoting the development or mission of the stakeholders who have become associated with PTW, RPW, and the Center.

For us, usability studies has emerged as a significant force for programmatic focus, growth, and maturation. Certainly, we might have directed our pedagogical and administrative energies and talents in another direction. However, the habits of discipline and profession that define usability studies seemed initially to align with both our programmatic needs and the professional development weaknesses we observed among our students. Because the PTW program was so strongly defined by a spirit of professional service and public intellectualism, a shift toward deeper commitments to participatory design made good programmatic sense for us. Because at that time usability studies was emerging as a broader locus of professional authority and expertise, we gained more momentum toward the programmatic shift upon which we have embarked. Indeed, our shift toward usability as a programmatic cornerstone has proven to be a wise decision.

As we move toward concluding our discussion here, we want to return to a few of the local values and forces that anchored our programmatic work of the past decade. Throughout this article, we have highlighted commitments to student development; ongoing assessment; professional service; public intellectualism and engagement; critical reflection and critical practice; and a commitment to ethical, responsible programmatic growth. Those values drive the nature of the assessment activities we implement, as well as the way we process and interpret the data we gather. We place great emphasis on respect and personal connection, whether with students, alumni, colleagues, or others. Programmatic action is for us a process that is inextricably intertwined with these values. In that spirit, we offer a five-part heuristic for programmatic assessment. In this brief
description of our heuristic for assessment, and the rationale behind the questions that frame that heuristic we offer traces of query, action, and outcomes. We see these heuristics as places for further exploration for PTW at SVSU. But we also hope they might offer hints at places where others might begin to explore solutions to their programmatic challenges.

**Five-Part Heuristic for Programmatic Review**

Before we conclude, we would like to offer a five-part heuristic that distills our assessment practices. With each of the five parts, we offer a question that helps drive our assessment focus. We then provide a brief rationale for why we believe these questions are important. Lastly, we offer an example for each heuristic illustrating how each is enacted at SVSU. While this framework is localized for our contexts, we hope others will find value for their own specific programmatic assessment.

1. **In what ways do students drive programmatic evolution?**
   
   **Rationale:** What we have learned through our journey is that students not only have many insightful observations and suggestions, but they value being part of the process. They appreciate having a voice in departmental development, and they recognize the ways in which past students have helped to shape our current programmatic focus.
   
   **Ways enacted at SVSU:** We include student feedback through a variety of formal and informal assessment methods, including focus groups, questionnaires, exit interviews, and in-class reflections. During the 2014–2015 self-study, for example, questionnaires and focus groups were particularly informative.

2. **In what ways does (inter)disciplinary identity impact programmatic development?**
   
   **Rationale:** Usability studies and user experience are innately interdisciplinary (Redish and Barnum, 2011). Usability studies allows technical and professional communicators to leverage our disciplinary strengths and expertise within multi- and inter-disciplinary contexts and partnerships.
   
   **Ways enacted at SVSU:** At SVSU, the Center for Usability Studies and Universal Design serves as a locus for inter- and multi-disciplinary activity. We assess this work through activities such as our URT.

3. **What theoretical approaches inform programmatic initiatives and accompanying pedagogical practices?**
   
   **Rationale:** We recognize that technical communicators draw upon conceptual frameworks from many and diverse contexts, including
rhetoric, cultural studies, sociology, and information architecture.

**Ways enacted at SVSU:** Our theoretical approach is grounded in the humanistic, socio-rhetorical traditions of technical communication. We engage in theory building by contextualizing activities and projects for students. Assessment frequently involves portfolio review from our capstone course, RPW 481: Managing Document Design Projects.

4. **In what ways do programmatic foci create opportunities for research, outreach, and service learning? Reciprocally, how do these foci enact programmatic advancement?**

**Rationale:** By engaging with and working to solve usability problems, blending research with outreach and service learning, students provide their own linkages among programmatic cornerstones. Reciprocally, we consider it equally important to recognize the ways in which these activities might propel programmatic evolution.

**Ways enacted at SVSU:** The Center for Usability Studies and Universal Design serves as a space to foster and promote research, outreach, and service. Our forthcoming (as of this writing) digital publication, *ZeeTwoTwoNine.org*, for example, demonstrates the reciprocal nature of these threads.

5. **What mechanisms exist for programmatic reflection?**

**Rationale:** Because assessment activities provide opportunities to reflect on strengths and weaknesses, we find it useful to situate programmatic reflection in our localized context and create opportunities for ongoing comprehensive assessment.

**Ways enacted at SVSU:** Some of our reflections have been more focused and nuanced, such as our annual portfolio assessment. Others have provided breadth and depth, such as the external-team review. These reflective activities have painted a juxtaposition of both broad and fine programmatic strokes. Together, these snapshots have identified areas of strength and areas of growth within our department and program. One common focus that overlaps both strength and growth has been the Center for Usability Studies and Universal Design.

We hope this distillation of our localized assessment practices as a five-part heuristic proves helpful to our colleagues at other institutions. We also, however, intend to continue our discussion of this assessment framework in future scholarly projects and hope it inspires other scholars to extend this work.
Conclusion

Through an ongoing process of curricular assessment and reflection, we found ourselves moving toward an emphasis on usability studies at SVSU. That disciplinary endeavor provided the perfect mechanism for relocating our prior commitments to service learning and public intellectualism in an emerging context of professional development for students. Students saw usability studies as an approachable, attainable space within which faculty demands for reflective practice suddenly made sense. Better, it offered them a way to anchor theory in work they could frame for themselves with authority and confidence. Students who may have struggled to apply rhetoric could claim expertise with user experience and document testing. Better, usability studies for them are anchored in technology—in the software packages that allow them to gather and assess data that describes user experiences. These tangible trappings for conceptual work make sense to them.

Although ongoing assessments will demonstrate the success or failure of these new initiatives, we grow more confident by degrees that this confluence of concepts and practices in our program will yield a generation of new professionals who more fully embody and embrace the values that found and guide PTW and SVSU.

Our local efforts have been reinforced by shifts in the field of professional and technical communication and in areas of information design. As Meloncon and Henschel traced an increase in the number of usability classes taught in technical communication during the period of 2005–2011, our own focus on usability studies emerged as a programmatic emphasis. This focus also mirrors shifts in the ways in which user experience has evolved to be more focused on user engagement, as Zappen and Geisler note.

While our five-part heuristic hopefully provides a helpful apparatus for identifying programmatic foci at other institutions, we are left to ponder about other programs whose evolution has reflected or followed similar trajectories as our own. In what ways have usability studies and user experience emerged as a programmatic emphases elsewhere? How has programmatic assessment driven these foci? Beyond the work at our own institution, we hope to explore these questions further with our colleagues at other institutions.
References


Ornatowski, Cezar M. (1992). Between efficiency and politics: Rhetoric and ethics in


Williamson, W. J. (2010). Negotiating institutional and cultural value gaps. Delivered at the annual meeting of the ATTW in Louisville, KY.


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**Social Justice Across The Curriculum: Research-Based Course Design**

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**Jared S. Colton**  
*Utah State University*

**Rikki Wheatley-Boxx**  
*AmeriCorps VISTA Public School Partnership*

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**Abstract.** This Programmatic Showcase describes why and how Utah State University redesigned our Technical Communication and Rhetoric program to incorporate considerations of social justice across the curriculum. After describing our programmatic vision, we describe in detail the design of a pedagogical study informing our curricular redesign and then share strategies for course design and university-community partnerships. The course-design strategies include 1) explicitly framing courses around broad issues of social justice, 2) incorporating hands-on practice to connect conceptions of social justice to professional practices, and 3) facilitating opportunities for both students and clients to reflect upon these connections. The strategies for facilitating university-community relationships include 1) collaboratively designing assignments, 2) holding a kickoff meeting, and 3) creating a table summarizing assignments and timelines. We hope this article appeals to all technical communication scholars interested in social justice, though it may be most useful for program administrators interested in incorporating social justice initiatives into their respective programs.

**Keywords.** Social justice, program redesign, pedagogical research, service learning

**Introduction**

Fall 2014 marked a turning point in the Technical Communication and Rhetoric (TCR) program at Utah State University. Recognizing shortcomings...
of our general, “classic” technical writing program, the faculty envisioned a programmatic redesign to centrally incorporate considerations of social justice across the curriculum. The main purpose of this article is to tell the story of why we envisioned such a programmatic shift and how we began incorporating changes to reflect that shift. In telling this story, we emphasize that research has informed and continues to inform our programmatic design. In fact, research has played a major part in the journey of our program. After describing our programmatic vision, we describe in detail the design of a pedagogical study informing our curricular redesign and then share some of our strategies for course design and university-community partnerships. While we hope this article appeals broadly to any technical communication scholar interested in social justice, we mean to speak directly to program administrators who might be interested in incorporating social justice initiatives into their respective programs.

First, to provide some context, our move toward developing a social justice identity was informed by a fairly specific philosophy. With Jared Colton and Steve Holmes (forthcoming), we reject the perspective of social justice as solely the equitable redistribution of resources by people in power, a perspective that makes social justice contingent upon the approval and actions of the powerful. This more traditional idea of social justice views equality as a resource to be “passively” received rather than Colton and Holmes’ (forthcoming) notion of social justice as a practice of actively verifying the equality of individuals and communities in any context, a position we are dedicated to. This latter, active perspective is consistent with views in the field of technical communication that see social justice as everyday practices that “amplify the agency of oppressed people” (Jones & Walton, forthcoming). Such a notion of social justice is indebted to a revised version of Aristotelian ethics (without the sexism, racism, and ableism), a framework where justice is considered a “virtue.” In brief, a virtue ethics framework argues that justice is a hexis, a disposition or orientation toward the world—a disposition that one consciously works to develop into an active habit. In a virtue ethics framework, justice is never accomplished from one act, such as one sees in the phrase “justice was done.” Instead, a virtue ethics perspective on justice recognizes that the work of justice is never completely finished and is an active habit that should be reiterated in one’s daily behavior and reinforced as part of individual and communal identity and practice (Aristotle, 2012). We believe this perspective of social justice is key to technical communication practices invested in the field’s longstanding concern with ethics (e.g., Miller, 1979; Katz, 1992), as well as recent calls to
engage in deliberate social justice goals (Jones, Savage, & Yu, 2014). Such calls include the push for more careful attention to localization practices in our research (Agboka, 2013) and the challenge to make social justice a key element of technical communication programs (Savage & Mattson, 2011).

**Why the New Programmatic Focus**

The Technical Communication and Rhetoric program is housed within the English Department at Utah State University. For the types of degrees we offer, our program is relatively small in the number of dedicated faculty. Six faculty members support three degrees: an emphasis in Professional and Technical Writing within the English Bachelor’s degree, an online Master of Technical Communication, and a doctoral degree in Technical Communication and Rhetoric. Beginning in 2013-2014, several factors culminated to create a kairotic moment to re-envision our program.

First, in the span of about three years, our faculty team welcomed several new members to replace long-standing members: two faculty retired and one left for industry, we hired Walton and Colton, and we received approval to hire again (Avery Edenfield, beginning in Fall 2016). Senior faculty members have established an organizational culture that welcomes the contributions, ideas, and influences of new faculty. This welcoming culture, combined with the percentage of newcomers, prompted much brainstorming from all parties, senior faculty and newcomers alike. Second, we were encouraged to engage in more active recruiting for our programs, particularly for the doctoral program. With one of only two doctoral programs in the College of Humanities and Social Science, we play an important role in supporting the university’s Carnegie classification as “doctoral university: higher research activity.” To jumpstart recruiting efforts, we were given a generous fellowship to offer the top applicant who would start in Fall 2015. Third, we sought to increase student diversity—particularly geographically and racially/ethnically—across all of our degrees. Although not a new goal, the need to increase diversity was keenly felt by the technical communication and rhetoric faculty and was strongly supported by university administration.

In this kairotic moment for change, we considered several factors that would affect our program’s direction. There were constraints we could not change: our relatively small number of faculty and our location in a small town in the United States’ Mountain West. We decided that if size or location would not (necessarily) be our main selling point, our program should become known for something specific—become a “themed”
program that would draw students who have or want to develop expertise in a particular area. Three considerations led us to social justice. First, social justice is an umbrella under which everyone’s research fit; TCR faculty members are each committed to engaging in critical action as scholars. Second, we recognized the early wave of what we believe is a social justice turn in the field. Growing numbers of conference panels, journal special issues, edited collections, and other scholarship reflect this turn from critical analysis to critical action. And third, we enjoyed institutional support at every level—department, college, and university—for this type of focus. Our department head welcomed a programmatic focus on social justice, a focus that promised to resonate with faculty members beyond the TCR program, further strengthening connections across programs within our large, widely varied department. The dean of the college had long supported teaching and research with humanitarian aims. Our vision aligned well with his priorities. At the university level, civic engagement and community partnerships have thrived for years, with the campus hub of service activity, the Center for Civic Engagement and Service Learning opening officially in 2013 to coordinate a group of related programs. These programs, largely grant-funded national service organizations, are collaborating to apply in 2018 to achieve a Carnegie Foundation Classification for Community Engagement. This classification requires alignment between university mission, verification of data from the National Center for Education Statistics and National Center for Science and Engineering Statistics, and documented effort at every level of university activities and policies (NERCHE.org). An academic program centered on considerations of social justice offers an excellent example of university efforts congruent with the Carnegie classification.

Implementing the New Programmatic Focus

We took several steps to enact the new programmatic focus on social justice. For example, we sought to attract both students and job applicants who share our vision: creating materials to advertise the doctoral fellowship and crafting a job ad with preferred areas of research specialization including social justice, diversity, and activist literacies. In addition, we created a new website to convey our vision across programs, and in doing so, we noted that our curriculum did not clearly reflect this vision. Therefore, we also reviewed the undergraduate curriculum, identifying existing course numbers that we could use for new courses (a strategy for curricular redesign with a shorter review and approval process at our university). We added two upper-division undergraduate courses,
neither of which is required but both of which count toward the Professional and Technical Writing emphasis and are repeatable for credit. One is titled Social Justice in Technical Communication, and the other is a project management course with a catalog description conveying an explicitly inclusive approach: “Students study project management strategies involving and affecting diverse groups of stakeholders. Students learn how gender, race, culture, age, ideology, and socio-economic class influence the design, execution, and outcomes of projects.”

The programmatic design is also being informed by a pedagogical research study. Inspired by a shared commitment to education, research, and social justice, the research team includes both professors (Walton and Colton) and the leaders of a local chapter of a national service organization (Wheatley-Boxx and Gurko), who partnered for service-learning courses. We designed an IRB-approved study (protocol #6070) to

- Explore students’ perspectives of social justice and its relevance to their professional field and professional goals.
- Identify effects of the service-learning partnership on the partner organization.
- Explore whether students’ work has any social justice impact (and if so what impact).
- Glean pedagogical implications useful for future courses that view technical communication through a social justice lens.

We systematically studied three upper-division undergraduate courses in the Professional and Technical Writing emphasis, each class with approximately 20 students. (See Table 1.) These courses represented our earliest efforts to officially enact the new programmatic vision of incorporating considerations of social justice across the curriculum (i.e., not only in the Social Justice in Technical Communication course but throughout the curriculum in ways that support and enrich each course’s learning objectives):

**Table 1: Courses Studied in Pedagogical Research**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Instructor</th>
<th>Partner Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2014</td>
<td>Document Design (focus on print documents)</td>
<td>Walton</td>
<td>National service organization with a mission to combat poverty through education (led by Wheatley-Boxx and Gurko)</td>
</tr>
</tbody>
</table>
We collected data throughout and immediately after each semester, using multiple methods:

- **Interviews with Partner Organization Clients:** About midway through the semester and shortly after the end of the semester, Walton and Colton conducted individual, audio-recorded interviews of less than an hour with the partner organization members who had worked most closely with students from their respective classes. (Note: In the Document Design classes, clients were not Wheatley-Boxx and Gurko but instead, those whom they supervised.)

- **Interviews with Students:** To avoid coercion and to encourage frank responses, Walton and Colton recruited and conducted individual, audio-recorded interviews of less than an hour with students from each other’s class(es). We informed students that their professor would not access the interview data, nor even know which students participated, until after grades were submitted.

- **Analysis of Assignments:** We analyzed student assignments, including reflection essays—both written and multimedia reflections in which students directly addressed issues of social justice. We also analyzed the documents that students produced for their partner organization clients.

Students could opt out of the study at any time without their instructor knowing until after grades had been submitted. In addition to reviewing the Letter of Information (LOI) in class and answering questions, Walton and Colton posted the LOI on their respective course websites. This document included a simple form allowing students to decline participation with two choices: 1) remove individual assignments from consideration and 2) remove collaborative assignments from consideration. Students could select one or both options, sign and date the form, and submit it to a professor who was unaffiliated with the study.
and who would hold forms until after grades were submitted. No students opted out of allowing their assignments to be analyzed, and approximately half the students in each class volunteered to participate in the optional interview during finals week.

Thus far, our research team has analyzed student interviews and assignments from Colton’s digital media class for insight into how disability studies can inform broader social justice pedagogy (Colton & Walton, 2015), and most recently, we iteratively inductively coded the 20 partner interviews (mid-semester and post-semester interview with five clients per class) from Walton’s two document design classes. A complete data analysis is ongoing and is outside the scope of this Programmatic Showcase, but we want to share some strategies that have emerged as we formally analyze data and iterate course designs across our curriculum (at the time of this writing, the document design course is on its fourth iteration). In the first section, we present three course-design strategies: 1) explicitly frame courses around broad issues of social justice, 2) incorporate hands-on practice to connect these conceptions of social justice to professional practices, and 3) facilitate opportunities for both students and clients to reflect upon these connections. In the second section, we present strategies for facilitating university-community relationships, strategies selected and written by Wheatley-Boxx and Gurko as particularly valuable from their perspective. These strategies include 1) collaboratively designing assignments, 2) holding a kickoff meeting, and 3) creating a table summarizing assignments and timelines. We close with a discussion of how this research has informed curricular revision that is already improving student literacies, and we end by looking ahead to what’s next for our program.

Course-Design Strategies

Here we share course-design strategies that are informing our curricular redesign and that are reflective of the larger programmatic shift toward social justice. These strategies are general enough to apply to several courses across our curriculum, such as Document Design, Social Justice in Technical Communication, Project Management in Technical Communication, Studies in Digital Media, and various topics courses. Specific applications of these strategies vary by instructor, of course. Thus, in presenting these strategies, we tell stories from recent Document Design courses to give a clearer illustration of what the general course-design strategies may look like when implemented.
Explicit Framing

The first readings, activities, and assignments that students encounter center on social justice, social change, and social issues specific to the service-learning community partner. These readings introduce students to definitions of social justice and explicitly address roles of communication in the work of social change. After the first set of readings, students may participate in a class activity in which they present main ideas from the readings and relate those ideas to the particular course and to the field. Iteratively throughout the semester, students return to these concepts with social-justice-relevant readings about specific considerations related to the particular course. For example, in the Document Design course, these issues include presenting quantitative data, selecting images, designing logos, and developing websites. Readings on these topics were selected to be brief and accessible, and they included a range of genres including policy briefs, blog posts, online comics, news articles, excerpts from academic publications, and reports written for policy makers and advocacy organizations.

