

Issue Preview

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Susan L. Popham
Indiana University Southeast

As I write this introduction, the United States is undergoing the work of electing a new president and attending administration. This election milestone seems an apt metaphor for marking the journal's editorial transition to Interim Editors, Lora Arduser and Lee Ann Kastman-Breuch, former CPTSC president. They will do great work to re-establish the journal as a fundamental benefit for the CPTSC organization; in fact they've already begun doing so. They have already taken the responsibility of overseeing the reviews and the revisions for the next issue, and they are looking for a permanent editor. Additionally, for next year, they anticipate at least one special issue about how crises effect technical programs, and they are attending discussions of how recent and ongoing national attention to marginalized groups might align with the work of editing and publishing. I have great hope in their abilities and in the progress to be made by the CPTSC.

The manuscripts in this issue also, in small ways, call attention to the same topics that have often dominated our national headlines: racism, internationalism, accountability, and innovation. These manuscripts speak to our continuing efforts to lead students into newer and better curriculum and careers. Running throughout all these manuscripts is an emphasis on viewing our teaching practices through new perspectives. First, Chalice Randazzo, "Neo Racism in Résumés: Implications for a Dialogue" poses a question about whether the field of technical and professional communication (TPC) can hold larger conversations around how the activity of racism

applies to both U.S. students of color and international students. Her study uses the scholarship of neo racism to interpret data from a large research study about the résumés, an oft-taught genre in technical and professional communication classes. These findings lead to an argument for TPC educators and programs to better support U.S. students of color and international students. Randazzo's article prompts us all to explore how our teaching practices, even with something as common as the résumé assignment, can be redesigned to better serve the needs of our marginalized and international students.

The second research article by Robert Watkins, "Technical and Sequential: Teaching Comics Production in the Technical Communication Classroom," also prompts us to consider teaching new genres in our technical communication courses. He analyzes the benefits of teaching comics, both the analytic and production skills, in a technical writing classroom. Watkins argues that teaching comics offers a unique set of highly desirable skills to students, notably that of highlighting "sequence" in designing messages, teaching placement, that is juxtaposition and alignment, of visuals in regard prose, and teaching concision in writing. His study is an innovative perspective on the benefits for students of teaching comic production.

The next article by Chris Eisenhart and Karen Gulbrandsen, "Embracing Efficiencies," shows how programs can re-envision their program's design and the modes of assessment in light of decreasing applicants and enrollment. Their article is an excellent commentary about the limitations of assessment theories when applied to one's local institution and about how to frame assessment data to meet the needs of institutional administrators.

Following these two research studies, we turn to two program showcases, both of which highlight innovative ways of redesigning our programs. First, Huiling Ding describes the process, the challenges, and the relevant solutions for building international degree programs with an institution in China. The new program at North Carolina State University meets the needs of Chinese students in technical communication by using a condensed 3+2 model so that international students can study intensively without increasing their costs for a lengthy time abroad. While the program is unique, Ding thoroughly described the lessons learned so that other institutions, thinking about tackling this kind of program, can apply these lessons to their local situation. The second program showcase by Marika Seigel and Ann Brady describes the lengthy process of renovating the graduate program at Michigan Technological University. Their narrative, while also highlighting lessons learned, records the ideas of those former faculty about the need

for and the benefits of re-thinking and re-designing one's curriculum around the needs of students and within the sphere of institutional constraints. Their showcase highlights the importance of paying attention to and engaging faculty and institutional histories while revising a graduate program, after 20 years of existence.

This issue closes with two excellent book reviews by new scholars, Stephen M. Fonash who reviews *Teaching Technical Communication* by Tracy Bridgeford, and Kimberley C. Harper who reviews *Race After Technology*, by Ruha Benjamin. Both reviews make the case that teachers of technical communication need to find innovative and socially attentive ways of engaging students in the TPC classrooms.

With that, I hand the editorial baton to Lora Arduser and Lee Ann Kastman-Breuch, knowing that the journal is in much better hands.

Neo Racism in Résumés: Implications for a Dialog about U.S. Race/Ethnicity and Internationality in Technical and Professional Communication

Chalice Randazzo

Eastern Michigan University

Abstract. Using neo racism to interpret data from 88 students, 20 advisers, and 24 hirers about résumés, this article explains how U.S. hiring laws, culture, and language can be inequitably invoked for applicants whose names trigger questions about race, ethnicity, or nationality. These findings lead to an argument for TPC educators and programs to better support U.S. students of color and international students. It also poses a question about whether TPC can hold larger conversations around how the activity of racism applies to both U.S. students of color and international students of color.

Keywords: international students, neo racism, résumés, students of color

This article is meant to pose a question: Should (and can) technical and professional communication (TPC) build in space to talk about overlaps in racism's impact on U.S. students of color and international students of color? The question fits into a larger conversation about the difficulty of genuinely antiracist dialogues in TPC (Jones, Moore, & Walton, 2016)—a difficulty recently evidenced when U.S. international policies triggered a debate on the ATTW list-serv (Association of Teachers of Technical Writing, 2020). In July 2020, the U.S. Immigration and Custom Enforcement office (ICE) proposed a policy to revoke international students' visas if their universities moved online due to COVID-19. The ICE memo was forwarded to

the listserv in July 2020 as an example of ethically problematic technical communication, and ATTW members pointed out that its ethics were especially problematic against the backdrop of several years of racially discriminatory U.S. international policy. Debate ensued when other members argued that the ICE policy protected U.S. jobs and that international students needed to overcome obstacles on their own merit. Over 30 ATTW members (including retired faculty, tenured faculty, untenured faculty, and graduate students) rebutted those opinions, and the ATTW governing board quickly asserted that statements that perpetuate racism and xenophobia had no place on the listserv. The conversation stretched into more public venues, such as Twitter, illustrating how much effort must be expended in just one flareup of long-simmering tension that TPC has with racism. The ICE policy has been partially rescinded, but what lingers is a realization that we need more discussion about internationality and racism. Not everyone notices the embedded structural racism built into international relations, and more heartening, several TPC scholars desire to enter into genuine dialogue to disrupt racism and xenophobia.

The data in this article supports such conversations by reflexively critiquing assumptions that TPC educators and practitioners (including me) make when we teach or use U.S. *résumés*. While these assumptions are not exclusive to race and ethnicity, this article focuses on data that illustrates the mechanisms by which racism works against both U.S. and international students of color in hiring situations. Kristen Myers (2005) explained the activity of racism as “a systematic means of restricting—if not denying—access to resources and opportunities to a group of people based on race and/or ethnicity” (p. 18). Similarly to other scholars (Akorn, 2008; Bonilla-Silva, 2003; Doane & Bonilla-Silva, 2003; Gallagher, 2003; Omi & Winant, 1994; Roberts, 2012; Roediger, 2008), I found racism not in direct statements about bodies but rather in statements that seemed to be about something other than race or ethnicity: e.g., culture, nationality, or language. In this indirect way, as I explore later, racism insidiously perpetuates even from people who want to promote racial and international diversity.

Confronting this indirect form of racism in hiring is important to TPC because the *résumé* is one of our most commonly taught genres (Melonçon & Henschel, 2013; Russ, 2009), so we have an opportunity to begin teaching future leaders about racism in hiring. Yet TPC research that addresses racism in *résumé* evaluation is scarce. There is a massive amount of popular and scholarly literature about *résumés*, but a review of business, professional, and technical communication journals revealed that our scholarship about *résumés* tends to fall into

a few “how to” categories:

- format and design, such as color, fonts, and graphics (e.g., Diaz, 2013; Guffey & Loewy, 2013; Hart-Davidson, 1996; Johnson-Sheehan, 2011; Popham et al., 2017);
- tone and phrasing, including keywords and spelling (e.g., Bennett, 2014; Boettger & Emory Moore, 2018; Charney et al., 1992; Diaz, 2013; Fillenwarth et al., 2018; Martin-Lacroux & Lacroux, 2017; Quick, 2012; Ross & Young, 2005; Schullery et al., 2009; Yate, 2012);
- sections; organization; and the items, activities, and skills that go into sections (e.g., Davis et al., 2003; Hutchinson & Brefka, 1997; Knouse, 1994; Muir, 2009; Nemanick, Jr & Clark, 2002; Robles, 2012; Smart, 2004; Smith & Berg, 2020; Waung et al., 2017);
- larger concepts for teaching the résumé: e.g., advisory boards (Hunt, Taylor, & Oberman, 2017), collaborative writing (Anders, 2016), ethics (Amare & Manning, 2009; Conn, 2008; McQueeney, 2006), narrative (Hansen, 2007; Smart & DiMaria, 2018), reflection (Randazzo, 2012), research (Randazzo, 2016), or rhetorical analysis (Ding & Ding, 2013);
- the résumés evolving context, including professional eportfolios, online résumés, or social networking (Amare & Manning, 2009; Bacabac, 2013; Diaz, 2013; Killoran, 2006, 2009; Moody et al., 2002; Okoro et al., 2011; Roberts & Roach, 2009; Schullery et al., 2009; Watson, 2019).

Barbara Davis and Clive Muir (2003) are two of the few scholars in business, professional, and technical communication that have directly studied how U.S. minority students anticipate and try to avoid racism by changing résumé information, such as names and addresses. Furthermore, Betsy Bowen, David Alan Sapp, and Nelly Sargsyan (2006) explored how some résumé expectations based in U.S. cultural values become problematic for students from Russia and the Newly Independent States. In very early work on genre studies, Randall Popken (1992) pointed to exclusionary features of résumés that might invite discrimination. Similarly, Chalice Randazzo (2019) explored how discrimination (including racial discrimination) can happen when employers invoke coworkers, customers, or bosses to evaluate applicants.

Largely, though, scholars and educators who want data about racial inequality in résumés need to turn to the social sciences. Perhaps the most compelling evidence comes from the “name studies,” the best known of which was the MIT study that considered racial bias against Black applicants (Bertrand & Mullainathan, 2003). That

study used the research method of correspondence testing, where fake résumés were sent to real job postings. The fake résumés had two variables: the résumé's quality (good or bad) and the applicants' names (which sounded either traditionally Black or traditionally white). Résumés with names that sounded more Black received nearly 50 percent fewer callbacks than white-sounding names, even when the applicants' résumés were equal quality. The MIT study has been replicated multiple times with different ethnic names, including Muslim (Park, Malachi, Sternin, & Tevet, 2009; Widner & Chicoine, 2011), Latinx and Asian (King, Mendoza, Madera, Hebl, & Knight, 2006), and "uncommon" versus "common" (Cotton, O'Neill, & Griffin, 2008). The replication studies have also complicated the MIT study by including variables of job-type, such as inside-versus-outside sales jobs (Watson, Appiah, & Thornton, 2011). The Muslim study also complicated the variables by including "negative background information" on applicants (Widner & Chicoine, 2011). Their collective results followed traditional ethnic stereotypes: Asians evaluated positively regardless of résumé quality, whites and Latinx evaluated positively or negatively depending on résumé quality, and Black applicants evaluated negatively regardless of résumé quality. In response to criticism for questionable methods (Riach & Rich, 2004), correspondence methods have been updated and triangulated with other methods. For example, Sonia Kang, Katherine DeCelles, András Tilcsik, and Sora Jun (2016) interviewed minority students to understand how they "whitened" their résumés by removing or altering information such as names, activities, or organizational memberships that might signal minority status. After the interviews, Kang et al. (2016) ran correspondence tests and found that whitened résumés were more successful. Correspondence studies constitute a growing body of evidence *that* racial and ethnic discrimination plays a role in hiring inequality, but they are not good at detecting the underlying reasons for *why* it happens (as Baert, 2017, and Mishel, 2016, also pointed out). A qualitative study is useful for exploring those underlying reasons, and mine used interviews and focus groups conducted with students, their advisers, and hirers (full details in the methods section) to ascertain what constituted a "good" or "bad" résumé.