When we first began implementing the new curricular redesign, many students indicated in their reflection exercises, in-class discussions, and interviews that before their classes began, they were either entirely unfamiliar with the term “social justice,” that they had a vague idea it related to protesting, or that they associated it with “doing good” but could not define it more specifically. This lack of understanding prompted a key strategy informing our course designs moving forward: students should study social justice at two levels of abstraction—1) broad critical concepts (e.g., social justice, privilege) and 2) specific social issues relevant to the partner mission (such as homelessness, wrongful incarceration). This strategy is congruent with service-learning approaches that ask students to learn about the partner organization’s mission (Bourelle, 2012; Scott, 2008). However, we find that by also defining and reflecting upon foundational issues such as social justice, privilege, and social change, students become better prepared to apply skills and concepts beyond a single course or organization.

The pattern of unfamiliarity with foundational critical concepts was especially strong among students in Fall 2014 courses, who had not encountered these concepts in other TCR courses due to the newness of our curricular redesign. But students are now encountering considerations of social justice in different ways and to different degrees in multiple courses across our curriculum. We have observed the value of the two-level approach to social justice as students make connections among concepts across courses, social issues, and professional practices. For
example, in the Spring 2015 Document Design course, students created screencast instructions. The practice of creating rhetorically significant closed captions (Zdenek, 2011) was key to Colton’s digital media course focusing on accessibility the previous semester. Even though the document design course focused on poverty and education (not accessibility), students who had taken the digital media course immediately noted that captioning their screencasts would be one way to enact equity, a foundational critical concept addressed in the document design course.

To summarize, we find that delving into the partner organization’s mission is useful but insufficient alone to meet goals of social justice pedagogy. To scaffold students in learning about social justice, we believe it is important to also have readings, discussions, and activities about broader critical concepts such as privilege and social change. These foundational readings equip students to recognize and apply social justice concepts across courses and contexts.

**Hands-On Practice**

The explicit framing provided in part by reading about concepts such as privilege and social justice was useful for developing a shared vocabulary and foundation on which to build. But students consistently indicated hands-on practice helped them to bridge big ideas with the specific ways they enacted their professional expertise. For example, in the Spring 2015 Document Design course, students read in Loretta Pyles’s (2013) *Progressive Community Organizing* that people in varying positions of privilege buy into and reinforce oppression when it seems natural to them. In other words, people can unintentionally perpetuate marginalization when they do not question the “naturalness” of their assumptions (p. 14). But it was through hands-on practice of document design that the insidious nature of oppression became easier for students to recognize and, importantly, that alternatives to perpetuating oppression became visible.

For example, students read that the Pew Internet and American Life (Duggan & Smith, 2013) study found that people most likely to access the Internet primarily or solely through mobile devices include racial and ethnic minorities, people living in low-income households, and people with lower levels of education. Awareness of this fact provided a concrete example of oppression relevant to communication design: websites that are not fully accessible and usable on mobile devices are likely to further marginalize people in positions of lesser privilege. Thus, when one student team was asked by their client to make a particular change to the
website the students were developing, the students explained the significance of mobile accessibility for marginalized populations and that accessibility would be compromised by the requested change. The client was grateful for the explanation and agreed with the students’ original design choice. In their reflection writing as well as in interviews, students said that they recognized this exchange as an opportunity to avoid perpetuating oppression through the decisions they made about document design—recognition that we suspect may have been less likely (or less concrete) without hands-on practice.

**Multiple Reflections**

To overview, explicit framing provides a shared vocabulary; hands-on practice bridges social justice concepts with professional practice; and multiple reflections provide an impetus for students to articulate what they are learning about social justice and its relation to technical communication. The importance of reflection in service learning is well documented (e.g., Bourelle, 2012; Bringle & Hatcher, 1999; Hanson, 2004; Sapp & Crabtree, 2002; Scott, 2008). Therefore, at multiple points during the semester students engage in different types of reflection writing. For example, in the Document Design course, these types of reflections include

- Graded essays at the beginning and end of the semester reflecting upon their perspectives of social justice: for example, what they thought of the term before the class began, how they would define social justice now based on readings and class discussions, whether and how they thought social justice is relevant to their professional field, and whether and how it is relevant to their own professional goals.

- In-class freewriting exercises: for example, reflecting on the ethical selection of graphics after reading about the #iftheygunnedmedown hashtag and its message about representations of Black Americans in the media.

- Classwide reflection exercises: for example, collaboratively brainstorming how social justice relates to specific considerations of document design, while concurrently producing a shared Google document that the class could later reference.

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1 The change in question was to increase the size of the organization’s logo to a point that would interfere with the responsiveness of the page layout. We recognize that a more advanced web designer would likely know how to implement the client’s request without compromising accessibility.
Extending existing approaches to reflection, TCR faculty have begun the practice of prompting not only students but also service-learning clients to reflect upon social justice: to define it, to relate it to their work, and to share their perspectives with students. We see this expansion as a key strategy for implementing our emphasis on social justice across curriculum: one way for any service-learning course to intentionally engage members of the partner organization in reflections on social justice.

This strategy emerged from interviews with service-learning clients in the Fall 2014 Document Design course. This course included three graded reflection essays by students, each responding to the prompt summarized in the first bullet above. The first essays (produced during the second week of the semester) and second essays (produced two-thirds of the way through the semester) differed quite a bit as students developed more nuanced and concrete understandings of social justice. But several students struggled in the final essay to say anything they hadn’t already said. Three essays responding to the same prompt appeared to be excessive. Interviews with the fall semester clients indicated that little, if any, explicit discussions of social justice had occurred between them and their students. Both clients and students were busy, so their conversations focused on specific tasks (e.g., designing websites, brochures, instructions, and other documents). Some of the “why behind the what” factored into discussions, but it was not an intentional and in-depth part of their interactions. In the post-semester interview, one client recommended adding an assignment where students collaboratively reflected with clients about their day-to-day work, their organizational mission, and their views of social justice. This assignment solved the problem. In spring semester (the second iteration of the document design course), students produced only two graded reflection essays, and their first assignment involving the client was the collaborative reflection. In class discussions, as well as in their design justifications, the spring students were more specific in relating their design decisions to the client mission and in articulating the potential social impact of their documents. As we continue a full data analysis, we anticipate discovering additional course-design strategies that can be incorporated across our curriculum.

Community Partnership Strategies

In the previous section, we shared some strategies beneficial for students; here we share strategies beneficial for partner organizations. Many TCR courses now involve partnering with community organizations because these partnerships are invaluable for enacting a curricular focus on social
justice. In a spirit of collaboration and mutual benefit to both members of community-university partnerships, we now share some strategies implemented during our curricular redesign that magnify positive outcomes for community organizations. These strategies are selected and written by Rikki Wheatley-Boxx and Krista Gurko as particularly beneficial from the community-partner perspective.

Each semester the partnership produced valuable, professional-quality materials that allowed community organizations to reach and serve more community members over time. These materials are particularly valuable because many nonprofit organizations face increasing demands for support services and decreasing revenue streams (Salamon, 2002). These capacity constraints make it nearly impossible for nonprofits to create and update appealing materials that are critical to the accomplishment of their missions. Therefore, clients experience both tangible (e.g., professional-quality materials) and intangible benefits (described below). To allow both sides of university-community partnerships to share concerns at each step of the process, it is vital to open pathways of communication regarding goals and expectations early in the relationship (Bringle, Clayton, & Price, 2009), such as starting well before the beginning of the semester. This relationship provides an impetus for clients to articulate the impact of their daily work for social justice, creating reflexivity that strengthens organizations by enriching the individual client’s experiences and effectiveness. Building on these best practices, we describe three strategies integral to the university-community partnerships at the heart of the TCR curricular redesign: 1) assignments and timelines that are collaboratively designed, 2) kickoff meetings among instructors and service-learning clients, and 3) client-targeted tables that signpost assignments and timelines.

**Collaboratively Designed Assignments, Timelines, and Delivery Formats**

Prior to the beginning of each semester, partner organizations and instructors meet to review the course syllabus and finalize assignments. We work together to oversee project goals and to facilitate communication between student teams and clients. This coordinated approach to designing course materials ensures that both university and community needs are met and helps avoid the “community as a laboratory” approach that has historically characterized many community-university partnerships (Cushman, 2002). Collaboratively designing assignments gives community partners a voice that often is unrepresented in service learning (Sandy & Holland, 2006). This approach
also enables each document produced by students to meet a client need (cf. Cronley, Madden, & Davis, 2015; Hollis, 2009). Continued collaboration is important to achieve an ideal win-win-win among the university, students, and community organizations (Vernon & Ward, 1999). Instructors need each course to fulfill specific curricular objectives, and partner organizations need each course to meet community and/or organizational needs. For example, in the fall and spring Document Design courses, an instructions assignment provided a good example of a win-win-win. Instructions are a classic genre of the technical communication field, so it was important for students to gain hands-on experience with this genre. Clients needed instructions in order to update the student-designed materials, so a well-written set of instructions made the students’ efforts sustainable, a goal of the client.

Collaborating on assignment design includes setting due dates. Addressing this level of detail ensures that clients are able to provide necessary information in time for students to produce their assignments (Bushouse, 2005). When students design a graph, for example, clients must have already collected data. It is not enough, therefore, to solely establish that clients collect data. The timeline of data collection must also be taken into account. Another aspect of collaborative assignment design includes consideration of technology access and capacities. For example, the final assignment in the Fall 2014 Document Design course required designing five brief, design-intensive documents selected by clients (e.g., an invitation, a brochure, a certificate). Built into this assignment was a flexible software requirement. At least two of the five documents designed by student teams had to be produced using industry-standard software (Adobe InDesign). Students and clients worked together to decide which software to use for the remaining three documents. Documents unlikely to need updating, such as invitations, were typically produced with Adobe InDesign. This flexibility enabled 1) students to gain experience with industry-standard software, 2) clients to receive documents they can update themselves, and 3) both parties to discuss affordances and constraints stemming from software selection. This type of flexibility is relevant across our curriculum, as students may work with community partners in courses such as Project Management in Technical Communication, Studies in Digital Media, Methods and Research in Technical Communication, and others.

In the first semester of the Document Design course, students were not required to provide editable electronic copies of documents to the clients; however, it was expected that this would happen. Unfortunately, some student teams did not provide electronic versions of documents to
clients, and when clients requested electronic documents after the end of the semester, students had deleted the files. This one-and-done approach to providing client materials directly conflicts with the TCR program’s social justice philosophy: social justice is an active habit to be continually recultivated rather than a state to be achieved. This problem prompted a change in requirements for future courses: students are required to provide clients with editable versions of all materials.

**Kickoff Meetings**

A kickoff meeting is held each semester before clients are introduced to student teams. The kickoff meeting

- Allows the instructor to make personal contact with clients and build rapport before the semester starts.
- Provides clients with a thorough understanding of what information the student teams will request from them on which dates and what types of materials the students will produce for them.
- Offers an opportunity for clients to ask clarifying questions, express concerns, and make suggestions.
- Encourages and empowers clients to act confidently in their roles when negotiating with students on behalf of their organization.

This meeting produces the same benefits as the request-for-proposal process described by Brenda Bushouse (2005): anticipating the opportunity cost of participation, clearly specifying projects and outcomes, and negotiating levels and types of student-client interactions. However, our approach requires significantly less initial effort on the part of the clients.

We find that one of the most important outcomes of a kickoff meeting is the opportunity for instructors to outline exactly what tangible materials clients should expect to receive by the end of the semester. Addressing these tangible needs early on increases the success of community-university partnerships (Bushouse, 2005, p. 40). Clear expectations early in the semester motivate clients to remain focused and invested, even as their other responsibilities increase. This consistent engagement is important for facilitating student success, not only in terms of completing assignments but also in understanding the contexts for and potential impact of their work (Pope-Ruark, Ransbury, Brady, & Fishman, 2014).
Detailed Table of Assignments and Timelines

The third partnership strategy emerged directly from a misstep in university-community collaboration at the very beginning of our curricular redesign. In the Fall 2014 Document Design course, Walton followed up on the kickoff meeting by sending clients assignment descriptions in a lengthy email, which some found overwhelming and, therefore, did not read. Thus, clients were unclear about upcoming assignments and information students needed to produce those assignments. The resulting lack of clarity about student needs exacerbated clients’ discomfort at fulfilling what was for them a new role, that of the client. Their discomfort was increased by an email that couldn’t easily be skimmed. From this experience, our third strategy emerged: instructors now create a concise table with names of assignments, descriptions of assignments, what is needed from clients, and a timeline. The timeline column includes information on both 1) when clients should expect to hear from student teams regarding each assignment and 2) each assignment due date. (For an example table, see appendix A.)

We have found that clients need to know exactly what information students are going to ask them to provide, when to provide it, and what to do if things are not going as expected. It is critical for instructors to communicate this information well ahead of time, as it is often difficult for clients to provide quick feedback unless planned ahead of time. Having a table supports successful communication and timely delivery of information to students. We have seen that clients’ anxiety about their new roles is reduced when they can quickly reference a concise table summarizing student needs. This type of documentation is especially helpful when working with national service organizations, which tend to have a strong commitment to making sure everyone benefits from the partnership (Basinger & Bartholomew, 2006).

Conclusion

We conclude this Programmatic Showcase by turning briefly to assessment. TCR faculty members have discovered that a benefit of the programmatic emphasis on social justice is students’ improved ethical and critical literacies. This improvement is not merely anecdotal. In the capstone course, undergraduates produce portfolios showcasing their best work. Class size varies from 12-20 students. Our process involves selecting 12 portfolios that represent a range of grades (purposive sampling) and assessing them using Kelli Cargile Cook’s (2002) six layered literacies: basic, rhetorical, social, technological, ethical, and critical. Each
faculty member assesses six portfolios, and two faculty members review each assessed portfolio. In the assessment of Fall 2012 student portfolios, we found that student performance was mixed. Students were exemplary in literacies such as basic, technological, and rhetorical, but many had trouble demonstrating ethical and critical literacies, especially regarding issues of privilege, equity, and power. In contrast, the next assessment (see figures 1 and 2) showed that by the Fall 2014 capstone, students demonstrated greatly improved ethical and critical literacies. Most of these students concurrently took at least one of the newly designed TCR courses, courses reflecting our first efforts to incorporate a social justice focus. Improving critical literacies remains a programmatic priority, but the assessment suggests that our new programmatic focus may help students leave the program with a richer understanding of ethics and critical thinking in technical communication. We look forward to assessing later portfolios produced by students with greater experience of our new curriculum.

![Critical Literacies Comparison](image)

Figure 1: Comparison of Critical Literacies in 2012 and 2014 Student Portfolios
In telling the story of Utah State University’s new program identity, we hope to have given program administrators and teacher-scholars a sense of not only where we are but also how we got here. The strategies we are implementing across our curriculum allow us to incorporate considerations of social justice in layered ways in multiple courses. At the course level, changes have ranged from entirely redesigning courses to simply incorporating a few of the strategies presented in this showcase; (e.g., assigning readings that address issues of privilege, communication for social change, and ethics beyond legality). Framing courses on document design, technology use, rhetoric, usability, and even editing with a social justice lens is catalyzing student discussions of social justice well beyond a single course. Looking ahead, as we continue analyzing the data from our pedagogical study, we anticipate incorporating additional strategies. Next steps also include revising our graduate curriculum to parallel some of the changes we’ve made at the undergraduate level, amplifying the legacy of our program as students embark on their own academic careers.

References


Jones, Natasha N., & Walton, Rebecca. (Forthcoming). Using narratives to foster critical thinking about diversity and social justice. In M. Eble and A. Haas (Eds.), *Integrating theoretical frameworks for teaching technical communication*.


Pope-Ruark, Rebecca; Ransbury, Paige; Brady, Mia; & Fishman, Rachel. (2014). Student and faculty perspectives on motivation to collaborate in a service-learning course. *Business and Professional Communication Quarterly, 77*(2), 129-149.


# Appendix A: Example Assignments Table

Table 1: Partnership with ENGL 4410 Student Team

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Description</th>
<th>Need From You</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview</td>
<td>Interview you to better understand what you do, the mission of your school/partner site, your VISTA goals, and also your own motivations and perspectives on your work (one interview per team)</td>
<td>About an hour to meet in person if possible</td>
<td>You should start hearing from students about this after Thursday</td>
</tr>
<tr>
<td>Reading</td>
<td>Read about a specific social issue, trend, or policy that is relevant to your work (Other readings address broad concepts like social justice, social change, and privilege)</td>
<td>A brief reading of ~5 pages or shorter (e.g., a policy brief, news article, excerpt of an online report)</td>
<td>Please send me the reading and framing sentences on or before Feb. 2 (Note that Krista and Rikki can help you with this if nothing comes to mind! 😊)</td>
</tr>
<tr>
<td>Website Analysis</td>
<td>Analyze the design of a website to show that they understand the design principles they will employ when designing your logo/set of icons and website (students will produce analyses individually or in pairs)</td>
<td>A link to a website that • Your team will replace (preferred) or • You select for its content or qualities • Response to a survey re: • Why you selected this site • What you like about the site and why • What is relevant to your new site • What is problematic or irrelevant to your new site</td>
<td>You should start hearing from students about this in late January</td>
</tr>
</tbody>
</table>

Assignment due Feb. 16
<table>
<thead>
<tr>
<th>Assignment</th>
<th>Description</th>
<th>Need From You</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website</td>
<td>Website of at least 5 pages (one website per team)</td>
<td>Ideas for use&lt;br&gt;  - Who would use/visit the site&lt;br&gt;  - Any concerns or needs of those users/visitors&lt;br&gt;  - Purpose the site serves&lt;br&gt;  - What “feel” you want the site to have&lt;br&gt;  - Who will update and maintain the site over time</td>
<td>You should start hearing from students about this in <strong>mid-February</strong>&lt;br&gt; Project plan due Feb. 25&lt;br&gt;  Draft 1 (no images) due March 22&lt;br&gt;  Draft 2 (with images) due April 14&lt;br&gt;  Final website due April 28</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logo or Set of Icons</td>
<td>Logo or set of at least three icons to be incorporated into your website (one logo or set of icons per team)</td>
<td>Ideas for use&lt;br&gt;  - What organization or program needs a logo&lt;br&gt;  - The mission/purpose of that organization or program&lt;br&gt;  - The “feel” of the program or organization&lt;br&gt;  - Any required/preferred colors</td>
<td>You should start hearing from students about this at the <strong>very beginning of April</strong>&lt;br&gt; Draft website 2 (with images) due April 14&lt;br&gt; Final website due April 28</td>
</tr>
<tr>
<td>Images</td>
<td>At least two images that your team finds online, has the legal right to use, and incorporates into your site (at least two images per team)</td>
<td>Ideas for images like “happy children of diverse races and ethnicities” or “adults and children engaging in art activities”</td>
<td>You should start hearing from students about this at the <strong>very beginning of April</strong>&lt;br&gt; Draft website 2 (with images) due April 14&lt;br&gt; Final website due April 28</td>
</tr>
<tr>
<td>Screencast</td>
<td>Video instructions regarding how to do something relevant to document design (one video per team)</td>
<td>Things you’d like to be able to do that you don’t know yet or that you’d want to show future VISTAs (like how to update content on the website)</td>
<td>You should start hearing from students about this in <strong>mid-February</strong>&lt;br&gt; Assignment due April 21</td>
</tr>
</tbody>
</table>
Volunteer Hours

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Description</th>
<th>Need From You</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Each student on your team will volunteer onsite for at least 2 hours over the course of the semester:</td>
<td>Ideas for volunteer activities that would be useful to you</td>
<td>You should start hearing from students about this in mid-February</td>
</tr>
<tr>
<td></td>
<td>• Can be individual or group</td>
<td></td>
<td>Assignment due May 2</td>
</tr>
<tr>
<td></td>
<td>• Should be at least 30 min. at a time</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Must be physically onsite</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Doing whatever activity would be helpful to you</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>• Can volunteer more for extra credit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Will keep a log of their dates, times, activities, and your signoff</td>
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<td></td>
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</table>

Thank you, thank you, thank you for partnering with our class! I fervently hope that this collaboration will be beneficial to you and that you’ll have a great experience in working with your student team. If you have suggestions for how this collaboration could be better designed, I’m all ears. In fact, some of your VISTA predecessors/colleagues have suggested tweaks/criteria/assignments that are now incorporated into the course design.

One educational goal for this course is to help students learn how to interact with clients, so I’ve instructed students to contact you directly. You should please feel free to contact your student team directly as well. They will look to you to help them understand how to support your goals and organization: what you need, what constraints are relevant to the materials they’ll design, how you prefer to communicate, etc. Although most/all of your communication will be directly between you and your team, I’m available if you have questions or run into any major problems. Please absolutely feel free to contact me: Rebecca Walton (call me Rebecca), email: Rebecca.walton@usu.edu, phone: 435-797-0263. If you get my voicemail, please leave a message; voicemails are emailed to me as audio files, so I shouldn’t miss them. Thanks again!!!

Author Information

Rebecca Walton is an assistant professor of technical communication and rhetoric at Utah State University. Her research interests include social justice, human rights, and qualitative methods for cross-cultural research. Walton’s research makes explicit connections between technical communication (e.g., areas of expertise, sites of research and practice) and concerns of social justice (e.g., human dignity,

Jared S. Colton is an assistant professor of technical communication and rhetoric at Utah State University. His research addresses the intersections of rhetorical theory, ethics, and politics, whether in pedagogy or sites of social justice. He is particularly interested in how classical and contemporary ethical frameworks inform the production, practice, and critique of collective activism via social and mobile media and accessibility technologies. His work has appeared in the Journal of Technical Writing and Communication, Computers and Composition: An International Journal, the Journal of Interactive Technology and Pedagogy, and other journals.

Rikki Wheatley-Boxx is the Program Director at Utah State University’s Public & School Partnership (PSP). She has spent the last 14 years working with universities, K-12 schools, and education-based nonprofits in an effort to accomplish PSP’s mission to provide community members with access to the resources, education, and opportunities to elevate themselves and their neighbors out of poverty. Her passions and research emphases lie in developing educational strategies to effectively deliver services to underserved students and families.

Krista Gurko, Program Coordinator at Utah State University’s Public and School Partnership, draws upon her experience as a doctoral student in Human Development. She has spent most of her career working with community non-profit organizations and on university-community research partnerships in homes, childcare facilities, and schools in the United States and abroad. She aims to understand the roots of social justice by studying how interpersonal relationships impact individuals’ development and can improve opportunities and resources for people of all ages who may be considered underprivileged in various settings.
Researching a New Professional Writing Major: Miami University

Heidi A. McKee
Miami University

Abstract. In 2011 Miami University combined an undergraduate major in Scientific and Technical Communication and an undergraduate minor in Rhetoric and Writing to create a new Professional Writing major that now enrolls approximately 200 students. This profile details how research into institutional enrollment data, student perceptions, and direct assessment of student writing contributed to the development and ongoing growth of the major. Program curriculum is shared in Appendix A.

Keywords: enrollment data, new major, professional writing, program research, survey research

Research is essential for any program in order to design and build the best program, to meet program goals, to engage in program promotion, and to argue for more resources. For new programs, research is even more essential because of the greater need for data to promote the program to many stakeholders including faculty colleagues, prospective students (and their parents), potential employers, community partners, and university administrators. In this profile, I will discuss the design, deployment, and result reporting of survey, assessment, and enrollment research that colleagues and I conducted on a new Professional Writing major at Miami University. I will then reflect on the areas of research we yet need to pursue.

Background: Program Origins and Overview

In 2011, rhetoric and writing faculty at Miami University substantially revised our BA in Scientific and Technical Communication (STC) into a BA in Professional Writing (PW), integrating the curriculum and faculty resources from what had been—at the undergraduate level—the separate programs of STC and Composition and Rhetoric. The key drivers for the change were

Programmatic Perspectives, 8(2), Fall 2016: 142–162. Contact author: ⟨mckeeha@miamioh.edu⟩
the declining enrollments of the STC degree coupled with recognition of the changing dynamic of the broad field of professional writing studies.

As I have discussed elsewhere, (McKee, in press; Johnson, Zemliansky, & McKee, 2014), the STC degree was a rigorous degree that required, in part, that students take 18 hours of specialization in environmental science, biological science, or computer science. While this science requirement produced really strong technical writers (STC’s job placement was 100 percent), given enrollments (our only data point), it seemed likely that the major was too narrow to appeal to a larger portion of Miami’s undergraduate population. Miami has around 16,000 undergraduates on the Oxford campus, and in 2010 the STC major had 16 majors, whereas majors such as Journalism and Strategic Communication had over 900 students enrolled. Clearly, Miami students were interested in forms of professional communication, but just not STC as it was currently configured.

In addition, in 2010, given the “great recession” in the U.S. economy and its impact on the university budget, campus administrators were looking for any and all cost-cutting measures, including cutting low-enrolled programs. Already, in 2009, Miami’s MS in STC had been cut because of low enrollments. Facing these issues, in Fall 2010, colleagues and I in rhetoric and writing—our new umbrella term for what had been interrelated but separate programs: a major in STC and a minor in Rhetoric and Writing—proposed revising STC into a new major in PW that would expand the curricular offerings of STC and that would bring all rhetoric and writing faculty in the department together to teach in one major.

We chose the name for the revised major after much discussion (see also McKee, in press; Johnson, Zemliansky, & McKee, 2014). Writing as part of the title was easy—decided in just a few minutes—because that is what united all the areas of study we wanted to offer in the new degree, including areas we are currently developing. We decided that technical communication would be a track within the major. We also knew we wanted to make it clear to students that the focus of the degree was on various professional communication outcomes, and we decided that professional encompassed STC but also included other areas. We chose not to put rhetoric in the title for purely marketing purposes. Given that we were starting a major with an enrollment of zero and would be under incredible pressure to deliver results, we didn’t want to risk scaring off even one student given how misunderstood rhetoric is by so many. We surmised, correctly as I will show, that Professional Writing would resonate well with students.
Our PW major is housed in an English department that has three primary majors (English-Literature, English-Creative Writing, Professional Writing) and one interdisciplinary major (Linguistics). Notice that our degree program is a BA in Professional Writing, not a BA in English-Professional Writing. This is a significant difference in terms of curriculum because it enabled and continues to enable us to argue for courses and requirements that are best practices for a writing major rather than an English (read literature) major. Literature and professional writing are separate fields, and while they share many synergistic connections, these connections are no more paramount than, say, the connections we share with interactive media studies, marketing, strategic communication, creative writing, linguistics, and journalism. Thus, rather than having any required literature courses in our major, we have open electives in English.

Specifically, the curriculum of the new 42-credit hour degree (see Appendix A) is built with a 15-hour core, 15 hours of track courses, and 12 hours of open electives in English that can be courses from any program at the 200-level and above. Importantly for a BA in Professional Writing, the required core courses in the major are all writing courses. The four track options are as follows:

- Digital and Technical Communication
- Editing
- Public Writing and Rhetoric
- Self-Designed

These tracks are anchored by required rhetoric and writing courses (e.g., Technical Writing, Print and Digital Editing, Grant Writing) and include elective options drawn from rhetoric and writing and from other fields. Depending on their goals and interests and how they design their major, students may choose to take all rhetoric and writing courses or anywhere from 3–18 hours in a number of other related areas including creative writing, interactive media studies, journalism, linguistics, and literature. In addition students may petition up to six hours from other departments in the university to count in the major, an especially popular option for students pursuing self-designed tracks, such as Writing for the Arts or Writing for Marketing (the latter being a popular self-designed track for double majors with marketing).

Our PW curriculum is continually evolving as our program grows and as we seek to keep the program responsive to changes in the field. In addition to revisions to curricula within specific courses, in the past few years we have added many new courses (e.g., Rhetoric of Information and
Data Visualization, Legal Writing, Digital Publishing, Medical Writing, Writing for Global Audiences), and we are working on designing a new track in Intercultural Rhetoric and Global Writing. The focused but flexible curriculum of our major has been essential for building a robust degree program and for increasing enrollments so now we are on the verge of being the largest major in the department—as I will discuss below.

When we proposed the revised degree, many of our colleagues in English (those not in rhetoric and writing) were skeptical that the program would succeed given the years of low enrollments in STC, so they asked that a third-year review be conducted of the major to ensure that, in their words, the department was not saddled with a “low-performing program.”

We understood our colleagues’ concern, and we welcomed the opportunity to review and report on the major. We also recognized that although our degree is not an English degree, we are in an English department, and all program budget decisions—faculty lines, lab expenditures, etc.—were English decisions. So for the good of both the major and our relations within English, it behooved us to build the strongest possible major so our program would not be perceived as “low-performing.” Ironically, now that we’ve designed a vibrant and growing major and now that PW is one of the largest majors in the department, suddenly our strong performance is viewed—by some in English—as a threat, but that’s a topic for an entirely different article.

As the founding director of the major for its first three years (the program is now directed by Gabriele Bechtel), I worked closely with colleagues to develop the major. We first met frequently as rhetoric and writing faculty to draft out a framework; then we met with colleagues in other programs to design the major. After the initial curriculum was designed and approved, our top priority was recruiting students, with other high priorities being to build new curriculum, to hire and support well-qualified faculty, to foster community and corporate partnerships for client-based coursework (a key component of the curriculum), and to connect students with internships and job opportunities in for-profit and non-profit organizations.

We also prioritized communicating and publicizing results of the major, placing articles about the program with various university communications teams and writing annual reports for the department and the dean. As some of our data will show, we have laid the foundation for a successful major, and as a young major (about to begin its sixth year), it is doing well. But there is, as always, much room for improvement and still so much research to do.
Researching a New Major

As program administrators our definition of research necessarily needs to be broad. In their review of writing program administration (WPA) research in the introduction to *The Writing Program Administrator as Researcher*, Shirley Rose & Irwin Weiser (1999) offer a list of the elements of WPA research, which I quote and paraphrase here. Program research is defined by the following characteristics:

- Developed from local needs and questions but connects with broader field questions
- Informed by current theory and previous research
- Engaged with WPA discourse
- Worthwhile and ethical
- Circulated within the institution and perhaps more broadly
- Multi-methodological
- Documented in program records
- Used to make decisions about whether and how to change programs

Too often a lot of what we do as program administrators is research, but sometimes we don’t see it or frame it that way. This failure to position our work as research stems in part, I think because so much of WPA work is focused inward—building and sustaining a program for local contexts—that we can forget how the local connects to the broader field. But a lot of small-n studies pulled together weave an important fabric of where we are as a field and where we could be. For this reason, I firmly believe that program research is research. Work that we do such as outcomes assessment, institutional data reporting, and surveying employers about our interns’ performance is all research, and we need to be sure to acknowledge and draw from that. Fortunately, in many publication venues, including in *Programmatic Perspectives*, we have a lot of program profiles and articles on program research that are especially helpful for thinking about ways to use research to build programs.

In my discussion for this profile, I focus on some key areas that colleagues and I have researched: institutional enrollment and staffing data, qualitative surveys of students, and curricular assessment. In the end, I reflect on all the research areas we have not yet begun to pursue, including researching key stakeholders such as employers and program graduates.
Institutional Research: Enrollments

Administrators of programs need to know historical, current, and projected enrollments (both numbers of majors and enrollments per course) so as to share that information for various purposes with various audiences and to gain insights into trends in the broader university population. Table 1 shows our PW enrollments over the first five years of the program.

Table 1. Enrollment Growth of Miami University’s Professional Writing (PW) Major

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016 (Feb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Majors</td>
<td>0</td>
<td>48</td>
<td>91</td>
<td>126</td>
<td>158</td>
<td>176</td>
</tr>
</tbody>
</table>

For a new major at a mid-size school (Miami’s undergraduate enrollment is just over 16,000), these increasing enrollments are a key measure of program success to show various stakeholders. For example, do you need to explain to the chair and dean why your program needs more faculty? Is a potential employer wondering if it is worth recruiting students from your program? Is a prospective student wondering whether to pursue this new major? In all these cases, pointing to enrollments as at least one part of the argument is tremendously helpful. Enrollment numbers do not tell the whole story, but they are an essential part of the story.

For our track-based major, it is also helpful to gather information on track-enrollments because we need to know how many students select each track. It varies from year-to-year but generally averages between 25–30% in Digital & Technical Communication, Editing, and Public Writing and Rhetoric respectively and about 10–15% in Self-Designed.

When we proposed the tracks, some colleagues in the department, including writing colleagues, did not want to have tracks; they wanted to have a major with a giant list of elective options. But as those of us who advocated for tracks argued—and as has been borne out in part by student enrollments and student perspectives shared in surveys—the tracks are a key part of the curriculum design because they enable students to identify a clear area of specialization in the broad and diverse field of professional writing studies. Tracks help students understand the major better, their location in the major; and their own distinct emphasis area. The tracks offer an important part of teaching them about the major, showing them that the major has a clear identity with clear specialties within it. Showing that students are distributing across the tracks has been helpful in arguing for keeping tracks.
It has also been useful to gather data on the number of double majors. At Miami University, approximately 25% of students double major. We tracked the number of double majors in the PW program, particularly the number of double majors across divisions to show the range and draw of the major. As of 2016, approximately 32% of our PW majors are double majors with most of those double majors coming from within the College of Arts and Sciences (Journalism, Strategic Communication, Creative Writing, Literature), and some coming from other divisions, especially the College of Education and the Farmer School of Business.

At the same time that the PW major has grown, the majors in Literature in particular have declined, leading some to argue that having a PW major hurts Literature (see Table 2).

Table 2: Enrollments in Certain Majors, 2005-2016

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Creative Writing (CW)</td>
<td>270</td>
<td>271</td>
<td>199</td>
<td>190</td>
</tr>
<tr>
<td>Literature (LIT)</td>
<td>313</td>
<td>246</td>
<td>183</td>
<td>132</td>
</tr>
<tr>
<td>Professional Writing (PW)</td>
<td>n/a</td>
<td>0</td>
<td>91</td>
<td>176</td>
</tr>
<tr>
<td>Scientific and Technical (STC)</td>
<td>41</td>
<td>16</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Total Across Programs</td>
<td>624</td>
<td>533</td>
<td>473</td>
<td>498</td>
</tr>
</tbody>
</table>

When we surveyed students in 2014 and asked them what major they would be if the PW major were not available, 10% (5 of 48 respondents) said Literature, 8% said Creative Writing and the other 82% said other degrees such as Marketing, Strategic Communication, Interactive Media Studies, Political Science, etc. While certainly the creation of the PW major did attract some students who would otherwise be Literature majors, this number is small (fewer than 10 students) when compared to the enrollment drop in Literature of over 100 students since the creation of the PW major. PW at Miami has also drawn a lot more students to be majors into the department overall. And in an era of tight budgets and the accompanying scrutiny of department enrollments overall, the addition of PW to the English department has had a net positive effect on enrollments as shown in Table 2 and Figure 1.
And, finally, it’s useful to track course enrollments. At Miami University any course not enrolling at capacity (20–23 for our writing courses) is looked at closely and courses with fewer than 12 students are cancelled. Fortunately in our program, except for the first year offering a new course, we have not had any under-enrolled courses. But we still watch enrollments carefully because under-enrollment can point to a number of issues, including problems with the course scheduling time (the Friday late afternoon death knell), a disconnect between the course focus and curricular needs of students, or even an instructor who may be struggling a bit with the curriculum of that particular course and needs more mentoring and support. It can also simply point to a failure in marketing a course effectively. Not many students come into the university knowing what usability is or with a burning desire to study the rhetoric of data visualization, but with robust marketing that emphasizes that if you’re going to be a professional writer in any field, you want to develop knowledge in these areas, all courses can be fully enrolled or close to it. Keeping a close eye on enrollments is another important form of administrative research, especially if your upper administration is concerned about revenue generation.

Collecting precise enrollment data is directly relevant to revenue and budget concerns. At Miami University, our budget model is now responsibility-centered management (RCM), which has many components,
but the basic premise, as I understand it, is that money is allocated to programs that are generating revenue versus programs that are “underperforming” and require subsidies. When a student signs up for a course, 25% of the revenue for their credit hours goes to the division of the students’ primary major, and 75% goes to the division that is providing the instructor of record. For revenue concerns, it matters where a student comes from in the university.

Thus, in addition to keeping close track of PW majors in our classes, we also track non-PW majors who come from outside the College of Arts and Science. All of the College of Engineering students taking Technical Writing, all of the College of Creative Arts students taking Digital Writing and Rhetoric, and all of the Farmer School of Business students taking Business Communication are important, not just for curricular planning, but for budgeting concerns. Knowing how much gross and net revenue a course generates under various staffing models is another helpful bit of data to have, especially when arguing for more hires and resources.

Thank goodness, however, the most important work we do in our programs is not tracking revenue-generation, but actually teaching and working with students. Thus, from my perspective, it is the research into student experiences and learning that is most important.

**Student Perspectives**

In order to build the best possible teaching and learning environments for students, we absolutely need their perspectives. They, more than anyone else, know the program and what, for them, has been its strengths, its weaknesses, and its areas of omission, etc.

In our third year, once we had enough majors, some who had been in the program a year or two, we surveyed majors about their experiences in the program (early Spring 2014, n=51). We surveyed students again in the fifth year (mid-Fall 2015, n=71). The surveys were administered anonymously using an online survey program (Qualtrics), and students consented to allow their anonymous responses to be quoted and reported.

One question we asked students was if they knew about the PW major before applying to Miami University. If the answer was yes, they were asked another question: How influential was the PW major on your decision to come to Miami? In the 2014 survey, nine of 51 respondents said they knew of the major before applying, and four said the major was “very influential” and two said “influential” on their decision to come to Miami. However, in just the next year, in the 2015 survey, 27 of 71 respondents knew of the major, and of those 10 said the major was “very influential” and six said “influential” on their decision to come to Miami (see Figure 2).
Data such as that seen in Figure 2 helps us show the positive impact our major is having on broader university admissions. This set of data also points to ways we could increase information distribution to admissions. In the first two years of the major, we sent information about the new major to all 200+ first-year advisors, so they could tell their advisees about it. But what we haven’t done and we could certainly do more of, is reach out to admissions to tell them about the major. As one of the few BAs in PW at a public university in Ohio, we have a lot to market to prospective students.

In response to an open-ended question, why did you choose PW?, students identified a number of reasons: their love of writing (coupled often with how other areas of writing, such as creative writing, and journalism, wasn’t what they were seeking); their particular professional goals; and their appreciation of the focused flexibility of the major. Here are a few representative examples (drawn from the most recent survey):

- I chose the Professional Writing major because it fit well with my interests in writing and allowed for a lot of versatility and flexibility in my course of study.
- I wanted to do business, and professional writing let me mesh together my business goals and love for writing.
- I wouldn't have chosen Miami without the PW program—the likes of which was not replicated at the other schools I was looking at.
- This program is incredible because it has allowed me to build a real-world skill set as a writer/artist/creative that is extremely valuable in
many professional contexts. I love the flexibility of the PW major and its ability to prepare you for a huge variety of career tracks, especially because I see myself changing job titles frequently.