Applying an antiracist critical lens to participants' explanations suggested how résumé standards can perpetuate the activity of racism in hiring situations—even when advisers or hirers advocated for diversity. Scholarship in TPC has considered racism using several theoretical lenses, including critical whiteness theory (Johnson, Pimentel, & Pimentel, 2008), critical race theory (Haas, 2012), intersectionality (Hill Collins & Bilge, 2016), and decolonial lenses (Agboka, 2014). My meth-

ods and data led me to the theory of neo racism (sometimes called “new racism”) for several reasons. First, my study was not designed to understand the experiences of oppressed people. This type of important work is being conducted through intersectional studies (Hill Collins & Bilge, 2016), which are typically designed to recruit participants with identity markers in order to understand their experiences: e.g., Ghumman and Ryan (2013) studied discrimination of Muslim women who wear head scarves. Because my study was designed to be a reflexive exploration into résumé standards, I recruited broadly, so my sample was not targeted to a particular identity group.

Second and perhaps most importantly, the data I obtained exemplifies a core tenant of neo racism: that people justify racist practices on reasons other than biological race, especially reasons like “culture” (Bonilla-Silva, 2000, 2003, 2014, 2015; Lee & Rice, 2007; Spears, 1999). As this quote from Jenny Lee and Charles Rice (2007) illustrates, this practice includes association with national origin: “Neo-racism does *not* replace biological racism but rather masks it by encouraging exclusion based on the cultural attributes or national origin of the oppressed” (p. 389, emphasis in original). In his early work, Eduardo Bonilla-Silva (2000) explicates three central characteristics of neo racism, which I paraphrase here, that are most applicable to how I interpret my data.

1. It uses discourse of cultural difference instead of biological race.
2. It invokes a decontextualized, individualistic, merit-based ideology of “fairness;” that is, it does not acknowledge the historical and institutionalized inequities that minorities face.
3. It “incorporates a discourse of nationalism” (Bonilla-Silva, 2000, p. 189–190).

As I explain later in this article, my data fell into trends that paralleled this type of racism, so my data is what led me to this theory.

Finally, using neo racism with my data provided a reflexive look at the *activity of racism* in hiring rather than conflating experiences of U.S. and international students of color. In discussions of how to define “diversity” in TPC, scholars directly addressed internationality’s inadequacy for diversity metrics: “the authors do not consider the growing participation of international students, teachers, and practitioners to be an adequate answer to the lack of diversity in the technical communication field” (Savage & Matveeva, 2011, p. 60). Education scholars, particularly out of student services like career development and counseling, have examined nuances in international students’ experiences with racism in the U.S. For example, Madonna Constantine, Gregory

Anderson, LaVerne Berkel, Leon Caldwell, and Shawn Utsey (2005) found that Kenyan, Nigerian, and Ghanaian international college students did not experience racial categorization in their countries, so they were confused and frustrated at being labeled as minority groups in the U.S. Likewise, studies have explored how international students do not understand race—and, by extension, racism—as it is encoded in the U.S., and how they learn to cope with that aspect of U.S. culture (Fries-Britt, George Mwangi, & Peralta, 2014; Mitchell Jr, Steele, Marie, & Timm, 2017). In addition, within-group differences mean that white European international students have an easier time integrating into U.S. culture than Black, Asian, Muslim, and Latinx students do (e.g., Fries-Britt et al., 2014; Lee & Rice, 2007; Poyrazli & Lopez, 2007).

Comparing experiences of U.S. and international students of color also risks misrepresenting a solidarity or cohesion between these groups. Constantine et al. (2005) found that international students are discriminated against by U.S. students of color. Conversely, Donald Mitchell Jr. et al. (2017) and Zachary Ritter (2013) studied how international students form racist opinions against U.S. people of color. These groups also have different access to institutional resources about racial hiring discrimination, with several scholars noting that international students need more support in understanding how discrimination and work restrictions can impact their career opportunities (Balin, Anderson, Chudasama, Kanagasigam, & Zhang, 2016; Gautam, Lowery, Mays, & Durant, 2016; Sangganjanavanich, Lenz, & Cavazos, 2011). While racism impacts students' adjustment to school, social life, and careers, it is erroneous to say that international students of color have similar understandings or experiences of racial bias as U.S. students of color—or even similar understandings and experiences as other international students.

Therefore, in what follows, I focus on the activity of racism rather than trying to conflate the experiences of U.S. and international students of color. After explaining my methods, I explore my results through a neo racist lens. Neo racism is not commonly used in TPC; a recent search of several major journals (*BPCQ*, *Connexions*, *JBTC*, *JWTC*, *Programmatic Perspectives*, and *TCQ*) yielded only two articles that referenced neo racism or Bonilla-Silva (Randazzo, 2019; Williams & Pimentel, 2012), so I do not intend to say that neo racism is *the* answer to understanding racism in résumés. Still, opening conversations about how racism impacts both U.S. and international students could have benefits for TPC educators, programs, and scholars who want to subvert racist activities and promote racial/ethnic diversity regardless of nationality. First, open acknowledgement of racial discrimination

against international students can help programs realize that these students need resources to combat structural racism. Especially at a time when some international students feel more threatened by the U.S. federal government (Saul, 2017) and are clearly targeted by U.S. policies such as the ICE memo of July 2020, these conversations are important to maintaining international students' social, emotional, and academic stability. Second, my results demonstrate neo racist activities that obliquely label U.S. students of color "outsiders" based on culture rather than biological race/ethnicity—a subtlety that needs more exploration in TPC programs and scholarship (Haas, 2012; Johnson et al., 2008; Jones et al., 2014; Jones, 2016; Savage & Mattson, 2011; Thrush, 1997, 2000; M. F. Williams & Pimentel, 2012; Miriam F. Williams & Pimentel, 2014; Williams, 2013). Whether and where TPC can make space for discussing racism's overlaps for U.S. and international students of color is an open question; but these are two reasons to have these conversations.

Methods

The cluster of data I discuss below comes from a multiphase (IRB-approved) qualitative study into the research question, "What constitutes a 'good' or 'bad' U.S. résumé?" My goal with this research was critically reflexive. I teach the résumé and have used it to hire my own staff, and I wondered what standards I had learned, taught my students, and maintained in my hiring practices. I further questioned whether any of those standards perpetuated inequalities that I had not experienced as a white woman.

I conducted two phases of research that triangulated results from both applicants' and hirers' perspectives. Phase 1 focused on writers' processes and strategies for creating a résumé, and my participants were 88 undergraduate students and 20 advisers (career counselors and instructors). I conducted 12 interviews and 15 focus groups with nine Chinese, one French, and 53 U.S. students (Latinx, Black, Asian American, white) from two sites:

- A large research-one university in a midsized Southwest city (approximately 35,000 students; city population approximately 250,000)
- A private liberal arts college in an urban Western city (approximately 3,500 students; city population approximately one million)

I also surveyed 25 students from the above two sites. At the same time, I interviewed 20 U.S. advisers from three sites: the research university, the liberal arts college, and a small community college in a rural city of

the same Western state as the liberal arts college (approximately 1,500 students; city population approximately 15,000).

Phase 1 yielded just over 39 audio hours of data, with 23.75 audio hours from students and 15.5 from advisers. Following Johnny Saldaña's (2012) qualitative coding techniques, I transcribed the audio files and coded them using NVivo. I used inductive coding (Elo & Kynäs, 2008) to iteratively create and refine categories of major criteria and personas that writers tried to construct during the writing process. To increase trustworthiness (Lincoln & Guba, 1985) of these findings, I conducted member-checking emails with participants to obtain their perspectives on the categories and to help me refine them.

The categories from student and adviser data became the basis for interview questions in Phase 2 of my research. For example, students and advisers reported that concern about potential discrimination was a criterion they used to decide whether to include or exclude information on their résumés. So, that trend turned into this question for hirers:

Concerns about discrimination: This was rare, but it did show up. For example, some career counselors advised students to be more vague about political or religious affiliations, and one student removed dates from her college because she was concerned about ageism. Another student was told to remove an award because it showed her ethnicity. So, my questions to you are these:

- i. Should discrimination even be a criterion?
- ii. Not many students voiced concerns about it. Is it something they should take into consideration? What would you recommend they take into consideration about it?
- iii. Some students have expressed the sentiment that if an employer doesn't hold their values, they don't want to work for that employer. Is this a useful perspective, in your opinion?

Using trends in students' and advisers' data to create interview questions for hirers allowed me to do two things: obtain hirers' opinions on writers' strategies and refine the Phase 1 categories. This second phase consisted of interviews with 24 people who hire in different industries and U.S. regions (see Appendix A for demographics, industries, and regions). I call these participants "hirers" because they did not exclusively work in human resources, but all of them had used résumés to hire someone for their industry. Hirers were recruited in three ways: 1) through my professional contacts, 2) through cold-calls and emails to businesses on the Black Chamber of Commerce and Hispanic Chamber of Commerce websites in two cities, and 3) through referrals from other hirers. Although this article focuses on discrimina-

tion, hirers were not recruited based on whether they had witnessed discrimination. Instead, they were recruited to give overall perspectives on the data from Phase 1 as well as to discuss their views of what constituted “good” and “bad” résumés. I included one question about discrimination in the hirers’ interviews (see above), but many of their statements about discrimination happened organically during these discussions, based on their observations of what they had witnessed in their professional experience. Phase 2 yielded 31 audio hours of hirer interviews, with the shortest interview 45 minutes and the longest 2 hours 50 minutes.

To code hirers’ data, I used both inductive and deductive (Elo & Kyngäs, 2008) qualitative coding techniques. The process was largely deductive because I created interview questions based on premade categories from trends in students’ and advisers’ data. This process allowed me to deductively use hirers’ feedback to refine the categories that writers had discussed. But my coding process was also inductive, as I built new categories if/when hirers brought up concepts that students and advisers had not discussed. When a new category arose, I re-coded all my data (students, advisers, and hirers) for that new category.

As part of the coding process in both phases of research, I analyzed statements from students, advisers, and hirers to ascertain whether any pertained to U.S. and/or international applicants of color. The statements were not about “applicants,” specifically; more typically, they were recommendations about *information* that applicants should include or exclude from a résumé. In addition to coding for statements about biological race (which were rare), the use of neo racism as a coding lens allowed me to include participants’ statements about culture that inequitably affected applicants of color. I coded direct use of the word “culture” when it related to race or ethnicity, but I also coded indirect stand-ins: e.g., “attitude,” “language,” or “ghetto.” Neo racism specifically unpacks racially based stereotypes that do not manifest as biological racism, so this theory was important for understanding and coding the activity of racism as it actually manifested in participants’ discussions.