- It was the closest match to what I want to do in a career
- Because I like to write and I want to be able to write a variety of genres in a variety of platforms
- I love to write and knew I wanted to major in something related to this. I first tried Media Studies/Strategic Communication, but realized this wasn’t exactly the path I wanted to take. Then I switched to journalism but decided that that major was too narrow for me. With PW, I get the best of everything!
- I wanted to learn more about the business/technical aspects of writing.

We also asked students what they see as the strengths of the major based on their experiences so far in the program. In addition to the overwhelming response in favor of the flexibility, students noted the strengths of the interdisciplinarity, of the experiential learning gained in community-based projects, and of the value of learning rhetoric.

- The diversity of the professional writing program. While at Miami, I had the opportunity to take creative writing, journalism, communications, and marketing-based courses. Jobs I have interviewed and applied for love the diversity of the major.
- I like how flexible the major is. I’ve taken many courses in different departments that also counted toward my Professional Writing major
- The rhetoric program is very phenomenal
- COMMUNITY PARTNERS/CLIENTS IN CLASS PROJECTS!
- Its versatility. To date, I have held jobs/internships in journalism, marketing, advertising, and PR. All of the companies were impressed with my Professional Writing major and IMS [Interactive Media Studies] minor and felt it was a unique strength that I had not only accumulated a great deal of project experience, but also came in with stellar writing skills. Both of these things I can fully attribute to my major.
- I very much enjoy this major. I find the majority of my courses to contain highly valuable information that I feel adds to my overall skill as a writer, critical thinker, and intelligent contributor in the
modern world. I like that my classes teach me the skills I need to get by in this profession. I have discovered several paths that I never knew were open to me. I like that this is a broad and inclusive major while still offering very specific options to specialize in one or a few interests.

- Based on my experience to date, the strengths I see of the major are an effective presentation of the theories of classical rhetoric.

Having these student voices to share with all the stakeholders in program building has been very helpful. Every year when I directed the program, I wrote a short report to the department chair and division dean about the major, and I always included some student quotes. Given how doubtful upper administration is when faculty in their own program tout the strengths of their program, it is helpful to also have the student perspectives. What students have to say about the major is, as it should be, far more important, ultimately, than anything we as faculty have to say.

Students also have excellent insights into what could be better in the major. In our third-year survey, students noted a number of areas for improvement, including that they would like to see more course work in editing and publishing. In the editing track we only had three classes specifically focused on editing and publishing—a rhetoric and writing editing and journalism editing course and a creative writing course on the “literary marketplace.” Based on student feedback, my colleague, Tim Lockridge, developed a new course in digital publishing where students work with non-profit academic presses to create e-book versions of either print or web-delivered publications.

**Curriculum and Student Learning Assessment**

**Informal assessment.** Assessment is an important form of research and absolutely essential for program building. But not all assessments need to be formal. Sometimes, especially when building a new program, informal assessments are also crucial. At Miami, the PW faculty will periodically get together and discuss the curriculum, considering courses and assignments and looking informally at where and how and even if various program outcomes are being taught. From these discussions we have created a number of new courses, revised the content of others, and we are now in the midst of revising our core courses and adding a fifth track to our major because we realize we aren’t doing enough to address an important outcome for the major.

One outcome we have always had in the program is to “Write effectively in a variety of professional genres for specific purposes, contexts, and audiences, including multicultural and global contexts and
audiences.” While we have the first half of that outcome well covered, we haven’t done so well in the latter half. Some courses in the core have integrated course outcomes around intercultural communication, and we do have an elective course, Writing for Global Audiences, but what we realized in our informal reviews is that our approach to teaching global writing and intercultural rhetoric is hit-or-miss; we can’t say with confidence that every student is gaining enough in that area.

This omission is a problem we recognized for a number of reasons including broader changes occurring at the university, in professional workplaces, and in civic communities. In 2013, Miami revised its general liberal education program into the new Global Miami Plan requiring that all students have global experiences, either through six hours of coursework on campus or through study abroad programs. In addition, Miami’s international student population has been steadily increasing from less than 1% in 2005 to about 12% in 2015. In the PW major, as of 2016, fewer than 3% of majors are international students whereas in majors such as accountancy and finance the numbers are over 10%. This low number reflects how international students at Miami are drawn to STEM and business areas of study, but it also points, we think, to limitations in our own program. In terms of the workplace, global competencies and intercultural communication have always been important, but they are even more so with digital, networked technologies. And, finally, as evidenced by distressing and long-standing issues around intercultural miscommunication in the U.S. (and the world), as educators we need to do all that we can to promote greater understanding and communications across cultural differences.

To that end, then, we are making changes in two areas. First, we are revisiting the courses in the PW core to more systematically identify where and how global writing and intercultural rhetoric can and will be woven into the courses, changes that don’t require running through all the curriculum committees but that do require a lot of meetings and discussions to ensure that all instructors—tenure-line, visiting, and doctoral students—are prepared to and are including this focus when teaching the core courses. Second, we are working on building a new track in the major on Intercultural Rhetoric and Global Writing. The preliminary proposal in this track has already shaped our hiring, and with new faculty in place specializing in this area, we hope to soon begin the curriculum approval process.

I realize that this example may not look like formal research—and it is certainly not an empirical study—but it is an important type of informal research, critical and self-reflective research that programs must continually engage in—call it continuous quality improvement. Getting together to share and map out what is taught where and tracing a
particular outcome through the major is helpful. Of course, this is from the faculty perspective, and what is important as well is to trace student learning from direct assessment of student work, both longitudinally (which we haven’t done, a point I discuss in the closing) and snapshot points in time.

**Formal assessment.** Ideally we would be assessing student learning throughout our major, but with all that we have had to do building the major, we have not been able to engage in such in-depth assessment, but we have engaged in some. For the past three years we have collected two major writing projects from every PW senior enrolled in our required senior capstones. As shown in their writing to specialist and non-specialist audiences, we asked, What can our senior students do well? Where do they need more support?

Because of the diversity of our two capstone options and the requirements of the CAS writing assessment, we did not aim to assess every outcome of our major, but rather we focused on some foundational outcomes that could be assessed in a direct assessment of writing. At the senior-level, when writing for various audiences, can students organize their writing, make an effective argument, address audience(s), meet genre conventions, and demonstrate effective copyediting of their work appropriately for audience(s), purpose(s), and context(s)?

The capstones are also taken by Rhetoric and Writing minors, but our assessment focused on the PW majors. We collected two writing samples from every PW major in the class—for team projects, we collected the single team product. Community projects in the capstones have included creating a web site for a local YWCA, a brochure for a nature sanctuary, signage and displays for a museum, and a video for the county Special Olympics. Where possible, we de-identified the writing (including media) for student names, but in our record keeping we did label the writing so we could track student 1 for both sample A (specialist) and sample B (non-specialist). Because we still have a relatively small number of seniors each year (nine in 2012–13, 27 in 2014–15), every artifact was read by two faculty members who were not the instructors of the capstones. They had one criteria-based rubric for the specialist writing and one for the non-specialist writing. For team projects, we read and scored the team writing and then entered the score in the spreadsheet for each criterion per each individual. Scores were on a 4-point scale, meets to the highest level, meets, minimally meets, and fails to meet.

In the first year, we were distressed at how low the scores were—all in the low 2s and some in the 1s. Because the students had only been in the major two years (transferring in as juniors and then taking 42 hours of the major in a whirlwind two or three semesters), we looked at the enrollment in the capstones that year and found that most of the majors were taking
the capstone before taking or while simultaneously taking foundational core courses. So one change we made from this assessment was to put some prerequisites on our capstones, requiring students to take foundational core courses before enrolling in the senior level course. We didn’t put prerequisites in place at first because we knew we had to make the major as easy as possible to complete in order to gain enrollments in those first years. Since making that change and since gaining more majors who have started the major from their first or second year, and have more time to immerse themselves in PW studies, the scores have gone up to the 3s in most areas.

This senior-level assessment has had a number of other benefits for our major in identifying areas where students need more support and helping us change curricula, but what we also need is more fine-grained assessment to track student learning more directly through the courses in the major. We also need to do more research on placement and career selection for our majors because the research we have done to date has been good, but certainly not enough.

**Avenues for Further Program Research**

Readers with well-established majors will, at this point, be shaking their heads at all we have not done for program research. But it is important to recognize that when building a new program there is only so much that can be done, so prioritizing research is key. For programs that are strapped for resources, as ours has increasingly become because the number of majors outpaces the number of permanent faculty, it is especially important to prioritize because faculty members only have so much time, and there is only so much that can be done. Given that we started with zero majors, our first and primary goal was to get students; find out about their experiences in the program; identify any significant gaps in the curriculum and address them through revisions to existing courses; the creation of new courses, or even more significant changes, such as the creation of a new track; and finally to make a start on assessing student learning more formally. Our next avenues for program research are many.

Working with Miami’s Career Services, we need to do a better job of collecting data on job placement and career selection for our majors. We did ask students in the surveys if they held an internship or if they have graduated and have a job, to list the name of the organization and their position title. But even with a relatively strong response rate (>50%), many students are still not accounted for. Unfortunately, Career Services only tracks graduating seniors, thus we need to figure out a more systematic system for tracking internships and jobs held by students during their
years of study. We need this data for a number of reasons: (1) to continue to be able to showcase the program to administrators, colleagues, prospective students, and potential employers; (2) to consider placement in relation to our curricular offerings; and (3) to build stronger community and corporate partnerships—including alumni networks—so as to extend the profile of our program and to provide more opportunities for students. In terms of curricular offerings, we found that many of our students are getting positions in social media marketing. In addition to the courses we already list as electives in the major from Marketing and Interactive Media Studies (Social Media Marketing and Digital Branding), we are in the process of developing, in collaboration with Creative Writing and Marketing, a possible new course on copywriting for Marketing and a new client-based, study abroad program for Marketing and PW students that we hope to launch in 2018.

We also need to conduct research with our community class partners and with organizations that have hired PW students as interns or employees. What strengths do our majors bring? In what areas do they need to develop more knowledge and skills? Having this information from corporate and community organizations will be especially helpful for providing students with a robust curriculum that they can transfer to other contexts.

And we need more assessment of the major. We need more direct assessments of student projects at more points in the major, particularly in the core foundation courses, and we need a longitudinal assessment to follow a cohort of majors through their years of study. We also need to conduct assessments of some of the outcomes of the major that cannot be assessed in a direct assessment of writing. For example, one of our outcomes is that students will develop effective team communication and collaboration competencies—while a stellar class client project might indirectly indicate success in those areas—more and different assessment measures would be helpful.

We also need to research, including benchmarking with peer institutions and peer programs, in order to advocate for more support. We are fortunate at Miami to be in a relatively well resourced program. But because of the growth of the PW major and because of various turf struggles in the English Department (too numerous to go into here), our program is increasingly under staffed and under resourced. Without more faculty hires and without other forms of institutional support, such as greater budget allocation, we will be hard-pressed to do significantly more research than what we are doing now.
But even with the challenges of growth and the complexities of university resource struggles, we need to continue to pursue as many pathways of research as we can in order to showcase our program to all of our stakeholders and, more importantly, in order to build and sustain the best possible teaching and learning opportunities for students.

References


Appendix A: Professional Writing Curriculum

http://www.miamioh.edu/pw

Professional Writing is an ideal first or second major for students seeking to enter a wide range of public and professional careers. As a Professional Writing major, you will learn to write using digital and print media to make effective arguments and persuade audiences in business, law, government, education, and non-profit organizations. This 42-credit hour major includes the following emphases: (1) Digital and Technical Communication, (2) Editing, (3) Public Writing and Rhetoric, and (4) Self-Designed. The major prepares you to

- Work as a writer or editor in business, government, medical, education, or nonprofit organizations.
- Publish effective print and digital communications in a wide variety of genres and styles.
- Develop strong persuasive skills ideal for future studies in law school or other graduate studies.
- Participate in community and corporate writing projects that provide valuable career preparation.
- Develop personal and public expression for active citizenship in local and global communities.

You may take courses in a number of other programs, including Communication, Creative Writing, Interactive Media Studies, Journalism, Linguistics, and Literature. This variety makes it easy for you to tailor your studies to match your interests and aspirations.

1. **Core courses: Choose all five.**
   - ENG 223 Rhetorical Strategies for Writers
   - ENG/IMS 224 Digital Writing and Rhetoric: Composing with Text, Images, and Sound
   - JRN 201 Reporting and News Writing
   - ENG 411/511 Visual Rhetoric
   - ENG Capstone (take one) ENG 415, Capstone in Professional Writing, **OR**
   - ENG 495R: Capstone in Rhetoric and Writing

2. **Track Courses: Choose one of four possible tracks**
Digital and Technical Communication

One required course; select
ENG 313 Technical Writing

Four elective courses; select from the following list
ENG/IMS 171 Humanities and Technology
ENG 172 Rhetoric, Persuasion, and Culture
ENG 222 Rhetoric of Information and Data Visualization
ENG/IMS 238 Narrative and Digital Technology
ENG 310 Special Topics in Rhetoric and Persuasion
ENG 340 Internship
ENG/IMS 407/507 Interactive Business Communication
ENG 412/512 Print and Digital Editing
ENG 413/513 Grant and Proposal Writing
ENG 414/514 Usability and User Experience
ENG/IMS 416/516 Writing for Global Audiences
ENG/JRN/IMS 424 Ethics and Digital Media
ENG/IMS 426 Digital Publishing
IMS 222 Web and Interaction Design
IMS 413 Usability and Digital Media
IMS 418 Social Media Marketing
IMS 422 Advanced Web Design
IMS 440 Armstrong Interactive Capstone
JRN 303 Online Journalism

Editing in Professional Contexts

One required course; select from
ENG 412/512, Print and Digital Editing OR
JRN 316, Editing and Design

Four elective courses; select from the following list.
ENG/IMS 171 Humanities and Technology
ENG 172 Rhetoric, Persuasion, and Culture
ENG 202 Varieties of English
ENG 222 Rhetoric of Information and Data Visualization
ENG 225 Advanced Composition
ENG 226 Introduction to Creative Writing
ENG 302 Structure of Modern English
ENG 315 Business Writing
ENG 321 Literary Marketplace
ENG 323 Nonfiction Workshop
ENG 310 Special Topics in Rhetoric and Persuasion
ENG 340 Internship
ENG 359 Writing Center Consulting
ENG 413/513 Grant and Proposal Writing
ENG/IMS 416/516 Writing for Global Audiences
ENG/IMS 426 Digital Publishing
JRN 350 Journalism Topics Course

Public Writing and Rhetoric

One required course; select from
ENG 310 Special Topics in Rhetoric and Persuasion; OR
ENG 413/513 Grant and Proposal Writing

Four elective courses; select from the following list.
ENG 172 Rhetoric, Persuasion, and Culture
ENG 201 Special Topics in Language Awareness
ENG/COM 213 Writing for Media
ENG 222 Rhetoric of Information and Data Visualization
ENG 225 Advanced Composition
ENG 245/COM/DST 247 Rhetoric of Disability Rights
ENG 315 Business Writing
ENG 316 Legal Writing
ENG/COM/IMS 324 Ethics and Digital Media
ENG 340 Internship
ENG 359 Writing Center Consulting
ENG 407/507 Interactive Business Communication
ENG 409/AAA 410 Asian/Asian-American Rhetorics
ENG 412/512 Print and Digital Editing
ENG/IMS 416/516 Writing for Global Audiences
ENG/JRN 429/529 Environmental Communication
AAA/AMS/BWS/LAS/WGS 211 Writing with a Purpose
JRN 312/412 Public Affairs Reporting
JRN 318 Advanced Storytelling in Journalism

Self-Designed

Any one required course and four elective courses selected from the three tracks above.

In consultation with your adviser, you may design your own track.

3. Open Electives

Four open electives from any 200-level or above course in the English Department.

This may include 200-level and above ENG courses from the tracks above.

Author Information

Heidi A. McKee is the Roger and Joyce L. Howe Professor of Writing and an associate professor of English. She is Director of the Howe Writing Initiative in the Farmer School of Business, and former founding director of the Professional Writing major. She has co-authored and co-edited a number of books, including: Digital Writing Research: Technologies, Methodologies, and Ethical Issues (winner of the Computers and Composition Distinguished Book Award); The Ethics of Internet Research: A Rhetorical, Case-Based Process (2009); Technological Ecologies and Sustainability (2009); and Digital Writing Assessment and Evaluation (2013). Her current co-authored book project is Business Communication in a Digital Age.
Towards a Participatory Action Research Model for Extending Programmatic Assessment with Industry Advisory Boards

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University of Wisconsin-Stout

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Abstract. As a commentary on how professional, technical, and scientific communication programs might extend traditional approaches to programmatic assessment, this article details a conceptual model for participatory action research (PAR) that draws on a combination of data sources: an industry advisory board and reflective portfolios. We also offer “proof of concept” reflections on that framework and our own intentional advisory board engagement by describing both the process and our results from PAR at the University of Wisconsin-Stout. We further describe ways that the iterative process of PAR can and has proved instrumental in informing program development and revision that leads to student industry employment.

Keywords. advisory boards, program assessment, participatory action research, external stakeholders, industry, curriculum

Typically, investigation into important professional, technical, and scientific communication programmatic subjects like curriculum design, course development, and various institutional, administrative, and faculty issues takes the form of program assessment (Allen, 2004; Cargile Cook and Zachary, 2010; Coppola & Elliot, 2010; St. Amant & Nahrwold, 2007; Thomas & McShane, 2007). This assessment, while often data-rich, only provides faculty members and administrators with evidence about their students, courses, programs, and institutions as they are or have been (Gardiner, et al., 1997; Banta & Palomba, 1999), reflecting on that which has already occurred internal to the academic setting.
This reflective assessment certainly provides valuable data for programs and institutions, but frequently such assessment occurs without deliberative feedback from external stakeholders or careful consideration of current (and emerging) industry needs; often, these standard assessment approaches—which provide limited robust real-world understandings of the import and value of program objectives—leave administrators and faculty without requisite, fine-grained, up-to-date, and industry-focused knowledge regarding the skills students cultivate in realizing program outcomes. As Barbara E. Walvoord (2010) explains, “outcomes should primarily support programmatic goals and be governed by primary stakeholders” (qtd. in Say, 2015), which stands to assist in ameliorating the situation identified by Greg Wilson and Julie Dyke Ford (2003): technical communicators emerging from education or training programs in the field are experiencing a disconnect between expectations and the reality of the workplace. Due to the rapid evolution of our field, additional, complementary assessment approaches are needed to investigate not only what has occurred and is currently happening inside our programs (i.e., reflective assessment), but also what is and will be happening in the workplace, in industry beyond our institutional walls. Ultimately, program administrators and faculty need supplemental assessment methods that engage external industry stakeholders. Moreover, the field of professional, technical, and scientific communication would benefit from a framework for preparing for and carrying out this enriched assessment.

Responding to these needs, several scholars have engaged external stakeholders—including practitioners, managers, and alumni in professional, technical, and scientific communication—and reported the results of empirical research about their desires (Brumberger, 2007; Hart & Conklin, 2006; Kim & Tolley, 2004; Rainey, Turner, & Dayton, 2005; Whiteside, 2003). While the general state of the field(s) identified through these efforts is certainly helpful for program administrators and faculty, this work alone doesn’t provide the most current or burgeoning trends, needs, and competencies represented by local and regional businesses that hire and employ a program’s graduates.