Especially when discussing discrimination, as I do in this article, the whiteness of my final samples almost certainly affected the results. Fifty-three students (60% of 88 total students), 18 advisers (90% of 20 advisers), and all 24 hirers (100%) were white. This data set means that I do not attempt to explain the experiences of people of color; instead, the below results are more accurately interpreted as white perspectives in hiring and evaluating the quality of a résumé and how those perspectives might result in racial hiring discrimination. This

demographic skew still yields useful data because several studies have noted that hirers are predominantly white (Kmec, 2006, p. 670; Smith, 2002, p. 522; Stoll, Raphael, & Holzer, 2004, p. 283); and the results still demonstrate the complexity of résumé standards that, even though not phrased as biological race, can materially prevent U.S. and international applicants of color from gaining access to employment.

Using qualitative excerpts interspersed with relevant quantitative frequencies, the next section outlines my results of résumé indicators and evaluative criteria that are linked to neo racism: names, language, and culture. Unlike the quantitative and questionnaire studies that have been done on hiring discrimination, my qualitative interview method shows the way résumé signals are interconnected in the process of hiring discrimination: names can trigger assumptions of an applicants' race/ethnicity, leading to doubts about language skills and cultural fit. Although the frequencies of my results are small in some of these areas, they illustrate why scholars in TPC might want to open conversations that address the activity of racism and how it impacts people of color from the U.S. and internationally.

Results

During interviews about “good and bad” résumés, direct reference to race was rare. Of the 63 students in interviews and focus groups, only six (9.5%) spoke about discrimination at all, with only two of them (3%) discussing something similar to racism, although those two instances were couched as “language” or “culture.” Advisers were more forthcoming. Eight advisers (40% of the 20 interviews) estimated that approximately 10 percent of students they advised (interestingly consistent with my own findings) were concerned about discrimination in general. Three advisers (15%) specified discrimination based on race/ethnicity, and four (20%) reported discrimination of international students. All 24 hirers (100%) spoke about discrimination because I asked them about it directly. However, 17 (71%) thought applicants should be concerned about discrimination in general (the other seven did not consider discrimination a major issue); and only two (8%) specified racial discrimination. And none of the hirers referred to an applicant's race or ethnicity as a negative. In only one case (a student, 2%) was a person's *physical* appearance—biological racism—reported as an actual point of potential hiring discrimination, although that intersected with the neo racist indicator of “language.”

Instead of direct references to physical race, a cluster of data suggested some categories of information that were indirectly attached to race: names, national policy, language, and culture. Table 1 overviews

the frequencies and coding notes for each category. This section is organized around these categories (I've removed participants' names, industries, and other identifying information for anonymity). To varying degrees, these indicators overlapped as potential points of discrimination for both international and U.S. applicants of color, albeit with differential application.

- Names: As I explain below, the nature of these statements actually collapse U.S. and international applicants of color, so these fully overlap for those groups.
- U.S. hiring laws: These statements had to do with U.S. laws that govern hiring, including international work visas and Affirmative Action. Work visas applied to international applicants, and Equal Employment Opportunity Commission (EEOC) and Affirmative Action applied to U.S. applicants. However, U.S. applicants also had to worry about international laws if their names trigger questions about international status.
- Language: The statements in this section demonstrate that "language" applies to both U.S. and international applicants of color, but they are differentially applied to each group.
- Culture: The statements in this section suggest that "culture" is primarily applied to international applicants of color; however, it also includes references to "attitudes" that are specifically affiliated with U.S. applicants of color.

I have presented them in this sequence because, according to my data, names can trigger assumptions about international status, language, and culture. In addition, although I have presented these categories as somewhat discrete for purposes of data reporting, they certainly intersect. For example, some of my participants collapsed names and language together when they explain how names trigger prejudices about language skills. So, the delineation between these categories is more for organization than to say that they happen independent of each other.

Table 1. Categories of Information Indirectly Attached to Race

Category	Frequencies of Students (N = 63), Advisers (N = 20), Hirers (N = 24)	Notes
Names	No students 3 advisers (15%) 2 hirers (8%)	Coded when participants discussed names.
U.S. Hiring Laws	International hiring laws: 4 advisers (20%) 3 hirers (12.5%) EEOC and Affirmative Action: 1 student (2%) 2 advisers (10%) 6 hirers (25%)	Most statements about EEOC and Affirmative Action were about how they protected applicants; but 3 hirers (12.5%) noted inconveniences and threats of EEOC and Affirmative Action.
Language	1 student (2%) 3 advisers (15%) 19 hirers (79%) cited “professional grammar” as a hiring criterion 6 hirers (25%) referenced language in ways that linked to race, ethnicity, or nationality	Not all references to language were connected to race, ethnicity, or nationality. To track their connection, I coded the following terms: “bilingualism,” “translated,” “slang,” “English,” “Spanish,” “Asian languages,” “language skills,” “accent,” and one AAVE reference.
Culture	General company culture: 11 students (17%) 6 advisers (30%) 14 hirers (58%) Culture linked to race, ethnicity, or nationality: 4 students (6%) 5 hirers (21%)	Company culture applied to all applicants. To track culture linked to race, ethnicity, or nationality, I coded statements that were clearly attached to a race or ethnicity in the larger conversation: e.g., the discussion about praying several times a day.

Names

Three advisers (15%) and two hirers (8%) discussed names as a potential site of hiring discrimination, with two advisers (10%) specifically citing the MIT “name studies” that I discussed at the beginning of this article. Two advisers (10%) explained that, to avoid being labeled international, U.S. students with “ethnic names” should explicitly indicate their U.S. citizenship. Based on her experiences with employers, one adviser asserted that she recommended to applicants, “If they’re U.S. citizens but they have a very strong ethnic name, I want them somewhere to have ‘U.S. citizen’ on that résumé” (personal communication, January 2014).

Importantly for discussing hiring inequity, only people who have names affiliated with certain races/ethnicities have to combat this issue—it is not universally applied to all international or U.S. applicants. The above adviser noted that international students insert a nickname,

but “from certain regions in the world may experience it more so than others” (personal communication, January 2014). This oblique reference to geography, I learned later in the interview, was in reference to Asian applicants: as she explained, employers have complained to her, “every résumé I received was Asian” (personal communication, January 2014). Another adviser explained that a U.S. citizen named Mohammed changed his name to initials (personal communication, January 2014). So, not all international students face this issue, and not all U.S. citizens face this issue—only those whose names suggest ethnicities that an employer has labeled problematic, such as Asian or Muslim.

Although discussions about names and discrimination were a very small percentage of my sample, they powerfully demonstrate three important ways that names link to neo racist hiring practices. First, names were only problematic when they sounded as though they came from racial/ethnic minority groups. Second, through “ethnic sounding names,” U.S. applicants of color became collapsed into international status, hence the adviser’s recommendation that applicants with ethnic-sounding names make the extra step of listing U.S. citizen on their résumés. And finally, ethnic-sounding names—whether from U.S. citizens or international applicants—could trigger other neo racist justifications for not hiring an applicant. The next sections explore those justifications: U.S. hiring laws, language, and culture.

U.S. Hiring Laws

Four advisers (20%) and three hirers (12.5%) referenced U.S. hiring laws that govern international workers; and six hirers (25%), two advisers (10%), and one student (2%) invoked EEOC laws and Affirmative Action policies. In reference to international hiring laws, the advisers and hirers explained that being labeled “non-U.S. citizen” was problematic because U.S. work visa requirements and restrictions make international applicants more difficult to hire, as illustrated in this adviser’s assertion:

For my department, especially, we have a lot of international students. Some of them do not have U.S. visas or U.S. citizenship. And for the smaller [redacted] companies that don’t have all the big bucks, they’re looking for just, um, well, American citizens because—not really there’s less [preparatory] work but because they don’t have to finance the intern as much. It’s just easier for the whole process.
(personal communication, January 2014)

Not all employers have government clearance to hire international applicants, and the current federal government is attempting to make these restrictions even more stringent for people from some countries.

U.S. EEOC laws and Affirmative Action were more complicated. The

six hirers (25%), two advisers (10%), and one student (2%) discussed them as proof that the U.S. protects applicants of different races. However, not all statements about EEOC and Affirmative Action were positive. Three hirers (12.5%) discussed inconveniences and threats of EEOC and Affirmative Action. One hirer (4%) complained about the paperwork that Affirmative Action caused and the audits that might happen, and another hirer saw this as a potential legal threat to the company:

Because, it sets us up, if they do have this, if they do have their race, religion, their kids, their all—if they have all that listed on their résumé and we don't hire them, then they can go running and screaming that we were unfair to them. (personal communication, May 2016)

These last ways of talking about EEOC and Affirmative Action indicate that these policies are framed as ineffective, a burden on daily work functions or, at worst, a legal threat to the company. And the hirer's quote about "running and screaming" shows how the blame for that threat moves from the U.S. policy to the applicants themselves.

This section demonstrates how U.S. hiring laws can be used to make U.S. applicants of color and international applicants seem like an inconvenience or threat. Again, because international status can be triggered by ethnic-sounding names, these neo racist justifications are inequitably applied to applicants with those names. And names trigger other neo racist justifications for not hiring an applicant, such as language. As I explore in the next section, a person's ability to speak English—"professional English"—is another evaluative criterion for hiring, but it was differentially applied to U.S. and international students of color.

Languages

One student (a U.S. citizen) discussed concerns about putting non-English languages on her résumé, and three advisers (15%) reported that they had encountered international and U.S. students who were concerned about putting a non-English language in the "skills" section of their résumés (personal communication, January 2014; February 2014). Hirers added more complexity to the discussion: all 24 discussed language proficiency as a criterion for hiring, with four of them (17%) specifying that bilingualism is a desired skill rather than a hindrance. However, 19 of the 24 hirers (79%) explained that "professional grammar" was an important screening criterion, and they specified that poor grammar and typos were a cause for rejection (11 of them, or 46%, said even one typo was enough to reject a candidate). This hirer, for example, directly equated an applicant's professionalism to their

grammar:

Interviewer: How do you know you're looking at a professional when you're looking at a résumé?

H17: Are there typos? Are there—is there parallel verb list? Have they chosen good action verbs versus just “I did this, I did this, I did this.” [...] It sounds kind of superficial, but it's true... (personal communication, July 2016)

By contrasting professional grammar with its opposite (typos and grammatical errors), hirers coded “professional” as English grammar taught in U.S. schools. Importantly, these general discussions of language were not necessarily connected to race, and this criterion applied universally to all applicants.

But digging into the data suggested that applicants from U.S. and international racial and ethnic minority groups can be inequitably (pre)judged on their ability to speak professional English, which connected language to racial bias. In relation to international applicants, “language” usually referred to an applicant's ability to speak English at all. In explaining their boss's emphasis on correct spelling (grammar), one hirer (4%) linked it to international languages by using the term “translated”:

Hirer: I have worked for an employer who literally would not allow me to hire the best candidate because she had three or four misspelled words in her résumé.

Interviewer: Is that a problem for you?

Hirer: If I see it once, I don't have an issue... even twice, if it's the same word misspelled multiple times. But if I can see that it's a language barrier in the way the sentence is composed or it's not translated properly... then it may become an issue. (personal communication, June 2016)

A different hirer (4%) noted that a “not intelligible” accent was problematic (personal communication, May 2016), even when someone spoke English. Statements like these are not universally applied to all applicants, so they demonstrate a bias.