Recently, the field has responded to the need for complementary programmatic assessment models that move toward intentional and systematic external stakeholder engagement. Describing ways we might make our assessment practices more comprehensive, a handful of scholars explicate “participatory program assessment,” (Brady, Hayenga, & Ren, 2012; Salvo & Ren, 2007), and Kyle P. Vealey and Charlotte Hyde (2015) extend this model by including external stakeholders in the
process. These advances resonate with Paul Anderson’s (1995) contention that “a multiperspectival, multivoiced evaluation process…[enables] practicing professionals and educators to work together in a way that respects the validity of each stakeholder group’s perspective” (p. 633). As Vealy and Hyde explain, “our engagement with stakeholders, whoever they are, requires us to cautiously and carefully reflect on our decision-making processes and the impact such actions will have on all those involved” (p. 6), which includes internal stakeholders like students, faculty, and administrators. While these extended participatory program assessment approaches are unquestionably a step in the right direction, the ad hoc and potentially haphazard nature of assembling and engaging stakeholders for assessment creates issues in regularly, systematically, and recursively conducting and applying the results of this programmatic research.

As such, the field would benefit from a robust, organized, and efficient model that generates data from both traditional assessment methods (internal, reflective) and external stakeholder engagement through an industry advisory board. Drawing on a framework for action-research (Lewin, 1951), specifically Participatory Action Research (PAR), we develop here a model that facilitates this data triangulation through an “assessment research” process as a necessary extension to standard assessment practices. Because PAR includes tested, systematic methods and codified frameworks and research approaches, it holds much potential for planning (e.g., assessment research questions, methods, analysis, action items, etc.) and can yield robust results. By evaluating program outcomes and curricula from varied perspectives (e.g., administrators, faculty, students, and advisory board members) through differentiated means (e.g., portfolio assessment and advisory board engagement), programs can intentionally and informedly amend their curricula and associated components to align with industry trends, needs, and desires.

Thus, as a supplemental locus of programmatic assessment research, industry advisory boards can provide complementary data on what should, could, or will be for programs, looking forward and outward at current and up-and-coming industry trends and opportunities. Further, advisory boards meet regularly and consist of deliberately selected/invited members from local and regional industries in which program graduates seek and find employment. As an intentional, consistent, and strategic component of professional, technical, and scientific communication programs—and because of their programmatic, institutional, and industry affiliations and understandings—advisory
boards are poised to provide supplemental data administrators and faculty can deploy in best preparing students for the workforce.

As a commentary on how professional, technical, and scientific communication programs might extend traditional assessment, we detail here a conceptual model for PAR that draws on a combination of data sources: an industry advisory board and reflective portfolios. We also provide some “proof of concept” reflections on that framework and our own intentional advisory board engagement by describing some results from PAR in an undergraduate professional communication program. Ultimately, we describe ways the iterative process of PAR can and has proved instrumental in program development and revision leading to student industry employment.

Advisory Boards in Professional, Technical, and Scientific Communication

In order to best understand how we might engage and capitalize on industry advisory boards for conducting assessment research in professional, technical, and scientific communication, it is important to contextualize the field’s relevant academy-industry relationships and interactions with these types of stakeholders. Nearly twenty years ago in Technical Communication, George Hayhoe (1998) asserted the value of industry advisory boards in the field, arguing that “more academic programs in technical communication need to involve their colleagues in industry on advisory boards that help them plan curricula, place their graduates, fund hardware and software purchases, and set agendas for research” (p. 19). These boards, typically comprised of members from outside academia, meet regularly in order to advise and assist academic programs, administrators, and faculty in assessing a program’s relative ability to prepare students for their future careers (Brockman, 1982). Further, when it is determined (through assessment research) that programs are underperforming, these factions can assist in making those programs and their associated curricula more robust and relevant for current and burgeoning workplace practices.

But, finding ways to strategically and systematically leverage an advisory board’s contributions has not been a clear-cut process in our fields. The decade or so surrounding Hayhoe’s call offered a host of articles with case studies of advisory boards in specific academic programs. These articles collectively deem advisory boards beneficial—especially in the functions of reviewing and (re)envisioning curricula, keeping programs apprised of industry needs and burgeoning trends, and
creating real-world opportunities for students and faculty. However, the field has produced limited advisory board scholarship as of late, and no recently published study has detailed approaches to forming a board, nor have they described best practices for leveraging these invaluable resources, especially in a programmatic assessment context (for this type of discussion, see Söderlund, Spartz, and Weber, forthcoming in *IEEE Transactions on Professional Communication*). However, studies from several related fields help contextualize and provide insight on the academic use of advisory boards, describing them as both valuable and successful. Regardless of the fields in which the boards are used, they perform similar functions: advising on curriculum, providing insight on professional trends and practices, and assisting with administrative and public relations (Defatta, Smith, & Holcomb, 1988; Genheimer & Shehab, 2009; Kilcrease, 2011; Rooney & Puerzer, 2002; Schwartz & Fogg, 1989).

Several academics (Dillon, 1997; Dorazio, 1996; Penrose, 2002) report using their advisory boards to help assess student portfolios and/or program outcomes. In addition to this assessment assistance, these boards might also provide a host of valuable pedagogical and scholarly resources: guest speakers, adjunct faculty, mentors for students, equipment or software donations and grants, and research opportunities for faculty and students (Dillon, 1997; Dorazio, 1996; Yee, 1994). As might be expected, some studies report that programs also find that boards assist in facilitating student internships and providing employment opportunities (Dillon, 1997; Penrose, 2002; Yee, 1994), which often evolve through increased interaction between industry stakeholders and program students.

While several case studies can be found in the literature, only one published study on advisory boards in technical communication prior to Lars Söderlund, John M. Spartz, and Ryan P. Weber’s forthcoming piece employs empirical methods. Distributing a survey to five technical communication programs with advisory boards, R. John Brockman (1982) hoped to determine some best practices and benefits of those boards. According to the data, boards function in a strictly advisory capacity. That is, boards hold no power in official policy making. Further, all survey respondents discussed their boards as valuable and integral to the program’s success, and one respondent argued that boards are “very important, maybe critical to the success of any courses or programs in technical communication,” (p. 138) especially as it relates to assessing the skills, competencies, and knowledge-sets of program graduates.

In professional, technical, and scientific communication, a handful of scholars have written about their individual and program-specific
experiences in effectively starting and maintaining advisory boards. For example Patricia Dorazio (1996) discusses the formation of her program’s advisory board, which grew from a hope that “members would provide advice on everything from course offerings to recruiting strategies and lend credibility to the new degree program” (p. 99). Perhaps the chief function of advisory boards discussed across the relevant scholarship is curriculum evaluation (Dillon, 1997; Dorazio, 1996; Penrose, 2002; Yee, 1994). In this process, advisory members confer with academic programs on possible curricular amendments, often including changes to course content or projects and the addition of new courses. Ideally, this curriculum review is a collaborative process. As Carole Yee (1994) explains, academics and industry representatives “should be able to keep a technical communication program’s curriculum current and each other informed about important new industry and academic trends and concerns” (p. 206). Still, the literature represents various approaches to this collaborative curricular assessment and revision.

**Action Research in Professional, Technical, and Scientific Communication**

The conceptual strategy we propose to extend traditional programmatic assessment research engages these industry advisory boards through action research. Unfortunately, attempting to categorically define action research is fairly difficult: The method itself employs varied techniques in distinctive contexts (McKernan, 2008; Wood & Butt, 2014). Regardless, the basic foundation of all action research is reflective practice linked to action within a particular social setting (Carr & Kemmis, 1986; Elliot, 1991; McNiff, 1993). According to Bridget Somekh’s (2006) *Action Research: A Methodology for Change and Development*:

> Action research integrates research and action in a series of flexible cycles involving, holistically rather than as separate steps: the collection of data about the topic of investigation; analysis and interpretation of those data; the planning and introduction of action strategies to bring about positive changes; and evaluation of those changes through further data collection, analysis and interpretation . . . and so forth (p. 6).

As David Coghlan and Teresa Brannick (2010) explain, there are several important characteristics that help us understand the scope of action research. Most importantly, action research is “both a sequence of events and an approach to problem solving” and a robust and collaborative methodology where “action researchers and members of
the organizational system” endeavor to unearth and cultivate “not just solutions to the immediate problems but . . . [also] important learning from outcomes both intended and unintended, and a contribution to scientific knowledge and theory” (p. 4). While faculty and administrators conduct action research in a host of fields (e.g., education, information systems studies, nursing), for professional, technical, and scientific communication programs, working in partnership with participants from outside the site of practice (i.e., advisory board members), action research can serve as an invaluable approach—a way in which assessment research can become systematic and move beyond reflective description, analysis, and theorizing (Somekh, 2006).

Stephen Toulmin (1996) further emphasizes the distinctive nature of action research for academicians: Those engaged in action research reject the idea that scholars should only conduct research “to produce more, or better generalized knowledge” (p. 54). Rather, it is an investigative method that requires and rewards intentional and cooperative approaches to studying phenomena involving various stakeholders with pragmatic requirements. As Stuart Blythe, Jeffrey T. Grabill, and Kirk Riley (2008) clarify, “action research is contextual, local, and requires intervention, not simply description” (p. 273), and those conducting it mustn’t view or approach people as a means to their own scholarly ends (Sullivan & Porter, 1997); rather, we need to approach all stakeholders in the research process collaboratively, providing them agency in the shared focus of the investigation (i.e., assessment research).

While we find much value in action research for the field—and especially as it relates to program assessment (detailed below)—few professional, technical, and scientific communication scholars have engaged its methods, and none have employed action research approaches in program assessment. In fact, according to Ned Kock (2003), “published examples of action research . . . are hard to find” (p. 105). Recently, Brian McNely, Clay Spinuzzi, and Christa Teston (2015) discuss innovations in qualitative approaches to research that have shaped methodologies in technical communication and help broaden the scope of social and rhetorical aspects of the field. In their Technical Communication Quarterly (TCQ) article, they describe Blythe, Grabill, and Riley’s (2008) three-year action research project, which argues that “the primary goal of action research . . . should be to identify and support the strategies used by community members rather than to educate the public” (p. 272). McNely et al (2015) further note that action research has “adapted and extended traditional qualitative approaches for nuances of contemporary technical communication,” representing the field’s
“methodological and theoretical pluralism [that] reveals the rich and diverse tapestry of opportunities for research and practice” (p. 7). While Dave Clark (2004) has suggested that action research [proper] can sometimes be difficult to carry out in our fields, Patricia Sullivan and James Porter (1997) describe it as extremely valuable when used in processes surrounding the “the mechanisms of policy and decisionmaking” (p. 115). Based on these methodological developments, our field appears to be distinctively positioned to conduct action research in a host of contexts—including, if not specifically, for program assessment.

A handful of scholars have linked action research to service learning in professional and technical communication (Clark, 2004; Crabtree & Sapp, 2005), representing its import for creating meaningful relationships—cross cultural, international, interdisciplinary, and in the workplace—noting that this work can afford our field “a new level of cultural capital” and a “path to relevance” (Clark, p. 308). Most recently, Guiseppe Getto (2015), draws together the fields of technical communication, UX design, and action research—specifically participatory action research (PAR)—describing how PAR aligns with service-learning initiatives in higher education. In his discussion, Getto (2015) describes technical communicators and UX professionals as being “committed to serving stakeholder needs, fostering participation, and including stakeholders in core knowledge-making practices” (“What Technical Communicators”). He further argues that PAR is a natural and useful extension of more traditional qualitative research methods: It ensures that stakeholders are represented in the research, that the focus of the research is on solving long-term stakeholder needs, and that stakeholders are invited into the process as contributing members, not simply passive recipients of the results.

Further, in his “confessional tale” of employing action research methods to investigate group computer-mediated communication, Kock (2003) aligns action research with industry in a way that resonates with our advisory board engagement, describing the method as one with a specific “focus on real world problems,” that “allows the researcher access to ‘rich’ context-specific data that would be difficult to collect through other, more traditional, research approaches” (p. 106). Ultimately, he determines that an action research approach is well-suited for stakeholders “who want to do research related to the solution of complex problems in settings they are familiar with” (p. 120), which aligns nicely with the context expertise that administrators, faculty, students, and advisory board members bring to the PAR cycle of assessment research we outline here.
Taken together, these scholars lay the groundwork for an action research model for conducting programmatic assessment research. While action research in the field’s literature focuses on issues in local communities in a more “traditional” research paradigm, we find it an invaluable model for conducting the combined outcomes-based and needs-assessment programmatic research; as an approach, PAR is particularly well suited to minimize gaps between academic programs and industry needs because, as Xunaxi Cruz Velasco (2013) explains, “in this cooperative relation between participants and researcher there is a permanent respect for knowledge of the members and for their ability to understand and address the issues” (“Participatory Action Research (PAR) for Sustainable Community Development”). This is especially true because PAR allows for data collection and deployment from a variety of sources, including program industry advisory boards.

**Participatory Action Research as Method: A Model for Programmatic Assessment**

At its heart, Participatory Action Research (PAR) is about changing or improving a social situation and intentionally involving those most affected by that process. For our purposes, the educational context in which we develop curriculum to best prepare students for gainful employment in professional, technical, and scientific communication constitutes the social situation in which we deploy these methods. PAR, then, is both a systematic and cyclical process that includes four elements described by Stephen Kemmis and Robin McTaggert (1982): *Observe, Reflect, Plan,* and *Act* (See Figure 1). During each phase, stakeholders work collaboratively to achieve mutually determined goals to move a program in the desired direction. In this section, we’ll not only sketch the stages of PAR, but also provide an extended anecdote—a commentary—from our own journey in engaging PAR to illustrate its relevance and import for professional, technical, and scientific communication programs.
Where to begin PAR’s iterative cycle depends largely upon the status of programmatic assessment research, planning, and revision processes. The model we describe herein assumes preliminary, outcomes-based assessment, and we’ll discuss the use of portfolios for this purpose—although, other forms provide equally appropriate data for beginning PAR.

**Observe**

As such, we enter the PAR model at the *observe* stage because the activities conducted at this phase can help programs consider something that is or is not happening (e.g., students achieving program outcomes), requires the use of available information or data, leads to uncovering new information, and involves various stakeholders in describing what they think is occurring (Crane & O’Regan, 2010). During the *observe* stage, program administrators and faculty ask themselves “what is happening in our program?” with a focus on current outcomes, curriculum, resources, faculty, and related components (e.g., projects, internships, research, and volunteer opportunities, etc.). Further, at this stage, these participants engage gathered portfolio data from the most recent academic year/term. These data, coupled with complementary formative and summative data gleaned through less systematic or structured means—an exit survey in our capstone course, discussions during our student-organization meetings and our dedicated advisement day gala, and feedback from
students at our advisory board meetings—facilitate an understanding of the trends in students’ success in realizing previously established program outcomes. Here, the focus is on looking at what is happening, describing what has happened, and recording the results of those collective observations for discussion during the reflect stage of the PAR cycle. Ultimately, the purpose of observation is to provide a sound base—some specific data points—for reflection by producing a widely accepted understanding of what actually happened (Quixley, 1997) in the academic setting and its relationship to other metrics of program success, including job placement, reactions from alumni, and engagement with regional employers.

For example, at the University of Wisconsin-Stout, faculty teaching in the Bachelor of Science in Technical Communication (BSTC) program first engaged PAR and began moving through the observe stage in 2004-2005, when some of the first intentional and systematic (re)visioning commenced. At that time, the BSTC was a program in its infancy: In 2000, the BSTC became the first undergraduate writing major in the institution’s history, and like all programs at our institution, the BSTC was administratively housed at the college level, with the intention of drawing upon faculty and resources across departments and disciplines. However, the majority of faculty teaching courses in the program hold appointments in the Department of English and Philosophy, which offers no other “traditional” degree in English. That is, most faculty (outside those in the program) teach courses in the general education sequence. During the 2004-2005 academic year, four faculty and one senior lecturer comprised the core staff, and those faculty members were instrumental in the assessment of sophomore and senior student portfolios, an annual program assessment process which began in 2002. During the first observation of program data in 2003, 23 portfolios (out of 75 BSTC students) were reviewed by three program faculty. The findings were favorable: “The results indicate that, on the whole, the courses in the technical communication curriculum are providing the instruction that leads to students’ strong fulfillment of the learning outcomes” (Program Review, 2003, p. 6-7). While this came as welcomed news for the program, the data were incomplete; they represented past experiences of students in the academic setting, and didn’t capture the relationship(s) between those outcomes and industry needs. While the guidelines for portfolio assessment were discussed with the advisory board, these external stakeholders were not specifically engaged in the portfolio assessment process. To best serve the needs of the students at our “career-focused, comprehensive polytechnic university,” we endeavored to more
deliberately collaborate with members of local and regional industries on curricular issues.

**Reflect**

The second phase of the PAR cycle requires intentional engagement with an industry advisory board. During the reflect stage, program faculty and administrators—along with a select group of students—involve members in actively discussing the status of the program based on data gleaned during the observe phase: “This is the stage in the cycle where you need to spend time thinking about the findings of the observations, negotiating meaning with stakeholders and building a shared understanding” (Crane & O’Regan, 2010, p. 12). Here the focus is on a seemingly simple question: “Why did we get these results and what do they mean?” By involving and listening to advisory board members’ different perspectives and interpretations, along with the interactions between those members and our students, complementary data are cultivated. These data provide administrators and faculty with a more robust approach to assessing the current state of the program. Because of their industry affiliations, advisory board members are uniquely positioned to brainstorm ideas or theories about what happened or should be happening by talking it over, sharing insights, and piecing together data points.

During our own programmatic reflection in early fall 2004, BSTC industry advisory board members recommended conducting a “large-scale revamping of the curriculum, not only to update it but to set it apart from competing programs in the region and worldwide” (*Program Review*, 2005, p. 7). To present its recommendations to faculty stakeholders, the chair of the advisory board worked with the BSTC program director to convene a “day-long program faculty retreat involving faculty and staff members” from a range of departments supporting BSTC courses (p. 7), which helped constitute the PAR reflect stage for our BSTC program. This collaborative event was attended by 20 faculty and staff from across the university who were teaching in the BSTC program. At the retreat, representing the collective advice of the advisory board, the chair served as keynote speaker and retreat facilitator, laying out the advisory board’s ideas for the program’s direction. During the keynote, faculty were prompted to help students consider themselves as “directors of user experience” in that the “technical communicator is no longer seen as a wordsmith making documents look ‘pretty,’ but more as a movie director coordinating many aspects of any communication situation into effective wholes” (*Program Review*, 2005, p. 2). Following the address, faculty and staff assembled in small group “ideation sessions” to reflect on the...
existing program assessment data and “generate ideas for qualities, characteristics, and skills the prototypical Technical Communicator of the future will need” (p. 6).