And in my study, that bias fell inequitably on people with Asian- or Latinx-sounding names. Two advisers (10%) noted that international students sometimes removed “Asian” languages (they did not specify exactly which) or Spanish from their résumé because they were concerned that an employer would not think they could speak English (personal communication, January 2014; February 2014). Their statements parallel one hirer's (4%) observation that names are affiliated with questions about language: “I've seen people with Asian names get discriminated against when you haven't even had a chance to

assess their language skills” (personal communication, July 2017). The bias against Latinx- and Asian-sounding names also applied to U.S. citizens who were native English speakers. One U.S. Latina student (2%) came closer than any other participant to directly citing racism she had experienced based on physical appearance, but she intersected it with the criterion of English-speaking abilities: “...and so you’re not an educated college student competing against illegal immigrants for a food service job where it’s impressive that you speak English even though you look like you don’t” (personal communication, March 2014). Notably, by “you” in this quote, she meant herself: born and raised in the U.S., with English as her native language. Cases like this demonstrate how U.S. citizens of Latinx backgrounds are prejudged as not being able to “speak English” because of their physical appearance; other studies (King et al., 2006) and one adviser (5%) from my study (personal communication, January 2014) have observed this trend. So, although hirers reported that bilingualism was desirable, people with Asian- or Latinx-sounding names, whether international or U.S. applicants, must choose whether to include Spanish or “Asian” languages on their résumés. This choice—include multilingualism and risk discrimination, or exclude it and potentially seem less skilled—is a double bind that these applicants inequitably face.

Hirers’ discussions also revealed how U.S. applicants of color other than Spanish or “Asian” could be excluded based on language skills. For example, five hirers (21%) explained that an applicant’s use of “slang” indicated unprofessionalism. In detailing an example of what he meant, one hirer (4%) demonstrated how slang could be affiliated with Black applicants:

Well-rounded education, cultural perspective, and grammar. Well, if you think about it, if we’re hiring [position], they can’t call a [client] and be like, you know, “Heeey, you gotsa [...].” You know, I mean we need to see something that’s a little more professional. (personal communication, June 2017)

What is striking about this explanation is that the white, male hirer impersonated a Black female to illustrate what he meant by unprofessional grammar: the pitch of his voice rose, and the term “gotsa” was a substitute for the verb “have.” So, the issue is not just languages affiliated with Latinx or Asian applicants; African American Vernacular English (AAVE), too, was coded as “unprofessional” and, therefore, less hireable. Since language in this form is a cultural acquisition (see, for example, work on raciolinguistics from Alim, Rickford, & Ball, 2016; Flores & Rosa, 2015), it becomes a neo racist reason for hiring decisions that can ex-

clude U.S. Latinx, Asian, or Black applicants.

Culture

Six advisers (30%), 11 students (17%), and 14 hirers (58%) referenced a company's culture in general, which affected white applicants as well as applicants of color. But statements from four students (6%) and five hirers (21%) revealed how "culture" could become a justification for not hiring U.S. and international applicants of color. One hirer (4%) explained that an interview is when an employer can determine how "ghetto" an applicant's attitude might be, with the implication being that a more ghetto attitude is unprofessional and would not fit into her workplace (personal communication, June 2017). The term "ghetto," which she quickly asserted was itself an unprofessional term, has been affiliated with Black Americans (predominantly, although other people of color—and white people—can be affiliated with that term). Even more indirect than affiliating "ghetto" attitudes with unprofessionalism, another hirer's (4%) interview demonstrated how Muslim religion could be problematic for company work. He clarified that, while he considered religion largely not a problem in hiring situations, his company "...had someone who needed to pray several times a day. From [our job] standpoint, that's okay. But the minute he had to go offsite.... It's where their religion is going to interfere with the operation of the company" (personal communication, July 2016). Two other hirers (8%) also referred to problematic "cultural" issues that were linked to Muslim religion, including wearing hijab and washing feet. In equating the term "ghetto" with unprofessionalism and Muslim-affiliated practices as obstacles to company functions, these statements demonstrate how neo racist justifications of "culture" can exclude applicants of color without directly citing biological race.

In the case of international students, four Chinese students (6%) reported removing positions that did not fit an "employer's culture," but their explanations revealed U.S., white cultural expectations rather than just company culture. One of them (2%) removed a student leadership position (even though it was relevant to her career goals) because it was affiliated with the Chinese Communist Party (personal communication, April 2012). Another Chinese student (2%) explained that Chinese students' extracurricular activities needed to demonstrate that they could fit into an American culture:

And one point [the career counselor] mentioned is we need to show that we are connected to the American cultural—American society. As for Chinese club, we need not only to provide information about "we hold a ceremony for our festival," we need to like provide some information we

communicate with the American students (personal communication, April 2012)

In an interview with a white male hirer (4%) talking about H1B visa holders, he expressed frustration with how “culture” prevented some international applicants from being hired: “And, it’s nothing you can do, and it’s culture, you know [...] you try and help people, but, in the end [...] you do what you can, but sometimes [...] people don’t hire people for very stupid reasons” (personal communication, June 2017). In all these cases, international applicants had to prove their ability to act as U.S. insiders. As many scholars have already noted (e.g., Fries-Britt et al., 2014; Lee & Rice, 2007; Poyrazli & Lopez, 2007), this does not affect all international applicants equally. International applicants from countries associated with Latinx, Black, Asian, and Muslim applicants have to work harder to prove this insider status. Equally crucially, participants’ statements indicated that U.S. citizens with ethnic-sounding names were at risk of employers erroneously labeling them “non-U.S. citizen,” with all the hurdles that come with non-U.S. status. In my study, these justifications referenced Asian, Black, Latinx, and Muslim applicants.

Discussion: Why Discuss Overlaps in Racism?

Though it is erroneous to conflate U.S. and international applicants of color, discussing how the activity of racism excludes them has implications for being more inclusive of members from both of these groups. Advisers in my study often overlooked the neo racist exclusions that international students faced; and hirers, students, and advisers often failed to explore neo racist reasons for not hiring U.S. applicants of color. Recognizing especially the neo racist obstacles to hiring could improve programmatic resources for both international and U.S. students of color.

Programs interested in working with international students of color need to understand and design initiatives that acknowledge and confront structural racism that these students face. In my study, only four advisers (20%) discussed international students’ difficulty finding jobs; and three of those four put the onus on the international students, as this quote illustrates:

Adviser: I’ve seen a few with it—with the whole, internationality. So, the only companies that would be able to facilitate [hiring international applicants] would be the majors [large corporations].

Interviewer: Do you think that’s a major obstacle for those students?

Adviser: I think it's all about the individual. If they run into a road block, and they're just stuck there, and they don't try to find a way around it—'cause I'm sure there's ways of going around it. So, I think it depends on the individual. And it also shows that initiative to kind of make a change, or if something's wrong go about changing it. Don't just sit there and look at it kind of thing. (personal communication, January 2014)

This adviser pointed to individual traits, like "initiative," to explain what international students will need to do to be hired. This excerpt was typical of advisers' approach to international students. Another adviser (5%), for example, stated that international students should try to find a way around the issue of work status: "...a barrier is only a barrier if you perceive it to be" (personal communication, January 2014).

Statements like these put onus on the individual instead of institutionalized racism and lack of resources to deal with it; as Bonilla-Silva (2000) pointed out, neo racism includes emphasis on 1) individual merit and achievement and 2) racism masked as nationalism. By shifting responsibility, even advisers who genuinely want to help their international students of color can perpetuate racism: the restriction of access to resources based on race or ethnicity. Other studies have found a lack of career advice for international students (e.g., Balin et al., 2016; Gautam et al., 2016; Sangganjanavanich et al., 2011) and that international students' trouble with finding jobs is often framed as their own personal adjustment into U.S. culture instead of as a result of institutionalized discrimination (Lee & Rice, 2007). No advisers in my study couched discrimination against international students as racism—instead, it was framed as "culture" and "work visa status." But "culture" and "work visa status" does not apply to all international applicants equally; as studies in international student experiences have demonstrated, white-looking international students do not experience racism to the degree that Asian, Black, Indian, Latinx, and Muslim international students do (e.g., Fries-Britt et al., 2014; Lee & Rice, 2007; Poyrazli & Lopez, 2007). Persistent comments from President Trump also demonstrate how immigrants from white-dominated countries, like Norway, might have an easier time immigrating to the U.S. (Chappell, 2018; Dwyer, 2018); indeed, his campaign and executive orders have targeted people from countries that fall into U.S. racial/ethnic minority groups: e.g., Mexican, Haitian, Syrian, Libyan, Somalian, and Iranian. Reynolds and Constantine (2007) found that these additional barriers might prevent international students from making career plans. So, more open discussions of racial discrimination against international students might

help programs realize when these students need resources to combat racism, whether it takes the form of biological or cultural racism.

A similar dismissal happened in reference to U.S. students of color, but it was largely because people (students, advisers, and hirers) did not acknowledge neo racist justifications as racially driven. No students stated that race/ethnicity was a concern for them, although two of them (3%) had been discriminated against for neo racist reasons (language and culture). Three advisers (15%) discussed racial discrimination concerns, but they also explained that companies have demographically targeted recruiting events to hire more racially/ethnically diverse employees (personal communication, January 2014). Of the 24 hirers in my sample, only two (8%) explored neo racism, explaining that companies need to change their recruiting practices and definition of “company culture” and “personality” in order to hire more racially/ethnically diverse employees (personal communication, June 2016; August 2016). No hirers made statements about biological race as a reason for not hiring an applicant; in fact, nine hirers (38%) asserted that they desired more racially/ethnically diverse employees. In three (12.5%) of those instances, though, hirers stated that they desired more diverse workforces while also, in other parts of their interviews, using neo racist justifications for hiring decisions. Some readers might assert that these hirers were lying about wanting to hire more diverse applicants, and that may be accurate. A more interesting possibility, though, is that hirers who genuinely want diversity are habitually using neo racist hiring criteria, resulting in hiring practices that violate their own reported desire to have a more racially/ethnically diverse workforce.

A full discussion of specific strategies that programs can use to support international and U.S. students of color would be too much for this article, but it is worth mentioning that action needs to happen at all levels of programming. At the curricular level, the job-hunting assignment should include a section on discrimination to open discussion to students who have concerns about it. In addition to discussing discrimination in class, I have a worksheet where students can voice their concerns outside of class. As coordinator for my program, I often advise our students during the job search process; part of this advising process is engaging discrimination concerns and finding campus resources to help students who face barriers to being hired. At the 2020 Council for Programs in Technical and Scientific Communication (CPTSC) conference, several ideas for helping international students arose during the mentoring session for international students of color in technical communication. During audience discussion, Dr. Jason

Tham suggested that master's programs include clearer language about the international admissions process; collaborate with local centers for international students; and provide direct lines of communication with current international students, student organizations, and faculty to discuss the application process (October 1, 2020). Finally, programs should remember that we are also hirers. In a recent article, Josephine Walwema and Felicita Carmichael (2020) pointed out that academic job ads do not always align with U.S. labor and immigration laws, so programs also need to be cognizant of these issues at the level of our own hiring.

Exploring the mechanisms by which racism impacts U.S. and international applicants of color reveals how U.S. applicants of color are obliquely labeled "outsiders" because of their race or ethnicity. The adviser's recommendation that people with "very strong ethnic names" should include "U.S. citizen" on their résumé, especially, signals how U.S. racial/ethnic minorities are not considered U.S. citizens. In being labeled U.S. outsiders, U.S. applicants of color need to expend energy to prove 1) their right to work in the U.S., 2) their ability to speak "proper English," and 3) their ability to fit into U.S. culture. It is effort that applicants with white-sounding names, jobs, and extracurricular indicators do not have to expend.