Knowledge sharing among faculty, staff, students, and advisory board participants represents a hallmark of PAR’s reflect stage, where stakeholders collaboratively generate supplemental data to implement in subsequent stages. Board members are especially adept at sharing ideas about the relationship(s) between the portfolio results, outcomes, curriculum, resources, and the current or burgeoning trends in their respective fields. For example, our own board members discussed and outlined the need for a first-year, three-credit foundations of technical communication course that would give students “early exposure to the theoretical foundations as well as the technical needs of being a technical communicator” (Program Review, 2005). Prior to this, our program curriculum didn’t include such a course; students were introduced to the major and field through a one-credit offering, which we (through reflection with the advisory board) determined did not provide a sufficient introduction and grounding. This type of idea-sharing allows for a range of interpretations and meanings to be considered because various stakeholders with disparate experiences can work together to make informed suppositions based on the information generated through the discussions. Further, all involved parties can compare their observations about any competing evidence or perceived disconnects between the academic and industry contexts and consider alternative explanations that might emerge during those discussions. One disconnect industry advisory board members observed upon reflection was a lack of focus on user experience (UX) in the program objectives and curriculum; citing an uptick in UX needs, approaches, and positions in the field, board members encouraged faculty and administrators to (re)envision ways to integrate UX in the program. Propelled by these recommendations, faculty worked to revise the program objectives into three new “core areas” or student program goals: “envision the users,” “create the concept,” and “produce an integrated experience in a professional setting” (Program Review, 2005, p. 2-3). In response to that reorganization, courses were slotted in and added to each respective area to help students more aptly realize program and career objectives. Ultimately, as we experienced first-hand, a combination of internal (academic) and external (industry) voices can precipitate a more fine-grained and relevant understanding of what has occurred in an academic program in direct correlation to industry needs.

Our first foray into PAR taught us much about the value of collaborating with advisory boards: In this case, advisory board members
did not participate in the ideation sessions or small group work. Even though advisory board recommendations had been synthesized by its chair in the retreat’s keynote address, full participation from board members during the event would have made the intentional engagement of all participants, a key characteristic of the reflect stage, even more effective.

**Plan**

During the third PAR phase, plan, participants collaboratively prioritize actions based on portfolio and supplemental data, advisory board members’ insights, available resources (e.g., faculty, infrastructure, technologies, etc.), and expertise. Then, a stepwise and scaffolded approach to resolving identified issues, gaps, or needs is developed. The planning process progressively extends the scope of contribution from advisory board members: Through the intentional, systematic, and regular interaction with program stakeholders, their role evolves at the plan phase from being strictly reflective (advisory) to one where they play an integral part in helping determine action items for curricular and programmatic change with an eye toward pre-established goals. For some, this shift might generate a certain amount of apprehension, and several scholars have expressed their own concerns that advisory boards, if given the opportunity, may attempt to establish and exploit unbalanced power relationships by issuing mandates that stand to threaten the academic integrity of those programs (Carter et al, 2003; Johnson-Eilola & Selber, 2001; Gilbertson, 1987). But, as Michel Foucault (1980) explains, power results from interactions between people, from practices of institutions, and from the exercise of different forms of knowledge. Thus, while all stages of PAR should be both participatory and collaborative, in order to assuage these concerns, it is extremely important at the plan phase to directly involve those affected by the programmatic outcomes—program students and advisory board members who best understand the skills, competencies, and abilities necessary for success in their industries. Doing so allows each member of the group undertaking the PAR itself to “make active contributions to the plan and work collaboratively with one another” (Crane & O’Regan, 2010, p. 12), balancing the power and facilitating an optimal approach to enacting necessary curricular change.

Planning comes in various forms, some of which are small-scale collaborations among involved parties. The retreat discussed above was a site in which faculty and staff came together to respond to advisory board recommendations specific to the vision for the BSTC program. Ideally, the retreat would have included advisory board members themselves—
beyond their collective recommendations provided by the chair—engaging with faculty and staff participants. Instead, faculty and staff worked with the ideas formulated by the advisory board, which were directly applied during the planning in the reflective “ideation sessions” that spurred a list of needs for students enrolled in our programs: That they have opportunities to develop collaboration and leadership skills, global and cultural awareness and sensitivity, user-centered design and practices, and critical-thinking and interpretation skills (*Program Review, 2005*, p. appendix). Participants subsequently “generated several curriculum ideas to meet these needs” (*Program Review, 2005*, p. 56), and the remainder of the retreat found participants engaged in planning activities in which “small groups chose their two favorite ideas and developed them into concept outlines, which were shared with the larger group” (p. 57). Part of this planning included action items for further research into best practices for curricular or programmatic amendment, including the formation of a steering committee that would undertake that work. The thirteen action items included a variety of concepts meant to help prompt curricular change, including goals related to developing courses focused on “user-centered communication,” “foundations of technical communication,” “applied aesthetics,” “information architecture” and the “literature of technology” (*Program Review, 2005*, p. appendix). Other action items related to providing students with “‘quick load’ technical training,” especially related to tutoring students on using design software and expanding study abroad opportunities.

**Act**

During the *act* phase of PAR, internal stakeholders (without formal advisory board interaction) embark upon the process of responding to issues and action items identified in the previous three stages. Operating within institutional guidelines, administrators and faculty work together to determine the best course of action for amending program curricula at a variety of levels, including program and course outcomes, course offerings, substantive projects, and employed technologies. To help ensure that all affected parties have a voice, select students (or recent alumni) are often consulted about the proposed amendments at this stage. Once those amendments are agreed upon and in place, program faculty deliver (teach) those revisions through program courses in which students enroll. Then, through established and ongoing needs-based assessment procedures (i.e., portfolio review and the complementary approaches described in the *observe* phase), programs engage students in carrying out an evaluation of the revised program components.
Ultimately, in order to maintain the collaborative atmosphere established through the PAR, in this process it is extremely important to follow through on carrying out the action(s) determined with advisory board members during the reflect and plan stages. Not only does this engender trust and a partnership for future visioning, but it also holds invested parties accountable in the procedures necessary for programmatic improvement. As such, another essential component of this phase is communication with those stakeholders, keeping them apprised of developments, while recording ongoing observations, reflections, plans, actions, and the effects of those actions in preparation for subsequent PAR cycle iterations (Crane & O’Regan, 2010, p. 31). This communication takes many forms, including (but not limited to) annual or bi-annual advisory board meetings throughout the academic year.

At our institution and in response to the plan put in place at the 2004 all-day retreat, three program faculty formed a steering committee and met weekly over the course of the fall semester. During those meetings, members analyzed and discussed identified industry trends (e.g., the focus on user-centered design and communication), compared the program to undergraduate technical and professional communication curricula nationally, and discussed plans related to program advisory board and retreat feedback. Deriving from the work during the reflect and plan phases, the committee took action: First, they formed a new program mission statement and drafted new program learning outcomes. Then, the committee leveraged the results of the small group interactions from the retreat to outline new program courses for development, along with existing courses that would need to be revised in order to fit the newly established objectives. Finally, in the fall of 2005, the program revision process was launched in earnest, involving all core program faculty in the process. The program director wrote the program revision documentation and provided the rationale for and synthesis of updates in program objectives and curriculum. Then, program faculty divided up the new and revised course proposal paperwork based on areas of interest and expertise. Finally, the program revision passed all university committees in the spring of 2006, and faculty began teaching the courses in the fall, after which we conducted program assessment in response to those curricular amendments.

Conclusions and Recommendations

While programmatic assessment comes in various forms, we find the collaborative, cyclical nature of participatory action research that involves an industry advisory board an invaluable assessment method: As a
people-centered approach to critical inquiry, PAR allows programs to triangulate data by leveraging the knowledge and workplace expertise of targeted external stakeholders with an annual, outcomes-based portfolio assessment process. One of the greatest advantages of PAR is the way that it encourages the active involvement, collaboration, engagement, and empowerment of all stakeholders in the process of initiating changes in professional, technical, and scientific communication programs based on the experiences, needs, and contexts of those involved. Further, through the intentional and scaffolded discussion and reflection on portfolio data gathered through outcomes-based assessment processes, PAR provides an enriching, intellectual, and pragmatic analysis of that information—especially as it applies to workplace application—and plan for curricular amendment. Ultimately, the combination of reflective assessment and regular, structured engagement with an industry advisory board provides programs with a clear(er) vision for how best to prepare students in our programs.

In our own experience, while the PAR process helped inform early program revisions, it continues to impact our program’s vision and curriculum. For instance, in 2009, declining BSTC program enrollments and pressure from administration to increase those numbers prompted program faculty and staff to engage once again in PAR. Specifically, as we launched into the observe stage, the topic of weekly program meetings during the 2009–2010 academic year focused on the impacts that declining BSTC enrollment had on class size, the ability to offer our program’s core course offerings each year, and on the program’s inability to effectively recruit incoming students to the major. The inability to recruit first-year students seemed to be at the heart of the program’s enrollment challenges because the majority of BSTC students were transfer students declaring the major as sophomores or juniors. As a result, our program lacked a consistent group of freshmen students, a regular cohort to move through the program in sequence. This made it difficult to schedule all courses on a regular basis, which brought with it myriad issues for the program and our students.

Through this observation phase, the program director realized that we needed more data about the perceptions incoming students had about the BSTC program in order to unearth the root of our enrollment decline. Program faculty also wondered how attractive the program name “Technical Communication” was to this demographic. Consequently, in engaging PAR as a method for assessment research, the program director distributed a survey to high school English teachers across our state and the nearby metropolitan area, asking them to discuss with their students
their perceptions of the BSTC. The survey revealed that students perceived the “technical communication” label as comprising a curriculum that focused exclusively on technology and the documentation of technical processes, and the vast majority of prospective students found this to be off-putting. Moreover, this perception of the curriculum was shortsighted in that the majority of our BSTC graduates pursued careers not in technical fields but in areas as diverse as marketing, graphic design, web and interactive development, and journalism, among others.

These discussions and the results of the survey prompted program faculty to move into the early stages of a BSTC program revision. While the objective of this revision was to encourage recruitment and to draw from a previously untapped demographic of graduating high school seniors, along the way issues concerning relevancy and currency influenced it as well. Program faculty discussed renaming the major to Professional Communication and Emerging Media (PCEM) and expanding it, offering concentrations in Technical Communication, Applied Journalism, and Digital Humanities. Ideas for a program curriculum structure, as well as new and revised courses, had begun to be formulated. These ideas, along with the collected survey data was the agenda for the May 2009 advisory board meeting, signaling our movement into the reflect and plan PAR stages.

At that meeting, program faculty and board members discussed program enrollment issues, the data collected, and ideas for the new, revised PCEM major. The outcome of the meeting revealed positive engagement by board members and an enthusiasm for the reconstituted major. In particular, board member reaction to the idea of a Digital Humanities concentration was met with keen interest. Program faculty assumed that this concentration would be perceived by board members as less cogent to industry demands as the other concentrations in Technical Communication and Applied Journalism. However, the opposite was true. The board perceived that students graduating with a Digital Humanities concentration would be “equipped not just to effectively produce communications in existing technologies, but be prepared to help companies determine which new technologies may be exploited in the next five years” (Revision of the Bachelor of Science in Technical Communication, 2010, p. 2). Together with faculty, board members brainstormed curriculum for this concentration as well as learning objectives and courses to include in the other concentrations. In addition, board members unanimously advocated for the inclusion of foreign language courses into the revised program curriculum core, believing such experiences to be critical for the success of technical communicators
in a global workplace.

Ultimately, program faculty responded to this advisory board meeting by launching a program revision in 2010, engaging in the act phase of PAR. The program revision renamed the major, expanded into a three-concentration model, and updated the courses offered in the core curriculum to accommodate the new concentration model, all in response to plans put in place during the advisory board meeting. The revision carefully considered not only the currency and relevancy of the curriculum but also what the revision meant in terms of identity—for the program and for students. Renaming and restructuring the PCEM program to involve a variety of professional communication activities—technical communication, journalism, digital humanities—while thoughtfully incorporating emerging media in substantive ways has resonated with students, including prospective ones. The PCEM degree has invigorated program enrollment, doubling the number of students in the major since 2009.

In the end, PAR has precipitated intentional assessment by allowing our program to look backward at what we’ve done through portfolio assessment, vision forward at what we can do better through advisory board interaction, and make appropriate and manageable amendments to our program through collaboration. This cyclical process has proved instrumental in providing program stakeholders—students, faculty, potential employees—with the information, skills, and outcomes to yield a nearly 100% job placement rate of our graduates.

References


Participatory Action Research Model


Revision of Bachelor of Science in Technical Communication (2010). Retrieved from the University of Wisconsin-Stout.


**Participatory Action Research Model**

STEM, community, and industry stakeholders: Rhetorical work and ethical considerations. *Programmatic Perspectives, 7*(2), 4-24.


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Student-Centered Assessment Design in a Professional Writing Minor

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**Abstract.** This article describes an approach to student-centered assessment design for a new minor in Professional Writing at the University of Nevada, Las Vegas. This approach creates seamless connections among courses, breaking down course barriers to promote broader community engagement in learning networks and correlating competencies, student activities, digital assets, and program assessments. To enhance both short-term and long-term course and program assessment strategies, we take a more ethnographic approach by identifying what types of texts to analyze, what features to consider within those texts, and how those features typically evolve as students acquire, use, and eventually master the variety of skills involved. Moreover, the student-centered assessment encourages a more open and process-oriented approach among students and teachers that increases learner control, learner choice, and learner independence.

**Keywords.** program assessment, personal learning, project development, strategies

In many departments and programs across the country, course development follows a traditional "knowing what" approach (especially in English departments). This means courses are distinguished by "how much you know," with pathways to knowledge approved from the top down and enforced through a series of prerequisites and program-approved gateways. In direct opposition to this traditional approach, this commentary describes our long-term plans for the Professional Writing Minor at UNLV to extend beyond “knowing what,” or even “knowing how,” and into “knowing why.” We advocate a programmatic approach and student-centered assessment that develops seamless connections among courses and emphasizes what the National Writing Project refers to as “habits of mind”: creativity, persistence, risk-taking, mindfulness, and engagement (NWP).
Our Professional Writing Minor is a seven-course program open to all majors, and while the majority of students come from the College of Liberal Arts, we have had students representing nearly every school and college on campus. A basic tenet for our program acknowledges that "writing" is no longer limited to the individual writer simply placing words on a page, but instead, it encompasses all manner of digital production and delivery. As such, we promote five primary literacies: rhetorical, visual, information, critical, and digital (see Ed Nagelhout, 1999; Kelli Cargile Cook, 2002). These literacies encompass the core competencies required of the professional writer in the 21st Century, and, therefore, serve as the basis of our program design.

For overall guidance on program assessment, and especially our emphasis on digital production and delivery, we examined various national assessment models. While the National Council of Teachers of English (NCTE) and the Council of Writing Program Administrators (CWPA) both have comprehensive statements about the importance of digital literacies, we chose the NWP’s model because it offers some specific guidance about how to assess invention, drafting, and revision strategies in multi-modal environments. The five domains include context, artifact, substance, processes, and habits of mind; although we consider all the domains when we evaluate and assess, we consider “habits of mind” of primary importance, because it specifically addresses the principle of “knowing why” that we consider our most significant goal. We will address the NWP’s five domains more extensively when we discuss how we assess students’ activities and artifacts.

Because our minor has relevance to majors across campus, and we can’t force students down a single linear path, developing the program, for us, means that course design, project design, student competencies, and our program assessment plan must account for different students with different skill sets and different experiences when they enter (see Nancy Coppola and Norbert Elliott, 2010, for similar thinking at the graduate level). This means, also, that our assessment design must be student-centered. We want students in a particular course to be successful and feel confident in their learning when completing a particular project, no matter their digital experience or previous coursework. We build to them.

This does not mean, however, that we do not also understand the demands of the corporate university in ways similar to those described historically by Elliott (2005) and Kathleen Yancey (1999). This understanding requires that a program account for its practices and, more importantly, expects proof that the program, as on our campus, is meeting...
university retention, progression, and completion goals. But plans to quantify, to more accurately collect, analyze, measure, and report the data of our learners in each of our various courses is merely a seduction of simplicity. We want to offer more than just content limited to a single course at a time, seeking instead to support efficient learning, collaboration, decision-making, and student self-monitoring across a learning environment, as well as to enhance both short-term and long-term course and program assessment strategies. Our course, project, and pedagogical goals remain grounded in the principles we are establishing for our program because we build to the students, not from the university. In other words, we want to avoid the “knowing what” approach to course development and program assessment and avoid a simple accounting in order to break down the walls between course and administrative assessment as much as possible; and while this may be messy, we want our methods to be accessible to everyone.

In order to promote broader community engagement in learning networks and correlate competencies, digital assets, student activities, and program assessments, our program development begins with two guiding questions:

• How can we evaluate a project effectively when each student has very different experiences and very different skills when they walk in the door?
• In turn, how can we assess student progress programmatically based on these differences and report their progress consistently to meet larger university goals and expectations?

In this commentary, we offer our own answers to these questions by articulating our programmatic perspective, which includes strategies that transparently connect program assessment, course assessment, and project evaluation through holistic, process-based, and programmatic practices.

**Student-Centered Assessment Design: Programmatic Starting Points**

Assessment for our writing program has been informed by our reading of the work of Edward White (1985) and a range of program guides, such as the one written by Peggy O’Neill, Cindy Moore, and Brian Huot (2009). Historically, assessment means comparing and contrasting key features of a program, then evaluating the relationships of these key features to determine whether or not the program is “successful.” The “successful” program would exhibit reliability and validity. As Huot (1996) describes,
traditional writing assessment practices assume that student writing ability is a “fixed, consistent, and acontextual trait” that can be compared across different times and locations (p. 550); reliability would be measured statistically according to interrater consistency, and validity would be assumed by observing seemingly objective, recognizable features of “quality” writing. Huot’s model calls for validation procedures that are sensitive to the local and contextual nature of the writing. Susan Delagrange, Ben McCorkle, and Catherine Braun (2013) argue that assessment of multi-media work should involve flexibility (sensitivity to context), transparency (letting students understand the process), and encouragement of critical thinking. At this point in our program development, we associate reliability with transparency; rather than striving for statistical or inter-rater accuracy, we want students to understand that they are always being evaluated according to the same standards, but we are looking at far more than just a final project. We include all aspects of their work, processes, contributions, and effort.

When we first considered program assessment, our model could be represented on a spreadsheet with the key features represented as cells on the x-and y-axis, then compared with larger, programmatic goals. In this respect, our thinking about student-centered assessment in our professional writing program might begin with a simple spreadsheet representation (see Figure 1), where we might assume a specific project in a Document Design course that rates, say, a 4.5 out of 5, will demonstrate that the student has achieved a particular course outcome:

Figure 1: Traditional Assessment Spreadsheet
In order to put Figure 1 into perspective, we want to describe our program by offering examples for each of these key features: program goals, course outcomes, and project criteria.

Considering our emphasis on rhetorical, visual, information, critical, and digital literacies, and also considering the diversity of our professional writing students, our program seeks six primary goals that students will demonstrate upon completion:

1. Proficiency in designing, writing, revising, and editing print and digital texts for a variety of audiences and purposes in professional contexts
2. An understanding of discourse conventions for common professional writing genres
3. An ability to manage large and small writing projects and collaborate effectively at all stages of a writing project
4. An awareness and acuity of visual design
5. A broad repertoire of research and critical-thinking skills that reflect an awareness of social and cultural contexts
6. Strategies for learning digital and software applications and acquiring expertise

In order to meet these goals, we begin with consistent outcomes for teachers in the required and core courses. Our programmatic approach assumes that teachers adopt the same outcomes and approaches for a given course so that our curriculum is robust and applied consistently across all sections of that course. Outcomes for our three required courses include the following:

**ENG 400 - Document Design**

1. Define document design principles and processes
2. Analyze and describe the visual design of documents
3. Recognize important document design concepts in particular rhetorical contexts
4. Make effective document design choices for particular genre

**ENG 406B - Electronic Documents and Publications**

1. Work individually and collaboratively to plan, produce, format, and edit digital media that effectively respond to particular rhetorical situations
2. Create digital media that circulate in ethically and socially responsible ways
3. Manage, analyze, and synthesize multiple streams of simultaneous information
4. Analyze and evaluate digital media based on sound criteria
5. Exhibit responsible social networking skills

ENG 407C - Advanced Professional Communication
1. Analyze and understand rhetorically different digital and professional communication contexts
2. Recognize, learn, and employ appropriate digital and software applications for professional communication
3. Design, draft, revise, edit, and present professional materials based on genre, purpose, and audience
4. Perform effective research and incorporate source materials into professional materials
5. Work collaboratively and productively at all stages of textual production

Similarly, we start with consistent criteria for evaluating student work. Again, consistency means that all courses start with the same criteria and that students understand and are able to adapt and apply these criteria at their own level of expertise. As examples, we offer here one project from each of the courses listed above:

ENG 400 - Document Design

Brochure Revision Project

The final deliverable will be evaluated based on criteria negotiated as a class starting with the following:

- Exhibits effective design principles
- Meets genre requirements
- Focuses on one big idea
- Provides eye magnet on front
- Image(s) a priority
- Guided reading experience
- Articulation
ENG 406B - Electronic Documents and Publications

*Personal Learning Network Project*

The final deliverable will be evaluated based on criteria negotiated as a class starting with the following:

- Visual representation
- Explanation of PLN features
- Explanation of personal application
- Explanation of personal value
- Explanation of sustainability
- Usability

ENG 407C - Advanced Professional Communication

*Usability Screencast Project*

The final deliverable will be evaluated based on criteria negotiated as a class starting with the following:

- Presents information clearly and effectively
- Limits to a specific task
- Shows a complete understanding of the task
- Articulates potential difficulties for users
- Makes recommendations based on walkthrough
- Shows effective revision and editing

Each of the criteria for each of the projects and each of the outcomes for each of the courses are meant to connect programmatically with each other and with our six program goals (for a detailed description of our program objectives, see Denise Tillery and Nagelhout, 2014). And we do present these criteria, these outcomes, and these program goals consistently to our teachers and to our students, not as end points for our courses and our projects, but the places where we all begin. This is not standardization, but starting points for open conversations with our students about their writing. Traditionally, if they are end points, program assessments that connect project criteria, course outcomes, and program goals are presented on a spreadsheet (see Figure 1 as an example), where each of the boxes represents a particular feature, or unit of work, quantifying the connections and showing the “success” of the program.

In other words, if the program goal we are assessing is “Exhibit an awareness and acuity of visual design,” for example, we might compare
and contrast how well a particular artifact, like a brochure created in ENG 400 – Document Design, has met the project evaluation criteria, whether that shows completion of a course outcome, and if that, in turn, meets this particular program goal. Traditionally, when using a spreadsheet for program assessment, the comparison and contrast focuses primarily on numerical scores for each criterion for each of the projects, which creates a very clean, seemingly objective overview of the program. And while we certainly understand the value of using data as a lens into our program practices, we also know that numbers cannot tell the whole story. The problem with this approach is that these numbers only represent the connections of features (criteria, outcomes, goals) based on the evaluation of final products. This approach is insufficient because it represents only one part of the work that students do over the course of a semester (or over the course of a program), and we want to be mindful and reflective of our program and project design in order to promote appropriate learning practices. (This for us is an important theme throughout the collection, Writing Assessment in the 21st Century, 2012.) We want to be conscious of our assessment choices (see Jeffrey Jablonski and Nagelhout, 2010), thereby understanding how and why we made the choices we made for assessing our program.

And, besides, sometimes learning is messy. That competency isn’t always so clear-cut, and that benchmark may not accurately reflect the learning for all of our students, or the learning that they want to do in the course. While one student might be comfortable finding and using templates, which allows her to design products competently but not creatively, another student might be learning a new software application and be much more experimental but perhaps less successful in the short term. So what happens when student learning varies on a particular project, and even in that variation, what happens when their learning splashes over into different columns on the spreadsheet? How do we represent that?

Our goal is to somehow capture the different ways that students learn in our program (in our learning network), and the different ways their learning connects to the learning of other students in the program. We want insight into the students’ processes, habits of minds, and understanding of their context (including constraints and affordances, which we stress as part of their planning and reflecting). A student-centered assessment, then, needs to be holistic and contextual, more ethnographic; we can look for particular features expressed within planning documents, reflections, and artifacts together, but we can’t just rank each criterion and come up with an easily recorded number. Instead,
our representations look more like splotches and splatters: a student might turn in a draft project that represents a devotion to mastering HTML but misses the mark in terms of rhetorical choices. (See Figure 2.)

We want our program to be a free space where students can learn at different paces and in different ways, to hear alternative voices and to consider alternative perspectives. UNLV was recently ranked the second most diverse campus in the country. We want to take advantage of that so that students can not only create knowledge in their own way but also create that knowledge among alternative voices and alternative perspectives, to build internally while always engaging externally. As Stephen Downes (2003) states, “In the design of any educational system, you have to make room for people to know different (and contradictory) things, use words differently, and to create their own knowledge their own way. Not because it’s better. But because that’s how knowledge works” (para. 1). More importantly, we want our program to encourage marginal thinking, to account for that learning that occurs outside the boundaries of a spreadsheet and to reward those who care enough to share those insights with the rest of us.

One of our biggest challenges with assessment (and we would argue
this is true of most professional and technical writing programs) stems from the fact that our students are all over the map when it comes to literate skills and practices: rhetorical, visual, information, critical, and digital. For example, our class might range from students whose only familiarity with digital resources is Pinterest to students who have run their own servers. It’s a challenge to teach, let alone to assess meaningfully. Additionally, as teachers in a small, marginalized program within a larger traditional English department, we ourselves don’t have the expertise and resources to keep up with the latest technologies, or even keep our own digital skills honed as much as we would like.

Given the diversity of our students, in terms of experience as well as background, we must create an assessment strategy that accounts for varieties of experience. In “Making digital writing assessment fair for diverse writers,” Mya Poe (2013) argues that fairness can’t be separated from accessibility in digital writing. She suggests that we collect information about frequency and conditions of access, type and place of access, prior experiences, and kinds of devices individuals use—we do this explicitly, in at least two of the courses in our program.

In contrast to traditional assessment that focuses primarily on final products, our approach requires project development in all of our courses that personalizes student learning, empowers student practices, and provides strategies and opportunities for both. We want students to leave our courses with a variety of strategies for moving confidently in and out of learning situations in all their courses as well as beyond the university setting. Again, we are much less interested in “what” they learn, and much more interested in how and why they are learning the information and skills they will be applying to future rhetorical situations. To illustrate our approaches to integrating student-centered assessment and project development, we will turn to a description of sample courses and projects.

**Student-Centered Assessment Design: Student Starting Points**

One key idea for us is that each course starts with a project and each project starts with an activity that asks students to articulate their own point of entry. They need to tell us not only what their starting point is but also what their goals are. In that way, we can consider both grading and assessing them in terms of

- How they’ve progressed from their starting point, and
- How well they are articulating and achieving their own goals

In our courses, this articulation occurs most explicitly in the planning
Assessment Design in Writing Minor

stage and the reflecting stage, a time when students can describe what they want to learn and how they will do it. This means our projects need to be purposeful, have meaning to the students so they engage with the work (even if it's purely for their own reasons), so they feel like they are accomplishing something concrete. When we ask them to select and review an online reading, or find a piece of software that will help them create a color palette more effectively (for example), they make choices for each for their own reasons and share those reasons with the class. This helps them plan for the application component of the project but also allows them to reflect on the choices they are making. This means, for us, that their work is not just limited to the deliverables (the product). In our experience, a focus primarily on deliverables creates merely artifacts for evaluation, rather than participation on multiple levels in an active constructive process and models for lifelong learning.

To encourage student ownership of the projects, as part of our student-centered pedagogy, we seek to minimize programmatic authority over the projects by limiting initial materials to simple directions, a set of project aims, a framework for completion, and initial readings/resources. From the very beginning, we expect students to take control of each project and develop them to fit their learning goals. In all of the projects, every student contributes resources; they use and review software or apps that are relevant to a particular project and share their experiences with the rest of the class, and they define and construct deliverables that build their competencies for professional writing, as well as meet the project aims.

For example, two assignments that we use are the Personal Learning Network and the Digital Identity Project (see Appendix A for an example of an assignment sheet). The first assignment asks students to use electronic resources to develop their own network of resources for lifelong learning by using tools like Twitter or other social media platforms relevant to their future disciplinary practices. The second assignment asks students to write a series of blog posts describing the types of digital activities they engage in, their purposes, and the extent to which they make use of social media in personal and professional settings. These assignments familiarize students with digital media, and they also start forcing our students (most of whom primarily use social media for personal reasons) to think of these electronic formats as places where professional development can happen. They define their own resources and deliverables: a student whose interest is in marketing, for example, will be drawn to different resources than a student whose focus is technical communication. These assignments also provide starting places
for us to understand our students’ points of entry, which helps us when we consider what we look for when the time comes for evaluation.

A focus on planning and reflecting and students articulating their points of entry forces us as a program to build in the time necessary for students to work, to play, to make mistakes, to share, to collaborate—to learn. We especially want to promote informal learning opportunities by not only giving students that time but also giving them credit for just participating in the class, contributing whatever they can to the course's success, and for just showing up (physically or electronically). It is through these informal activities, including discussion posts, contributions to course blogs, and locating and posting resources, that we cultivate habits of mind such as engagement, persistence, and risk-taking. In addition, the activities are meant to help students work through an analysis of purpose, audience, constraints, and affordances of their chosen platform and application.

**Student-Centered Assessment Design: Points of Process, Artifact, Habits of Mind**

When we accommodate our evaluation and assessment activities to our students’ multiple entry points, we are faced with the problem of what exactly we are considering in our evaluations. As we suggested earlier, we are committed to transparency in that we want students to know exactly how they are being evaluated. Our courses are truly student-centered; we want students to set their own goals and create their own pathways. But when you are faced with a set of final projects at the end of the semester, and in the bigger picture, when you’re faced with the task of assessing how well your program is doing what it’s supposed to do, you face the challenge of what student-centered education really means. Students in a recent course titled “Electronic Documents and Publications,” for example, presented their final projects using a variety of platforms ranging from the relatively simple Storify, which offers ease of use for inexperienced students but very few options for customization, to the fully customizable version of WordPress.com, which some students used in order to be able to demonstrate their HTML skills.

Earlier, we discussed the NWP Multimodal Assessment Project Committee’s (2010) five domains to help guide assessment for multimodal texts. A more complete description of the domains includes

1. **Context**: genres, constraints, affordances, opportunities, purpose, audience, composing environment and delivery mode

2. **Artifact**: appropriate use of structure, medium, and technique
3. **Substance**: quality and significance of ideas
4. **Process**: management, growth, and development of skills and understanding in a particular time frame
5. **Habits of mind**: creativity, persistence, risk-taking, mindfulness, engagement (quoted in Moran and Herrington, 2013, General Guidelines on Digital Assessment section, para. 2)

With regard to these domains, only the second (the artifact) and the third (substance, quality of ideas) can be seen by analyzing the project deliverable by itself. (See Figure 3.)

![Figure 3: Domains for Assessing Multi-Modal Writing (our original visual)](image)

This complete set of domains affirms that we need to evaluate and assess the project deliverable together with the students’ own reflections and descriptions of their processes. We can capture information about context, habits of mind, and process management, for example, in the students’ online reading reviews; and their software or application analysis helps reveal their creativity, persistence, and risk-taking. If the students all review the applications most readily available in our computer labs, for instance, it suggests a resistance to risk or lack of persistence. Students who are unfamiliar with technology are often resistant to exploring unfamiliar applications, but one of the most important skills we can impart
is the ability to look beyond the dominant, often expensive, software applications, and find free open-source applications that will serve their needs and actually be more accessible. We also ask students to write individual final reflection papers at the end of the semester for every class. We can’t assess the final projects, or how they might have met the course outcomes, without also considering these reflections, which give us insight into the students’ processes, habits of minds, and understanding of their context (including constraints and affordances, which we stress as part of selecting and learning tools). So between reflection papers, process-based activities, and artifacts, student-centered assessment looks primarily at how thoughtfully the students selected tools that they were able to learn on their own and how well these tools worked to create the project deliverables the students were required to develop.

As we evaluate final projects, we look for traces of processes, not only as each student describes them after the fact in a final reflection but as they are captured throughout the semester in required blog posts, discussion posts, course messages, and other affordances captured by the learning management system. For us this is much less a data analytics approach, an accounting on a spreadsheet, or big data enumeration; and much more a “thick data” or ethnographic approach to program assessment where student traces—what Tricia Wang (2016) calls “the sticky stuff that’s difficult to quantify” (para. 6)—look more like splotches and spatters on a spreadsheet. As we evaluate processes, we might look at how many examples students analyzed and how many sources they considered before deciding on their final choices. These traces also provide us with insight into the students’ habits of mind, as we can see evidence of how many different tools a student considered when choosing a platform for a project, how long the student spent trying to learn the tool, and how students engaged in various alternatives to solve their problems.

**Student-Centered Assessment Design: Project Processes and Domains**

When we look at all the students’ activities together with the artifacts, then we can assess students fairly based on their level of effort and commitment to achieving goals we’ve set for them as well as goals they have set for themselves. Figure 4 shows the various elements we consider (sites of assessment) and how we map them onto the five domains.
Assessment Design in Writing Minor

Figure 4: Mapping Domains onto Sites of Assessment

Thus, our student-centered assessment is meant to be holistic and contextual. We can look for particular features expressed within reflective memos and artifacts together, but we can’t just rank each criterion and come up with an easily recorded number, as we used to do when we limited our program assessment activities to final portfolios (artifacts only, with limited reflective text).

To address the issue of validity, we consider these questions:

- How well does the student articulate their own goals for each project?
- How does each artifact make the best use of its tool, given all applicable constraints?
- How do artifacts show a progression throughout the program (as measured against what initial projects/first drafts look like)?
- How well are our own sets of tools and resources developing (as instructors and administrators)?

The first two questions are captured at an individual and course level,
reflecting the varying points of entry and how well the students have progressed throughout the semester. The third and fourth questions are programmatic, and as we gather that data, we’ll be able to reflect on our program design as a whole and see how well we’re achieving our program objectives.

To capture student-centered assessment effectively at the program level, however, we need to develop “thick data” through the projects. This means that we try to capture all aspects of a project: all activities, all collaborations, all drafts, and all deliverables. To achieve this, we think of our projects as cognitive process and social practice. As cognitive process, our projects (like students' learning) are developmental and recursive. Considered developmentally, we can describe our projects as evolving through these stages, but we expect it to be recursive, not linear: learners move back and forth among the stages as they work toward submission of project deliverables. As social practice, we want students to engage with the class, to share knowledge and ask questions, to be sensitive to their own learning needs while, at the same time, contributing to the larger ongoing conversations. This open atmosphere helps students learn about and learn how to choose and use a wide range of strategies that will aid in their critical learning and reflective practices. We want students to personalize their experience with the project, to develop from where they are at currently in their thinking and skill levels.

While this project could be the “Brochure Revision” project or the “Personal and Professional Learning Network” project or the “Transmedia Project,” for this article we want to offer a specific, yet brief example to illustrate the ways that students engage early in a course. In our Document Design course, we ask students to complete a series of concept mini-projects. Each one helps students explore a key concept of document design from their own perspective. For example, one of these mini-projects focuses on color theory, and the framework for the project includes six introductory readings on color theory and one link to tools for choosing a color scheme, as well as prompts for three primary activities: review of an online reading, summary of appropriate software or app, and an application of the concept.

These mini-projects occur early in the semester and are designed to help students gauge their understanding of key concepts for document design and to articulate their own starting points through discussion and activity. While we want students to look inward for their learning goals, we also expect outward participation. At the early stages of any project, students are gathering resources for understanding concepts more fully and for completing the work. They are exploring and reviewing uses for
different software or apps that will help them construct more effective deliverables. Our prompts in the color theory mini-project offer initial guidance:

**Online Reading Review**

Introduce the reading by summarizing the content and explain what you liked or didn't like about it.

- What is the main point?
- What are the article's strengths and/or weaknesses?
- Why do you trust their advice?
- Is the writer an expert? How do you know?
- What reasons does the author use to support their position?

**Software/App Analysis**

- What is it? What does it do/enable?
- What are its list of hardware and/or software requirements (and versions of software)? Are there costs?
- Describe a single feature or aspect (brief summary plus step-by-step).
- What are its advantages and disadvantages compared with similar products?
- What resources are available for further study of the software/app?

**Application of the Concept**

Following the analysis performed by Present and Correct at http://wesandersonpalettes.tumblr.com/, find three stills from a movie or television show and describe the color palette used (maybe using an app like http://www.pictaculous.com/).

Then, offer a description of the ways that the color palette enhances (or fails to enhance) the overall themes of the program. Your analysis can be a textual post (with a link to the stills), or you can create a separate document (PPT slides, for example) and post as an attachment on the discussion board. (Some features of this project are adapted from Julia Romberger and Rochelle Rodrigo, 2015.)

Based on these prompts, students post reviews of readings and software applications. As an example, one student offered a review of Coolors for the class:
So I know the cool tools we played with in class were all about how to generate color pallettes from images, but I struggle to create good color pallettes, sometimes without an image to reference or start with. Coolors is perfect for that since it literally just generates five colors at random side by side. On a computer you can just go to https://coolors.co/ and it'll bring you to a page that asks you to either start the generator or watch the tutorial. The app is also available on Android and iOS.

The colors are always complementary, but they start with a range. You can type the "#XXXXXX" signifiers to start with a certain color, and you can adjust colors individually with RGB sliders. By locking a color, you can get it to stay while the others will continue to randomize. They will start to match the colors you lock in. So for example, you might be given two shades of yellow, a blue, an orange, and a green as your first pallette. If you were to lock in the blue, you might get green, purple, gray, black, more cool colors, since the app will try to guess what you're going for. If you lock in a blue and a grey, you can be sure you're going to get relaxing colors, an orange and a red will encourage it to generate warmer colors.

I really liked this app because it becomes an easy way to create and save lots of different color pallettes. You can stumble across a single color you like and create a pallette around that color, or you might find a few that go together well and just want to change one or two colors from the set. Also, the phone app makes it nice for random inspiration. If you think of something really quickly, you can pull out your phone and save it, then go back to your computer later and play around with it.

I'm sure there are more and more color apps like this one, some that might even work better or serve specific purposes more effectively, but I hope this one can help you guys with your projects. I'm sure there are more and more color apps like this one, some that might even work better or serve specific purposes more effectively, but I hope this one can help you guys with your projects.

Posts like this are typical, as well as posts from students who express uncertainty with a concept or frustration with an app, and other students regularly respond, offering feedback, providing support, and generating conversations that can’t be predicted or enumerated. Through activities like these, students explore and establish context for a project, their own understanding of the project, and their own goals for completing the
Assessment Design in Writing Minor

While our mini-project example does not extend to major deliverables for evaluation, it depicts the ways that students situate their learning and their own point of entry in the context of all of our projects. This work makes evident the traces that we might capture for assessment.