Conclusion

As I return to the question of whether TPC should build space to talk about overlaps in racism's impact on U.S. students of color and international students of color, I am mindful about why that is a dangerous dialogue. Scholars have noted that TPC has made more strides into international research and enrollments than we have with U.S. race and ethnicity (Thrush, 1997; Savage & Mattson, 2011). Racism and U.S. race and ethnicity need more explicit representation in our scholarship and research (Jones et al., 2016; Savage & Matveeva, 2011). In addition, conflating international and U.S. racial/ethnic minorities can further exacerbate the *wrong and harmful* idea that U.S. people of color are not from the U.S.—that they are the same or have the same experiences as international people. We cannot substitute people from either of these groups for the other; indeed, intersectionality theory (Hill Collins & Bilge, 2016) and numerous studies have demonstrated that within-group differences mean we cannot substitute one racial/ethnic group for another when trying to understand the experiences of people in them. So, I do not recommend that we talk about people as interchangeable, nor that we dilute progress into explicitly pursuing growth in U.S. racial/ethnic diversity in TPC scholars, practitioners, research participants, enrollments, and programmatic initiatives.

But focusing on the mechanisms of racism is a different approach. The question I posed at the beginning of this article is based on my data, and it opens two genuine sub-questions:

- Should we do this? Based on my data, I think there are benefits to discussing how the activity of racism works to oppress people of color from disparate groups. But I could be wrong, as it might be too dangerous to wallow in this nuance while our field's efforts for U.S. racial/ethnic diversity are still finding their definitions and goals (as Jones et al., 2016, pointed out in their discussion of the term "diversity").
- Where can we build space? Even if these conversations are beneficial, they would need to be located in spaces that do not undercut growth of racial/ethnic diversity in TPC. For example, programmatic recruiting initiatives probably need identity markers to define "diversity" as U.S. race/ethnicity so that administrators do not try to misuse that metric. So, a nuanced conversation about racism instead of identity markers might be better limited to scholarly conversations in journals or conferences.

Some scholars might also add "what's the best way to study it" to this list. However, TPC scholarship on racism has shown that multiple theories work well as methodological guides and interpretive lenses for this work: whiteness theory (Johnson et al., 2008), critical race theory (Haas, 2012), intersectionality (Hill Collins & Bilge, 2016), and decolonialism (Agboka, 2014) are just a few examples (and are not mutually exclusive). I used neo racism in this article because my method was not designed to answer intersectional questions, and my data traced closely with neo racism's concepts.

Opening these conversations might help us understand how seemingly innocuous criteria (like language and culture) can make people complicit—consciously or not—with racist hiring practices. For example, instead of confronting institutionalized racism that can oppress international applicants of color, advisers placed responsibility for finding jobs on international students' initiative—assertions echoed in the ATTW listserv debate that I referenced at the beginning of this article. Hirers did not acknowledge the racial underpinnings of some of their hiring criteria, even though those criteria meant that U.S. applicants of color had to expend extra effort to prove their ability to 1) work in the U.S., 2) speak "professional English," and 3) fit into "the culture" (U.S., white, middle-class). Based on my interview data, neither hirers nor advisers would want to perpetuate racial inequality. However, a reflexive look at assertions about U.S. laws, language, and culture

reveals how neo racist justifications work to oppress U.S. and international students of color without responsible parties acknowledging their own complicity. Opening genuine dialogues could help make our classrooms, programs, and institutions more supportive for both U.S. and international students of color.

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Appendix A: Hirers’ Demographics, Industries, and Regions

Metric	Participant answers (24 total participants)
Ages	29 – 77 years old Mean = 41, Median = 38 Unreported: 3
Highest Level of Education Achieved	PhD: 1 (4%) Masters: 12 (50%) Bachelors: 10 (42%) Unreported: 1 (4%)
Race/Ethnicity	white/Caucasian: 24 (100%)
Gender	Female: 13 (54%) Male: 11 (46%)
Sexuality	Heterosexual: 21 (87.5%) Homosexual: 3 (12.5%)
Citizenship	U.S. Citizen: 24 (100%)
Industries Represented	Advertising/Marketing: 6 (25%)

	<p>Engineering: 4 (17%)</p> <p>Food Service: 2 (8%)</p> <p>Higher Education: 2 (8%)</p> <p>Instructional Design: 1 (4%)</p> <p>Interior Design: 1 (4%)</p> <p>Medical: 2 (8%)</p> <p>Staffing/Recruitment: 3 (12.5%)</p> <p>Technical Writing: 2 (8%)</p> <p>Theatre: 1 (4%)</p>
<p>Regions Represented*</p> <p>*Notes:</p> <p>1. U.S. regions are defined according to the U.S. Census Map</p> <p>2. Participants who hired in multiple regions or internationally are counted first in their workplace location, then national and international</p>	<p>Midwest: 7 (29%)</p> <p>Northeast: 2 (8%)</p> <p>South: 6 (25%)</p> <p>West: 9 (38%)</p> <p>National (more than one region): 10 (42%)</p> <p>International: 1 (4%)</p>

Author Information

Chalice Randazzo is an Assistant Professor and Program Coordinator of the Professional Writing and Writing Studies programs at Eastern Michigan University. Her research attempts to reflexively question assumptions embedded in technical and professional communication genres in order to generate critical and practical actions.

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Technical and Sequential: Teaching Comics Production in the Technical Communication Classroom

Robert Watkins

Idaho State University

Abstract. This research project is an empirical classroom study that teaches comics production as a form of visual rhetoric. This essay is an abbreviated version of my dissertation (available at: <https://search.proquest.com/docview/1627787066?pq-origsite=gscholar>). I carried out this study in four technical communication courses taught at Iowa State University from 2012–2013. The study consisted of two sections: reading and production. The reading section had students read ten comics ranging from fiction to instructional and descriptive comics. The production section had students adapt a script based on previous instructional and/or descriptive writings that they then designed into a comic strip. The students were given a questionnaire approved by the IRB featuring ten open-ended questions that asked what affordances they gained or lost from studying and producing comics in technical communication in order to see what visual literacy skills they acquired. The findings suggest that production of comics effectively teaches juxtaposition, core writing skills, and envisaging in a casual and intuitive fashion that may be unique to the medium.

Keywords: comics, document design, envisaging, software exploration, visual literacy

With the demand for data visualization and technical visuals perpetually growing,¹ creating effective visuals in professional communication has become a need more than a luxury. However, when students are asked to use images they often turn to uninspired image searches or clichéd clipart without any original design or thought; in other words, they often do not engage in actual image production. This problem not only rests on the students, but also on instructors who do not require original graphics production. Referencing this problem, Diana George (2002/2014) laments, “Only rarely [do instructors] address students as producers as well as consumers or critics of the visual” (767). Teaching comics production in the professional writing classroom teaches these skills in a relatively simple fashion. Comics production encourages students to engage in original designs by having students design a document that combines words and visuals. Students have to design their own visuals to represent original information and correlate it with alphanumeric text, all while engaging in a remediation process.

For programs that only offer one or two technical writing classes to students, such as Idaho State University, curriculum design choices are vital because each pedagogical choice might be the only exposure a student receives. Classes and curriculum become crowded and often tradition conquers innovation. However, to not explore new pedagogical choices could stagnate the field and disservice students. Teaching comics production in technical communication only adds an additional week or two to a regular schedule. Additionally, based on feedback from multiple classroom studies I performed, it seems that teaching comics production aids students in acquiring visual literacy skills in a simple and unique way. This paper will cover visual literacy definitions and visual rhetoric pedagogy. Then it will outline the study I conducted before looking at student responses. Last, it will analyze student results and offer conclusions.

Literature Review

The literature review looks briefly at how visual literacy functions by focusing on the three major concepts that informed this study: visual literacy definitions, visual literacy in comics studies,² and pedagogy of visual rhetoric.

1 See Sencha’s 2017 report “Trends in Web Technologies” for example.

2 Comics studies is a very robust area of study that spans multiple disciplines. It covers many topics and has multiple approaches. The section covered here is brief and primarily looks at comics studies related to visual literacy and technical communication. Scott McCloud is currently (Fall 2018) writing a comic book about visual literacy that will likely change the way the topic is discussed.

Visual Literacy Across Disciplines

Visual literacy spans more than just visual rhetoric and professional communication scholarship. Throughout this study I will use the broad term *visual literacy*, which means different things in different disciplines. Sandra E. Moriarty (2002) defined visual literacy as “a multi-disciplinary, multi-dimensional effort” with a range of scholars coming from “mass communication, film and cinema studies, education, art, anthropology, psychology, philosophy, linguistics, semiotics, and architecture and archaeology among other fields” (p. 309). Moriarty conceded that this leads to an enriched mixture of scholarship and vision as well as confusion due to a lack of cross-disciplinary, common theory (p. 309). The lack of common theory and unified definitions resembles Jo Allen’s (1990) early concerns that defining technical writing would result in definitions that were either too broad to be useful or so specific that they would balkanize alliances.

In this study, the use of the term visual literacy is in line with Moriarty, in that it is used as an umbrella term for teaching visual thinking, visual learning, and visual rhetoric. While visual literacy is a common term, Anne Frances Wysocki and Johndan Johnson-Eilola (2011/1999) argued that the term *literacy* itself means the “process of situating and resituating representations in social spaces” (p. 736), and that it carries with it a colonial baggage that users of the term might not be aware of. They argued that using the term literacy unfairly “upgrades its prefix” without acknowledging the problematic history of the violence linked to the European tradition of reading and the inherent assumption that if one doesn’t possess visual literacy skills “it is therefore their own fault if they are not successful” (729). The authors offer multiple alternatives to literacy; the problem, however, is that none of the solutions are easily understood by outside audiences. While I respect the argument and agree that the term “visual literacy” is problematic, the widely understood nature of the term in academic, and public, circles gives the term an edge and I chose to use it throughout this study.

Comics and Visual Literacy

Using comics to promote visual literacy has been partially pursued by other theorists and helps scaffold my research. Rocco Versaci (2008) argued that comics “more so than any other visual medium” helps instructors teach students to comprehend visuals’ meaning-making and encourages engagement—all at the reader’s own pace (p. 96). This is the crux of why comics can work to teach visual literacy in my discussion as well: it helps students read. However, Versaci did not go past emphasizing reading comics into how comics production skills could further students’ ability to engage in multiple mediums. Diana George

(2002) covered the benefits of teaching visual production but did not directly reference comics. She looked forward to “a new configuration of verbal/visual relationships, one that does allow for more than image analysis, image-as-prompt, or image as dumbed-down language” (p. 785). Andrew Bouelle (2015) argued that graphic narrative production has a place in the composition classroom if viewed as multimodal text production. Aaron Kashtan (2015) encouraged teachers to experiment in allowing students to produce comics as essays that resemble specific comics genres (p. 114).

A bridge between comics production theory and technical communication could be found in Waka Fukuoka, Yukiko Kojima, and Jan. H. Spyridakis (2004). They discussed the implications of user expectation with illustrations in technical manuals—specifically cartoon images. After creating cartoon imagery to accompany textual explanations, they asked users what they thought about cartoons in professional documents. They found that 52 percent of their American audience did not mind cartoons in instructions, 34 percent liked cartoons in instructions, and only 14 percent disliked cartoons in instructions (p. 471). While the study used limited data (13 American and 16 Japanese students), it suggested that over 80% of users either prefer or do not mind cartoons in instructional materials. Additionally, they found that their users preferred instructions with illustrations next to the step (p. 469). Since comics naturally combine illustrations and text in each panel and—according to this study—American users do not tend to mind cartoon imagery, it could be argued that comics-based instructions could create effective instructional materials. Combine this with Elizabeth Daley’s claim (as cited in Yancey, 2004), who argued that the future mark of an educated student will be their ability to combine words and pictures (p. 801), and teaching comics production in technical communication becomes plausible.