This work, more importantly, helps students understand the projects well enough to discuss how their deliverables should be evaluated because effective evaluation in our courses can only occur after students situate their learning and their own point of entry. As a class we negotiate the evaluation criteria for every project, beginning with an initial set of criteria (see the sample lists of criteria that we described earlier). We do this both for transparency and for helping students connect their starting points with their learning goals.

Recall this list, for example:

**Brochure Revision Project**

The final deliverable will be evaluated based on criteria negotiated as a class starting with the following:

- Exhibits effective design principles
- Meets genre requirements
- Focuses on one big idea
- Provides eye magnet on front
- Image(s) a priority
- Guided reading experience
- Articulation

The negotiation of criteria can sometimes be easy with students accepting the criteria as written. Other times the negotiation can be quite contested, with students arguing over terms, or clarifying the range of quality that might be expected. They see more clearly how abstract a word like “effective” can be in different rhetorical contexts or for different deliverables; they articulate more and less important “requirements”; they ask and answer questions of “priority” and “guided.”

In every case, however, the negotiation is imperative, especially for a student-centered assessment because as students soon understand, the negotiation is much less about the evaluation of their deliverables and much more about their understanding of how they will be evaluated and that they should have a voice in how they will be evaluated. In other words, our program assessment includes the deliverables that students create, but it also includes their reflections, which should address the ways that they met the criteria relative to their own learning goals for the
project. Once the evaluation criteria are negotiated and agreed upon, drafts of the deliverables can be completed, for the first time. Student-generated deliverables go through multiple drafts, with time set aside for peer review and teacher review before the deliverables are submitted for evaluation.

All in all, every aspect of our projects seek to model recursivity, to encourage trust in multiple perspectives, and to allow for the time necessary to submit quality materials. We talk about performing higher-order revisions and lower-order edits before they submit a deliverable for evaluation. And the deliverables are the only items evaluated. As we stated earlier, the majority of the work is participatory, a contribution to their own learning and to the learning of their classmates, so our program assessment should reflect this emphasis. As you can imagine, the key to all of this is time. We have to be patient and provide the time for students to explore, the time to experiment, the time to fail, before they make the move to the final submission of deliverables.

We are hoping that this commentary clarifies how our projects, with the help of our students, create and maintain flexible curricula and relevant assets within a networked learning environment that encourages a more student-centered and personalized approach to assessment that increases learner control, learner choice, and learner independence. By promoting an open and process-oriented environment, one that encourages and rewards sharing, experimentation, and personalization, we find our students are genuinely interested in helping one another. Less experienced students ask questions; more advanced students ask questions. When they set personal goals for learning, everyone looks for ways to enhance their skills and help others do the same.

References


APPENDIX A – Instructions for Digital Identity Project

Digital Inventory

The digital inventory project is our first project of the semester, and it will take place over the next two weeks.

Make each post to the Digital Inventory course blog.

First Post: Offer a brief, general introduction to yourself and your electronic media use (due by August 28)

Second Post: Describe your typical 2-way electronic media you use (cell phone and email): when you got your first account, how you typically use it, and your typical communication practices (purpose, audience) (due by August 31)

Third Post: How does your social media use reveal your interests or construct your online identity? Discuss any social media you use: Facebook, Twitter, Pinterest, Tumblr, Google+, or other social media programs. If possible, list the dates (approximate month and year) you created your accounts. Analyze your use: count your last 20 or so most recent posts, sort them by topic and medium, discuss any links, retweets, and discuss any of your own original content, including status updates, tweets, photos posted, or other items shared. (due by September 2)

Fourth Post: Discuss any blogs or more open electronic media you may have used. What are the topics you are willing to share with a broader public? (due by September 3)

Fifth Post: Reflect on the distinction between social and academic/professional uses of these media. Do you have a separate academic or professional profile? How do you keep it separate? If not, why not? (due by September 4)

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Alternative Post: If you don’t have any social media accounts, or if you had them in the past and then deleted them, describe that decision, how you think it might affect your other communication patterns, and why having an online identity is not a priority for you. (due by September 4)
Author Information

Denise Tillery is an Associate Professor of Rhetoric and Writing at the University of Nevada, Las Vegas. She co-edited The New Normal: Pressures on Technical Communication Programs in the Age of Austerity (Baywood, 2015), and has published sixteen articles or book chapters on topics including environmental rhetoric, risk communication, gender and science, and technical communication pedagogy and program design.

Ed Nagelhout is a Professor of Rhetoric and Writing at the University of Nevada, Las Vegas. He has co-edited three collections (The New Normal: Pressures on Technical Communication Programs in the Age of Austerity, 2015; Contrastive Rhetoric: Reaching to Intercultural Rhetoric, 2008; Classroom Spaces and Writing Instruction, 2004), published twenty-three articles or book chapters, and presented more than ninety professional papers on a variety of topics, including writing program administration, teaching in digital environments, technical communication, and writing in the disciplines.
Exploding Technical Communication: Workplace Literacy Hierarchies and Their Implications for Literacy Sponsorship

Author: Dirk Remley
Baywood Publishing Company, Inc

Reviewed by Geoffrey Clegg
The Pennsylvania State University

Working from New Literacy scholarship and using historical documents from the Boomtown Arsenal in Ohio, Exploding Technical Communication offers a comprehensive look into how the influence of literacy sponsorship intersects with home, work, and community. By recognizing that “technical communication, along with managerial communication practices, is a large part of this sponsorship of literacy” (p. 17), Remley opens the door to further inclusion of literacy practices—especially historical research into technical communication and literacy sponsorship—into the conversations inside and outside of the classroom about the role of modalities and literacies students are learning before or after they enter into the workplace.

The book is divided into nine chapters, each of which sets the course for covering and combining the diversity of methodologies (interviews, race and gender sampling, and document analysis) used to craft Remley’s argument for paying more attention to literacy practices in technical environments. Chapters 1 through 7 do a lot of the theoretical and historical lifting for this book as Remley divides each chapter to cover the interrelationship between methodologies of historical research, historical context, multi-modal technical communication within industrial training, training practices and sponsorship implication, visual and experiential literacies, and literacies in the community and home. Specifically, Remley

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uses the first three chapters to explicitly detail the socio-economic conditions of the pre-WWII workforce to highlight how managers at the Arsenal assessed the literacy, primarily writing and reading, of the workers who applied for jobs within the plant. This careful attention to historical records aids in our understanding of workforce needs at a critical time when many of the available workers were still feeling the effects of the Great Depression. Chapters 8 and 9 set workplace literacy and sponsorship within contemporary contexts of Training within Industry (TWI), Manufacturing Extension Partnership (MEP), and virtual simulation training spaces (Second Life). He links themes found in his historical research with scholarship on how companies continue to readdress the need for a literate, skilled workforce who are able to adapt to multimodalities within their given fields.

Chapter 1 sets forth Remley’s argument that there is still a critical need for more investigation into how New Literacy scholarship—especially the works of Deborah Brandt, Shirley Brice Heath, James Paul Gee, and Harvey J. Graff—Multimodality, and Technical Communication can effectively help students and technical communication scholars understand the intricate interplay of these fields in the lives of workers. Remley’s goal is to help the reader see the parallels between historical research into literacies, modalities, and technical communication of the past with the current economic environments of displacement of workers as they relocate around the country and the retraining of workers whose industries have collapsed.

Chapter 2, Methodology and Issues in Historical Research, outlines the inherent challenges of doing historical research familiar to anyone who does ethnographic research or archival work. It is this chapter that I feel is most impressive and useful for students and instructors alike because Remley spends a great deal of time and care in investigating the ethical issues of researching the past practices of workers, management, and the frailty of memory. This chapter is divided into subchapters dealing with issues surrounding his research: “1) concerns of memories of older adults who were interviewed, 2) interview sampling relative to representation of the population, 3) dealing with sensitive workplace information, 4) coding multimodal documents, 5) accounting for missing pages in archival documents, and 6) ascertaining actual use of printer material” (p. 20). The chapter includes two appendices that give the interview questionnaire used in his interview of Arsenal workers and the interview categories and codes he used ascertain the literacy levels of the plant at the time of their employment.
Chapter 3, Historical Context, provides a short outline of the Boomtown Arsenal as it relates to the growth in American industrial preparation for war during the critical period of 1940-1945. Remley uses this chapter to provide some background information on the migration of workers during this period, the government’s sponsorship of training programs during the pre-war years, and the recruitment of workers from across the United States. This chapter, while relatively short, packs in a lot of information that helps explain why the need for understanding multiple literacies, home and environmental literacies, and multimodalities play a part in his examination of the Arsenal in later chapters.

Chapters 4 and 5, Training Within Industry: Sponsored Multimodal Technical Communication and Training Practices, the Accident, and Sponsorship Applications, utilize the wealth of archived material from the Arsenal plant to highlight how the federal governments Training Within Industry (TWI) program helped to “standardize training and some operations around the United States during WWII” (p. 69). By drawing upon TWI and US Army training documents used during the period, Remley reconstructs the multimodalities of instruction used the train new workers, especially the use of aural and visuo-spatial procedures used for all workers regardless of literacy level as well as the growing need for more sponsors on hand to guide workers along during technical procedures. Likewise, Remley uses this documents to better show how the manuals produced for worker consumption during and after training were reevaluated and rewritten to match the needs of a varied workforce. As he points out, the change in sponsorship dynamics helped change the early print-linguistic manuals from text oriented by “recognizing that more visual information in them may encourage workers to review them and understand them better than using only print-linguistic text” (p 101).

Chapters 6 and 7 integrate the historical literacies of the workers into the discussion of workplace modalities by using interviews to locate where and how workers combined work specific literacy with that of their original home and community literacies. These chapters highlight the dangers of rhetorical pitfalls vis-à-vis overly technical warnings in manuals that may not account for prior experience with or knowledge of technical terminology.

For program directors or instructors, Chapter 8, Current Applications of Training Within Industry: Continued Sponsorship of Technical Communication offers an in-depth look at modern literacy sponsorship, or Training within Industry (TWI), that can aid students in understanding the role of mentors during future internships or partnerships. Remley does an
excellent job of providing sample documents from case studies using TWI methods in manufacturing and healthcare. The section on manufacturing covers a series of batch process flow charts, which integrates visual and print-linguistic text in order to streamline troublesome diagrams to be more user-ready and efficient. While the focus on manufacturing and diagrams offer a useful example of TWI, Remley’s focus on the healthcare industries’ response to TWI utilizes a more in-depth look into how mentor-mentee/trainer-trainee contributions to addressing the visuo-spatial needs of staff can lead to productive outcomes in redesigning shadow boards for surgery and room assignments. Remley offers different multimodal applications (YouTube training videos, the virtual reality simulator Second Life, and flight simulators) as territories of modern TWI engagement that require supervision and guidance through modern modalities available to many departments. Many of these new techniques in mentorship and the advancement of collaborative technologies further highlight the historical precedents of adaption Remley set in his earlier archival work at the Arsenal.

Students entering internships or those who are looking at doing archival work in their graduate career will benefit from Remley’s observations concerning mentorship, home and work literacies, and methodology of interviewing workers, doing ethnographic studies, and digging through historical documents in the archives. One of the strengths of this book concerns the intricate explication of how multiple literacies combine with modalities that are often overlooked in technical communication literature, especially those literacies and modalities that have become obsolete in some cases. The interdisciplinary nature of this book also lends itself to being taught in a variety of classes that focus on the ways of knowing in different industries and how workers cope with the technical aspects of their job. Students in the liberal arts, humanities, social sciences, sciences, engineering, and agriculture can easily utilize Remley’s approach for their own projects in technical communication classes across all disciplines since his prose is clear and methodology invites further exploration of local literacies and how these shape audiences.

Program administrators and instructors are also apt to utilize this work as a model for teaching the roles literacy sponsors undertake in the workplace. Chapter 9, Workplace Communication and Implications of Sponsorship, captures Remley’s assertion that we need to look at local literacies in combination with global workplaces, which is nothing new to technical communication; however, his approach asks for a constant reevaluation and adaptation of literacy in the workplace to meet the needs
of an ever-growing multinational workforce that requires quick shifts in working in different modalities. He identifies James Gee’s work on metacognition in the ‘new work order’ as a model for allowing workers, and by extension students reading this work, to understand the need to adapt quickly to new situations as they arise in the workplace. These arguments will help any professional or technical communication program adapt their syllabi by focusing on the constantly evolving nature of the workplace with an emphasis on teaching students how historical workplaces shifted their own practices in response to the needs of war production, influxes of workers from different areas of the country and literacy levels, and management styles.

**Author Information**

Geoffrey Clegg currently teaches business writing at The Pennsylvania State University, University Park campus. His research interests include archival research into composition pedagogies, digging into the archives of small or rural university technical communication programs, and historical print culture. This is an extension of his dissertation, which focused on the place of graduate level pedagogical practices in rural institutions, and serves as a chance for the field to recognize innovation in unlikely places.
In *Science and the Internet: Communicating Knowledge in a Digital Age*, Alan G. Gross and Jonathan Buehl (2016) collect twelve essays and an afterword that explore the relationship between digital technology and scientific argument. The collection avoids the easy hyperbole that sometimes characterizes internet-centered discourse, such as hailing digital spaces as sites of revolutionary democratization or condemning them as an unconditional threat to reasoned discourse. Instead, *Science and the Internet* offers a careful, even-handed critique of a seemingly simple (but, in fact, rather complex) question: “How is the internet changing how science is communicated?” (p. 7). The collection’s social and epistemological explorations should prove useful to any faculty member, administrator, or director looking to enhance or refresh digital literacies toward developing curriculum or programmatic outcomes.

Some common questions weave throughout *Science and the Internet*, particularly about building consensus, questioning credibility, and handling risk and controversy. However, what makes *Science and the Internet* productive reading is its dual focus. The first half of the book focuses primarily on how scientists communicate with other scientists. Authors in this section consider a range of publication issues, including how the Internet has shaped digital notetaking and sharing, characteristics
of the scientific article itself, and the process of peer review and dispute. In contrast, the second half of the book focuses more on how scientists communicate with non-scientists or citizen scientists. Authors in this section evaluate genres and spaces such as podcasts, digital visualizations, blogs, wikis, and discussion forums. Together, the two halves offer insight not only into the rhetorical construction of science as a process but the broader public and social milieus in which science takes place.

The final chapter, an afterword by Charles Bazerman, synthesizes the preceding chapters and forecasts increasingly visible social changes in scientific argument online. Bazerman points to changes in how communities evaluate published works and who controls the review process, but his most significant lesson may be about the shift toward greater collaboration. Bazerman suggests that an “engaged, educated, informed citizenry” has begun to form a new marketplace for science, contributing to the production of scholarly scientific discourse for its own needs (p. 281). If Bazerman’s suggestion proves accurate, these changing relations will require renewed scholarly sensitivity to the sites and dynamics of science rhetoric online.

Read in isolation, *Science and the Internet* has much to recommend it. Anyone interested or involved in shaping department agendas or curriculum design can find in this collection a kind of ‘state of the scientific argument online.’ These collective essays draw attention to a key few digital spaces in which substantial, if sometimes subtle, shifts in discourse are taking place. Those readers new to theorizing the internet, or uncertain what social media ought to be included in scientific and technical communication programming, can find ideas here—such as blogs and wikis—that are robust staples of the literature.

However, this collection will be most useful to those administrators and program directors who have read at least some prior literature about digital spaces and are interested in updating their knowledge. This updating is necessary given the juggernaut speeds at which technological innovation and adoption occur online. While no book can entirely compensate for the rate at which Internet scholarship sometimes becomes outdated, *Science and the Internet* does a generally skillful job using contemporary and near-contemporary subject matter to signal where compelling changes to digital scientific argument may be happening. As examples, both Gross and Sidler provide cases that, although a few years old, suggest larger patterns of change in our near-future digital landscape. Observing the speed and scrutiny with which two blogs (one now defunct) fact-check published science, Gross argues compellingly that “science is far
from self-correcting and that it can no longer insulate its lapses from wider public opinion operating in virtual space” (pp. 72-73). Similarly, Sidler analyzes another defunct blogging community and argues that we are witnessing a slow destabilization of conventional publication processes (p. 114). In general, the collection pairs this kind of extrapolation with recurring references to Owen’s (2002; 2007) work about publishing and the scientific article. By addressing the internet past and future, *Science and the Internet* makes a needed step toward a cumulative, long-term view of digital spaces and their changing relationship with scientific argument.

Consequently, this book serves as a historical snapshot of a dynamic system, which can help program directors identify current topics that matter for technical communication agendas. For readers positioned to advise students about digital research, this collection showcases areas in which they and their students must develop critical literacies to attune themselves to the work that scientists do in professional and public work. This book would also make an excellent addition to a graduate-level seminar in technical communication or rhetorical studies—particularly in a course with a strong methodological emphasis, as the collection assumes that the reader is already broadly familiar with the process of research, publication, and peer review. Many of the essays end in subtly provocative and speculative ways that would lend themselves to group discussion. While Buehl’s introduction suggests a framework through which to understand these essays, readers looking for further direction or who are unfamiliar with Owen’s (2002; 2007) work may benefit from reading Bazerman’s afterword first.

As noted above, many essays in this book update scholarly knowledge about familiar areas of technical communication and rhetoric scholarship. That this book picks up these threads is sensible and useful—after all, blogs, wikis, open-access publication, and digital visualization have been reified into the literature. However, there is an opportunity here for future diversification. Many vibrant digital spaces have emerged in the last decade but received less attention in the literature. For instance, the ways that digital spaces are changing the speed and process of postpublication peer review, as explored by Gross, Sidler, and Fahnestock, might be further developed by studying scientific communication on websites like Reddit, which use an upvote/downvote system to establish consensus within niche communities. Such communities seem to extend and expedite the process through which argumentation gains attention and visibility or inattention and invisibility, as described by Bazerman (p. 274). Meanwhile, recent visual innovations—like film that allows users to move 360 degrees
within prerecorded footage—serve as both scientific record and public learning tool, perhaps contributing to the portraits offered by Wynn as well as Kostelnick and Kostelnick. Such developments should not be left behind as scholars do the important work of updating collective knowledge about familiar genres and technologies.

No scholarship can present a complete survey of the digital landscape, nor should it. Rather, the point is simply that there is a need for intense, wide-ranging scrutiny and awareness of the diverse ways that the internet shapes scientific communication. Even though *Science and the Internet* mostly updates existing knowledge areas, this is itself vital, useful, and necessary. In general, the collection should be required reading for anyone wishing to keep abreast of developments in science online. More specifically, this book can assist program directors by attuning them to relevant digital literacies and the places where technical communication must focus its work to keep pace with innovations in how science is published, reviewed, and constructed increasingly through public and non-expert participation. Overall, the book promotes a kind of vigilance, a bracing alertness for even subtle changes to seemingly staid and stable genres. As Bazerman notes in his afterword, many of the essays in this book use “what is visible in the text” to reveal “indications of less visible underlying social changes that in the long run may lead to bigger changes than anything now noticeable” (p. 269). By looking to the near past, this collection can help program leaders in technical communication navigate the near future.

**References**


**Author Information**

Ryan Eichberger is a graduate student in the Department of Writing Studies at the University of Minnesota, where he teaches technical communication. His primary research focuses on visual-digital rhetoric in the context of climate change and the Anthropocene.