Visual Rhetoric

I chose to use visual rhetoric as a lens to inform teaching comics production. Other theories could have served this function,³ but visual rhetoric offered a useful framework and vocabulary for both me and my students. Visual rhetoric covers a broad range of concepts and ideas. Three of the most pertinent for comics production pedagogy include gestalt psychology as evaluation criteria, demystifying design, and using technology as a tool instead of as the focus.

Stephen A. Bernhardt helped initiate the visual rhetoric movement

3 See *Class, Open Your Comics* (2015), the *Digital Humanities Quarterly* special issue *Comics and the Digital Humanities* (2015), and *Composition Studies* special issue on comics, multimodality, and composition (2015) for aid.

in professional communication in the 1980s with his article “Seeing the Text.” More recently, Bernhardt (2013) argued for practical methods, such as arming students with writing, design, and technical skills for their futures (p. 310). Like other scholars, Bernhardt (2004/1986) worried that evaluating students’ visual design is not as intuitive to instructors as evaluating their writing (p. 103). Bernhardt realizes that there are obstacles for teaching visual rhetoric but suggests these can be overcome by basing visual evaluation in gestalt principles.

Gestalt psychology as a tool for evaluation has been explored by multiple scholars as far back as Ben F. Barton and Marthalee Barton in the early 1980s (Moore and Fritz, 1993, p. 389). Gestalt design can be described as the whole of a document is greater than the sum of its parts. Its main groupings are “good form, closure, separation, alignment, proximity, repetition, contrast, and equilibrium” (Northcut, 2013, p. 190). Other scholars echo this; for example, one of Eva R. Brumberger’s (2013) five principles of teaching professional communication is recognizing gestalt-based design principles (pp. 99–100). Kathryn M. Northcut (2013) did a survey on what elements instructors use to teach visual rhetoric and found that most evaluative criteria stem from gestalt principles—regardless of whether the instructor knew the criteria’s gestalt origin (p. 190). Elements from my student responses affirmed this notion that gestalt may have affected them even though we did not discuss it in class. These scholars argue that to teach a more quantifiable version of visual rhetoric, the criteria should be based partly on gestalt principles.

Some scholarship addresses the worry that design overwhelms students. Brumberger (2007) sought to “demystify . . . design and visual thinking” (p. 383) by “making the familiar strange” (p. 383). She suggested this can be done by observing normal things in new and challenging ways (p. 384).⁴ Essentially, demystifying the production process means familiarizing students with the process so that it is no longer foreign.

Many instructors claim they have no authority to teach visuals. Northcut, alongside Brumberger (2010), sympathized with this concern because most writing instructors were not trained as artists (p. 459). To overcome this, they suggested that instructors and students be versed in “interpretive and productive competency”, meaning they must first incorporate skills for evaluating and analyzing images and then produce those images (p. 460). Northcut and Brumberger argued that instructors need to focus on catering to the intended audience and

4 “Making the familiar strange” was a major part of my study that I based in progymnasmata and critical pedagogy.

purpose while not getting distracted by the technology (p. 460). Focusing on the mode can help instructors overcome their lack of authority. This low-tech approach is supported by Charles Kostelnick (2013) who wrote, “if technology is only a tool, a means to an end, instructors need to be wary about letting it sabotage student learning by truncating the invention process and curbing the student’s inclination to think creatively and flexibly about design solutions” (p. 266). Bernhardt (2013) suggested using technology as a means to facilitate broader rhetorical discussions as well (p. 308), and Brumberger (2007) recommended emulating the studio atmosphere of architecture classrooms where technology is used secondarily and discouraged in early stages (390). Designing comics can fully incorporate or bypass technology completely depending on the available technology and the needs of the classroom. Drawing with a pencil or using Adobe software essentially teach the same visual literacy skills.⁵ These methods promote visual vocabulary and help instructors become comfortable with their capacity to critique and comprehend visuals.

Relying on visual rhetoric scholarship based in pedagogy shows that although the topic is still being healthfully debated and dissected, there are unifying trends that appear when we study the evolution of the field over time. These trends include using gestalt principles for evaluation, demystifying design by having students become familiar with design vocabulary and approaches, and incorporating technology only to aid comprehension not as the central pedagogical process. Many of these elements found purchase in my actual study, which I outline next.

Study Description and Methods

The student responses used in this study stemmed from a technical communication course outlined in the study design. The communication course followed a specific reading and production schedule. The methodology of the study followed a traditional qualitative coding structure based on student results.

Study Design

I conducted this study while working on my PhD at Iowa State University, a Carnegie-designated R1: Doctoral University, in Ames, Iowa—population around 60,000. This study was part of my dissertation and some elements have been repeated.⁶ The advanced communication courses

5 While they may teach the similar visual skills, using Adobe also teaches digital skills that analog technology doesn’t. These are affordances an instructor must consider.

6 The completed dissertation is available at: <https://search.proquest.com/docview/1627787066?pq-origsite=gscholar>

in ISUCOMM offer various courses to undergraduates in the humanities, sciences, engineering, business, and other fields. Courses range from rhetorical analysis and grant proposal writing to technical communication and science writing. The technical communication course serves the large number of engineering students on campus and offers traditional technical communication assignments (e.g., professional correspondence, technical descriptions, instructions, reports, etc.). The typical class size capped at 24 students. The total number of students in my study was 96 based from four classes with similar coursework. In my courses, the majority of students were primarily white, American men with an average of four or five women per class. A few international students also populated my courses, the majority coming from China (consisting of both male and female students). The class met twice a week, one class in a regular classroom (with smart technology available) and one in a computer lab (except during my summer course, where students met daily).

I gave students a ten-question, IRB-approved questionnaire⁷ at the end of the semester. Students responded on computers or by hand once I left the room. They signed a waiver release. I first carried out this study in fall 2012 with two sections of Technical Communication (English 314). I followed this up with a stand-alone English 314 class in spring of 2013. I did a final gathering of data from an English 314 class in the summer of 2013. The questions found in the questionnaire are available in the appendix.

Assignment Sequence

The assignment sequence relied first on reading and then production. I built on the familiar and guided students into the unfamiliar. I employed this step-by-step method in both the reading and the written assignment sequence.

Reading Assignment Sequence. I first introduced instructions to students from their traditional textbook. This step connected them to the previous instructional techniques they had been exposed to. Students began reading comics by looking at traditional cartoon strips; they read a combination of fictional online and printed comic strips (such as webcomics like *xkcd*, *Chainsawsuit*, etc.). Then they read a slightly longer, more experimental comic strip called "Some People" by Luke Pearson (2009). Next I assigned a full-length fictional graphic novel,⁸ *American Born Chinese* (2006) by Gene Luen Yang (the

7 The study and questionnaire, listed as ISU IRB #1 11-102, was ruled exempt by the Iowa State IRB on April 21, 2011.

8 The term *graphic novel* can be complicated. Scholarship on comics definitions is surprisingly robust and ambiguous. Many debates exist on what

first graphic novel nominated for a National Book Award) that covers themes of American race identity, stereotypes, identity, and culture.

At this point, the study moved from fiction to non-fiction. While a handful of students were familiar with comics at the beginning of class, the move into non-fiction was unfamiliar for almost all of them. Their first non-fiction comic was an excerpt from Scott McCloud's *Understanding Comics* (1993). The books' complex definition strategy (which has technical elements) led to philosophical questions about medium and the meaning of words. With an introduction to general non-fiction comics, the next step was to introduce instructional and descriptive comics.

Students read sections of *Howtoons: The Possibilities Are Endless* (2007) by Saul Griffith, Joost Bonson, and Nick Dragotta. While targeted at children, the story-driven instructions provide a nice primer for students to experience instructional comics. They then read two shorter comics that were primarily instructional but contained descriptive elements too. The first was "Arduino" by Jody Culkin (2011), which both instructs and describes Arduino. The comic features the author as avatar, like McCloud's work, and therefore builds on the trend of avatar-hosted non-fiction comics.⁹ The second shorter comic was "Soldering Is Easy: Here's How to Do It" by Mitch Altman, Andie Nordgren, and Jeff Keyzer (2011), which offers an avatar-free instructional manual on soldering. Hopefully, at this point students began to see that avatars are not required for comics and that the format can look like traditional instructional material.

The non-fiction instructions continued with an introduction to Will Eisner's *PS Magazine* (1951–1971),¹⁰ which offers more instructional material and provides more critical elements for them to analyze.

constitutes a comic and how the varying forms differ (comic strip, gag strip, comic vs. comics, comix, graphic novel, sequential art). None of these will be addressed in this essay. For simplicity, I refer to short-form comics as comics and long-form comics as graphic novels (regardless of their basis in fiction or non-fiction). (See Groensteen, 2008).

9 An avatar is not required to tell non-fiction, non-biographical comics but since McCloud's *Understanding Comics* (1993), this approach seems to be the standard. While Eisner predated McCloud's comics-defining tome with his own *Comics and Sequential Art* (1985), it not only does not use avatars but is not officially a comic; it is more of an illustrated book where the illustrations happen to be comics examples. I have yet to use Eisner's text in class. Many students copied McCloud's method, but used existing avatars (like photos of themselves or the university mascot).

10 Eisner and his associates' work is available online at Virginia Commonwealth University Library Digital Collections.

Eisner's work, while instructional, also features stereotypes, misogyny, and sexism. *PS Magazine* offers students the chance to view the world from different lenses while also demonstrating that a modern audience won't tolerate inappropriate content.

Then students read McCloud's Google Chrome comics instruction/description hybrid (2008), which is a combination of an instruction, user manual, and description that Google hired him to create to introduce customers to their web browser. The document mixes description and instruction in a way that tells a story but also serves as a marketing tool. Students read this to see that with the medium of comics, instructional texts can be blended with other genres to make the reading more interesting but also rhetorically problematic.

As mentioned earlier, the study was divided into two courses taught in the fall of 2012, one in spring of 2013, and one in the summer of 2014. For the latter two classes, I kept the same reading assignment sequence but added *The 9/11 Report: A Graphic Adaptation* (2006) by Sid Jacobson and Ernie Colon. The book is an official comics version of the actual *The 9/11 Commission Report* (2004), showcasing adaptation techniques and technical description to students. While McCloud's work serves as a mixture of instruction and description, Jacobson and Colon's book shows that a descriptive text can be written in comics as well. If this seems like a heavy book load, I should clarify that only some of these books were required for the students to purchase while the rest were merely sections I provided.¹¹

Written Assignment Sequence. For the first two technical communication courses I taught using this research method, students created an instructional comic. To do so, they brainstormed a topic they could write about with relative ease and authority. Then they wrote a script where they predicted the necessary steps and their accompanying visuals. Finally, they created the actual comic document based on their script. Later, I realized that a better option would be to allow them to either do instructions, a technical description, or a combination of both because many of our reading examples combined descriptions and instructions. I implemented this idea in the latter two classes.

In the middle of the reading process, students began learning how to adapt their own technical work into comics. Their first step was to write a purely alphabetic text script based on their previous instructions (we relied on examples found on the Internet). Then they began

11 This assignment sequence is provided in a visual manner in my article in *Digital Humanities Quarterly* with additional information provided on a separate study I did in the composition classroom found in the *Journal of Teaching Writing*.

sketching drafts during class and at home. Next, I introduced them to various free design software ranging from a free-month trial of InDesign, ComicLife 2¹² (creates comics pages for the user to plug in original content), Pixton (allows complex backgrounds and avatar design that user controls), and others. Then they synthesized all their learning to produce their own technical comics.

Coding Techniques

After I received all the questionnaires, I coded the students' responses based in grounded theory (see Creswell 2008; Corbin & Strauss 2007; Saldaña 2009). While multiple themes emerged that I explored in detail in my dissertation, I am focusing on a select few here—primarily those that seem to indicate comics' uniqueness in teaching comics production in technical communication as a means of visual rhetoric. To balance the concern that I am cherry-picking data to support my thesis, I have incorporated a broad range of responses (ranging from positive and negative to neutral) to support the coded themes. The main themes fall into one of two groups: Reading Themes Support Previous Research and Design Encourages Unique Themes. The latter category is further divided into Core Writing Experience, Genre Expansion, Medium Elements, and Envisaging.¹³

Coding Results Group One: Reading Themes Support Previous Research

The questionnaire probed students' reactions to reading the assigned comics. Their answers often affirmed what other reading-based comics pedagogy research suggests: it is a more digestible way to interpret the material. While this was not true for all the responses and other themes emerged, I am only covering a few (around eight responses) in this section because these responses directly spoke to the production side of comics, which ended up being my focus. What follows is a small selection of student responses on the visuals in comics before I interpret the results, put them in context, and discuss their meaning.

Student Responses

For three students, the main strength in comics was their pictures. One student wrote that they "give an easy visual" while another added, "I think it is easier to understand comics because it shows picture examples for each step." A third student referred to it being "easier to

12 As of 2018, the software is now called ComicLife 3

13 The definition of envisage as used in this study is found in the results section.

instruct with the comics, because there were already pictures to get you half way there. However, it was also difficult because the illustrations themselves can be frustrating.”

At least three students refer to comics’ ability to seemingly transcend language and genre. One student wrote, “In traditional instructions, people can know more details about the process and they can imagine the scenes by themselves. In comics, they are easier to understand, even . . . for kids who do not recognize many words.” A second student pointed out that “the comic form can be distracting” and that “for some of the comic instructions you can get lost and not follow instructions.” On the other hand, he/she wrote, “comics were often very helpful and they generally put things in an easier way to understand because it is like having someone teach it to you instead of just reading up on how to do something.” A third student wrote: “Comic instructions seem to be easier to understand, some could almost be multi-lingual.”

Comics can be engaging to the reader, which is both good and bad to at least two students. One student admitted, “Traditional instructions were in some aspects easier to follow because they follow a very plain and rigid format (i.e., numbering steps) but they can be quite boring.” To counter this, he/she wrote “comics provided a more effective way of engaging the reader and kept me reading the instructions all the way through.” A second student liked the “straightforward” nature of comics, which made “it easier to complete a task efficiently and without distraction.” She/he wrote, “comic books could also add to efficiency for some processes because of the very helpful visual aid they provided” and “comics were more ‘entertaining’ and made the process more interesting to me.” That said, the student mentioned that “since comics do add another layer of communication through the graphics, it could potentially make a process longer than it would be if the user was just reading text.”

Interpretation of Results

One common theme that came out of the reading-specific category was that students found images satisfying. Yet there are certain elements unique to comics that are particularly useful for visual literacy. For one, comics are inundated with images—not just accompanying pictures to complement word-based documents. Traditional technical documents rely primarily on words and print-based layouts, but comics allow students to be immersed in a world of pure imagery with text as a buoy. Text is still vital (especially for details, as students note), but swimming through the visuals allows students to experience them.

Multiple students commented on the technical nature of comics

with some realizing that comics could be effective tools to teach educational topics. However, others did not change their opinion toward comics and remained unconvinced of its potential. Students noted that comics transcended narration or have a “multi-lingual” capacity. While they might not be aware of this as an economic trend (see Ikea and airline emergency instructions for examples), this multi-lingual capacity can be found in popular comics too. One popular example of this could include the Korean web-comic “Bongcheon-Dong Ghost” (2011) that features a horrific hijacked scrolling technique that scares even the most hardened reader. It became a viral Internet sensation in the United States even though not a word of it was in English.

Context of Results

Many pedagogical papers promote having students read comics in the classroom to teach various concepts. This research is spread over sixty years and in multiple academic fields (Hutchinson, 1949; Duffy, 2009; Wolk, 2007; Adams, 2011; Hosler, 2010; Gerde & Foster, 2008; Yuan, 2011; etc.). Research seems to support that reading comics can garner interest in a topic and allow learners access to a more visually stimulating and potentially effective teaching strategies.

It is not that surprising that the images in comics captured students’ attention. My research seems to reaffirm what others have said concerning comics being an appealing medium for students to learn from (Dardress, 1995; Jacobs, 2013). Visual rhetoric theory explains that visuals aid reading comprehension, and participants’ responses concerning reading comics seem to reaffirm the idea that visuals aid reading (see Bernhardt, 2004/1986). Some grew an appreciation for the medium by actually creating in it, which enriched their reading.

Implications of Results

The responses in my study reaffirm many of the notions of visual-based reading claims: it seems to improve students’ understanding of topics and encourages reading. A usability study that tested both traditional instructions and comics for the same task might be a logical next step to truly observe comics’ potential as aiding reading in technical communication.

Another aspect that emerges from these themes is general open-mindedness toward new topics and mediums. While I did not explore this much in this article, having students use an unexpected medium to create genres seems to help students realize that preconceived notions are not always true. This realization could lead to students being more willing to work collaboratively in media and genres that they are unfamiliar with. It could also help them approach problem-solving

techniques by using the unfamiliar. Having students examine how media can be considered political in that some media have privilege over others could transfer to a lesson on various critical pedagogy, advocacy, and social justice in technical communication (see Walton, 2016; Freire, 1993; Lakoff, 2009). I attempted teaching these concepts in my class but did not measure the results to see if the idea transferred.

Coding Results Group Two: Design Encourages Unique Themes

The responses students gave to the design-based questions provided themes unique to my study while expanding on previously explored theories of visual literacy. To understand these themes, I look at student responses first, then I interpret the results, next I put them in context, and lastly, discuss their implications.

Student Responses

This section covers a sampling of student responses from the questionnaire. It is divided into the subsections of core writing, juxtaposition, and envisaging. Each section will define each topic before reporting students' responses.

Core Writing. Core writing refers to eliminating unnecessary prose, stripping down the message to its core, and emphasizing the theme of the message. When students responded with something that resembled these elements, I clustered them into core writing. In total, at least 16 of 96 students wrote something that fit in this cluster.

One consistent subtheme of the cluster was students learning to adjust their message into comics panels. One student wrote that the toughest part was figuring out how to "limit description or dialog bubbles into a panel of comics." Two others wrote that it was difficult to know "how much to convey in each panel" and "how many words is too much." A fourth student wrote about their surprise at how difficult it was to "contain each panel to one specific idea or topic" and "keep each panel to one specific step." A fifth student struggled adjusting to how much information fit in comics: "The surprising part to me was how much dialogue you could fit on one page or panel. I know comics are less text based than novels, but there is still lots of text that can be used in a comic."

For other students, the planning portion of remediating text-to-comics stood out. One wrote, "finding a way to . . . take a long paper and find the major points in it and then find a way to incorporate it into a comic and make it a story" was the biggest challenge. A second student mentioned the most difficult aspect was "The thought process

of what to put and what to leave out." The more graphical nature of the planning stood out to others. A third student mentioned that he/she had "to narrow my ideas down to the core message I wanted to communicate." A fourth student described something similar, "Since primary and secondary school have prepared me for essayistic writing, ensuring that details were not duplicated between the written and graphical ideas became difficult." A fifth student commented on getting the document to the right length: "I wanted to add in many more steps and explain more detail in writing, but I couldn't because then it would become too messy."

Other students wrote about the more positive nature of core writing. Speaking of comics in general, one student wrote that he/she was "able to provide the same information as the traditional texts with much less words (and more graphics)." A second student had a similar visual experience where he/she learned "the value of using visuals in space or length limited writing." More visuals lead to "Fewer words needed because of the graphics" a third student wrote. A fourth wrote, "Getting the wording right seemed simpler, since there were graphical 'stories' to aid," while a fifth student admitted, "there were actually content aspects that I felt came across easier to communicate, just because of the visual nature of the comic."

Juxtaposition. Juxtaposition refers to the process of putting unlike items next to each other to create a new meaning. The term is often used in design, and McCloud famously used the term in *Understanding Comics* to explain how comics combine pictures and words in a sequential fashion. When students wrote something that resembled the juxtaposition of different writing processes or the sequential nature of comics I grouped them into this code. At least 26 students of 96 responded in way that merited inclusion in this cluster. These student responses often referred to the artwork of comics, the writing process, combining words and images, avoiding redundancy, or the ability to do less with more.

Some responses focused on the art side of juxtaposing, whether in design or in reading. One wrote, "Descriptions are still made with pictures and text boxes" like regular instructions, indicating that juxtaposition exists in all forms of technical instruction. A second student was not sure "what to add into the comic." He/she expanded, "For example does it need more explanation to go along with the picture or more steps." A third student wrote "The difficulty of putting illustrations into the comic" was the most difficult part of the assignment. But a fourth student responded that comics allows "two avenues to reach a concept," referring to the text and graphics.

Other responses were more focused on the writing side of juxtaposing. One student declared that “Coming up with short quality sentences for each caption” was particularly difficult. Creating “efficient dialogue/use of words” was as difficult as creating images for a second. A third wrote, “Producing language that is cohesive to the action depicted in the image” was challenging.

Another concern was the proper juxtaposition balance of “Having a right combination of text and images.” A second student referred to this as “The difficulty of pairing of text and images” and a third labeled “Cohesion” as the biggest challenge. At least four responses were concerned with “combining”, “integrating”, or “matching pictures and drawings”, with the fourth student adding that “every piece of text makes very clear instructions as opposed to only pictures or all text with a single image of the final product.” Once that connection was made, the document was especially rewarding, as an eighth student wrote: “The best parts were when images were directly connected to the textual idea being developed.”

Juxtaposition can lead to repetition and other problems. One student wrote about their difficulty in “figuring out a way to make sure that the . . . graphics of the comics [were not] redundant with the text.” A second student mentioned, “Making pictures to go along with the story being told” was a challenge as well as “integrating it all together.” A third response focused on the characters: “I had a hard time drawing the characters and relating it to the words in the panels, so they would complement each other.” Going beyond words challenged a fourth student: “Making art that actually added anything to my descriptions was tricky for me.” A fifth student opined: “I learned to not say/write anything already described in an image” and expanded, “Having my images and writing complement each other was something I learned a lot about.”¹⁴

For at least six students, using images allowed them to portray more content with fewer words. One wrote, “It seemed like more was said with less words. It felt less like a wall of text.” A second added, “The text was very simplified and much easier to expand upon by using the images.” A third wrote that incorporating “images instead of explaining everything with the text” allowed a simpler process. A fourth student responded positively about trusting in images: “Letting the images speak for themselves” while “Providing more information than just words.” A fifth complimented comics by saying “Their excellent blend of visual communication and written text” was especially effective. A

14 This element of juxtaposition is expanded on in the implications section under the moniker of *the comics rule*.

six mentioned that “The pictures can tell many things” and fewer words are needed to “describe” the process.

Envisaging. Envisaging, as a cluster, is more difficult to define. I’m relying on both meanings of the word envisage, as in to contemplate a future event and to form a mental image—combined with visual planning and visual praxis. Envisage serves as a placeholder term until a better one emerges in the scholarship. When students referred to anything visual in this process that differed from juxtaposition, I clustered them under envisaging; in total around nine students of 96 contributed to this code.

A few students expressed joy in having the chance to be creative. One wrote, “It was nice being able to use some creativity in a technical communication class.” A second student commented on the creativity being manifested in visual choices, as he/she wrote “I could use more visuals to communicate my ideas.” A third student wrote that the process was “Very simple, more focused on content and less on rules (no word count, page limit, etc.).” Other students commented on enjoying the creative element as well, but the comments were often brief and buried in snippets throughout other categories.

The concept of envisaging was difficult for some because as one student wrote, “Stretching one’s mind to be graphically oriented when previously this has been unuseful [sic] in my studies” was not simple. A second student admitted “It is really hard to make comics if you aren’t a visual learner.” This idea was expressed by a third student as well: “The artistic aspect of comics are [sic] hard for me to grasp because I struggle in using visual art to communicate ideas.” Others had a more positive spin on visual learning. A fourth student explained, “When I actually sat down to make the comic the visuals came very naturally with the text; a proper mindset of communicating visually is all that is needed to do it well.” A fifth student conceded that envisaging was difficult but added “it was good to see this out of the box [sic] approach to communication.” A sixth student wrote: “I liked using the comics over traditional instructions because they were more graphic based, and I think I am a visual learner.”

Interpretation Results

Many students commented on narrowing down their writing to its central message (core writing). A pervasive idea exists among students that when writing essays excessive fluff must be used to reach word limits. Most writing instructors argue against this, but sometimes it takes outside-the-box assignments to demonstrate how to achieve economy. The students in my study grappled with common issues

such as narrowing their topic, simplifying their message, and deciding what to omit. Some issues native to comics also presented themselves, such as adjusting to panels, translating from essays to a visual format, and using gutters for instructional steps. More universal design ideas emerged too, such as the “comics rule” of writing that is invaluable for slide presentations (i.e., not duplicating the message by having complementary but different text and dialog for the pictures). Another core writing issue is the realization that graphics can do the work of words in more concisely. Most core writing elements are especially valuable in technical communication where, as Johnson-Sheehan argues, “readers are raiders of information” (2012, p. 9).

Learning how to juxtapose visuals and text became a necessity in this assignment. In my previous assignments, students did not seem to put enough effort into design. The juxtaposition of images, design, and text came second. With this assignment, students were forced to juxtapose or their assignment would not work. Students had concerns with panels and how they interacted with overall page design, document flow, and panel-to-panel transitions. Making images the appropriate size became more obvious in a panel than in a traditional page. While most document design won’t use panels, the juxtaposition work students do in comics design could transfer to general design with some instructor encouragement. Experimenting with visual design and organization is a vital element of learning software and graphic design elements. Any exercise that helps students work on flow and hierarchy is a positive aspect in technical communication and writing in general.

Students discussed how they approached transitioning in comics and offered some valuable insight. The design of panels and graphics forces students to consider transitioning with images and not just words. While many students struggle with transitioning in regular writing, they now have to learn to transition with graphics as well. But it was not necessarily a difficult thing for all students; some found that making effective transitions in comics was easier than in traditional writing. Some accredited this to the visual nature of comics, which allowed them to literally see their transitions. An instructor relating the idea of transitioning back to traditional writing can help students transfer their newfound transitioning skills. One specific difficulty students identified concerned planning and creating character expressions. Discussing how emotions might impact technical writing could be a natural consequence of this student discovery. All of these are part of the envisaging element that naturally surrounds comics and needs to be incorporated more in document design.

Context of Results

Most technical communication textbooks and many composition textbooks encourage students to simplify their message and the core writing theme seems to support that. Students showed that they were aware of this value in creating comics because the medium demands it. While the textbook we used in class (Johnson-Sheehan, 2012) touched on this message, it was not one we frequented in class, so most students that valued this did so on their own. A simple lesson of teaching students to transfer the concept from comics to other genres could build on the usefulness of the concept because some students complained that they would not use comics in their professions.

When I started this study, there were not many other similar studies to compare it to; since then more have appeared, but the amount is still small (see Comer, 2015; Jacobs, 2007; Kashtan, 2015). Some scholars have commented on using storyboarding in class, which is similar to comics design (see Roger Essley's work). Some studies exist where students were encouraged to create autobiographical comics. This is a helpful reflexive practice that probably has overlap with my current study; but it usually does not attempt to make design connections to visual literacy and technical communication. Some scholars have advocated comics production in the classroom (Morrison, Bryan, & Chilcoat, 2002), but few, if any, advocate for technical comics aside from Han Yu's *The Other Kind of Funnies* (2015), which presents a convincing case of teaching comics in the technical communication classroom that shares some arguments with my study.

Implications of Results

Many activities exist to teach students to write in the most precise fashion and get to the core of their message, and comics seems to teach this in an effective fashion. When students focused merely on the message and how to present it through words and images in a cohesive fashion, they created projects with precise wording and useful images. In a certain fashion, the script writing stage seems to reinforce Bolter and Grusin's (1999) recommendations of using remediation to teach new media concepts. The three-step process of original, script, and comic also curbed plagiarism due to the multiple steps and the unique requirements of the assignment. It was nearly impossible for students to not engage in original work, thus curbing all forms of plagiarism (including hiring online writers to do the work for them).

While it may go by different names, the concept of juxtaposing is a vital skill in technical communication. Be it web-based or print, each document must have a proper balance of words, images, and structure. Textbooks deal with this by teaching the principles of design and

focusing on writing styles. Comics forces writers to juxtapose each image, inside panels, panels within each page, and pages into cohesive documents.

Having students learn to have text and graphics complement each other instead of repeating each other transfers to document design and slide presentations. When I teach students how to design slide presentations I teach this very thing to them and label it *the comics rule*. Comics usually contain panels that juxtapose words and images but to be effective, the graphics and text must complement each other and not just caption the graphic.

Comics design in the technical communication classroom seems to enable transitions on a level that might not be present in other forms of communication. While extremely valuable for the medium of comics, this skillset applies to all forms of writing and communication, and using comics to focus on the complexity of transitions could strengthen students' capacity to perform transitional elements in page layout and design in addition to paragraphs and sentences. When students grapple with panels, graphics, words, page design, and overall design hierarchy, they are thrust into designing in a way that seems colorful and "fun" (many students remarked that the assignment was fun in some way) while teaching mandatory writing skills. This juxtaposition in design overlaps with the concept of envisioning.

My version of envisioning takes some defining. It is neither drawing nor literacy (which refers to reading). Kristin Arola expertly predicted this predicament of a lack of terminology with her editing choices in *Cross-talk in Comp Theory* (Villanueva & Arola, 2011). Wysocki and Johnson-Eilola (1999/2011) mentioned that adding literacy to another word (like visual literacy) tends to "automatically upgrade its prefix" because it is deemed "worthy" (pp 728–729). However, they argue that the term literacy brings empirical baggage and problematic notions (as I briefly touched upon in the literature review). George (2002) called visual literacy *visual communication*, which seems to reflect the trend of calling technical communication the more inclusive *communication* instead of technical writing (see *stc.org's* wiki for further details). Recognizing that communication covers more ground than writing is a good start, but using visual communication as a verb does not specify the meaning (to *communicate* means a myriad of things to a multitude of people). Yancey (2004) wrote that because new technology creates new genres of communication it has led to a crisis in defining the term writing. However, we lack a verb for composing in juxtaposed documents, which is why I'm using *envisage* because it serves as a verb and noun, even though the term currently only carries part of the full

meaning I seek.

Envisaging often rears its head when discussing visual rhetoric. How do instructors deal with the visibility, visual planning, and visual praxis of any assignment that strays from alphanumeric texts? Many instructors are just as reluctant to engage in envisaging as students are. Seeing this code appear and my subsequent personal realization that envisaging needs addressing in the classroom and in theory helped me solidify this concept. It also led me to explore some of the literature review sources I mentioned earlier as opposed to the more traditional route of having a stock concept in mind when designing the study.

Some students commented that they felt comics production was easier for visual learners. The concept of visual learners does not appear to be supported by research (for an overview, see Jarret, 2015), but because hundreds of texts cite this idea, many respondents believe in the concept of visual learners and it contributed to their sense of success in visual learning. Because of this, students who believe they are either visual or non-visual learners appear with positive and negative results. Since rhetorical analyses are common in technical communication, addressing the controversy of whether visual learners are real or not could be a valuable tool to help students understand that they all can benefit from visual learning. Analyzing students' perceptions of what creativity means would be hard to measure, but it was interesting that some students appreciated that the comics assignment allowed them to tap into their creativity.

Conclusion: Key Findings for Comics' Uniqueness

Core writing skills are taught in other assignments, but comics adds mandatory concise writing, remediation skills, and plagiarism curbing. Panels limit the amount of text and students must plan every stage to adapt their message both visually and textually, which results in mandatory concise writing. Comics adds remediation skills due to students adapting their same work in multiple stages genres and mediums (traditional text, a written script, doodles, and finished comic). Due to the rarity of technical comics available online, as well as the three-step process of comics creation, it becomes next to impossible for students to plagiarize in this assignment.

Juxtaposition skills are taught in other assignments, but comics adds some unique aspects found in forced visual hierarchy plans and the comics rule of presentations. Students engage in juxtaposing graphics on a micro (within the page) and macro (within the entire document) level. They must design graphics within one another and design them so they form a cohesive story. Not only do they design

each image, but they place them within a larger context. Additionally, they place text in these hybrids. Hierarchy must be in each panel and on each page while global hierarchy is a requirement in every stage. Comics production pedagogy teaches the comics rule of presentation, which is the concept of images and text working together to present a cohesive message and avoiding overlap. This is a universal skill that is valuable in technical documents and presentations.

Envisaging skills are somewhat taught in other assignments, but comics adds original forced graphic design, software exploration, and visual transitions. Students cannot rely on clip art or Google Images as easily as with other assignments. With comics, they must create their own graphics to fit their goals. They explore design either by hand, by collaging, or by computers. With software exploration, students can rely on software templates, but they must decide on the best way to visually incorporate their information in ways that require original composition. With visual transitions, students not only consider how graphics fit with one another but how they interact with entire documents. This requires envisaging entire documents and individuals so that their design resembles visual essay skills. Expanding this to other design elements could aid students in creating more precise slides, documents, and webpages.

While comics seem to teach visual rhetoric principles, they also offer unique aspects that make them advantageous and worth further exploration. Comics teach visual hierarchy on multiple levels that encourage an awareness of document design, graphic placement, and text and graphics hybrids. They help students become aware of tone and narration techniques in the typically authorless field of technical communication, which could strengthen their notions of tone in general. While most technical writing encourages students to get to their central message, comics encourages a remediation process that helps students arrive at their message's core. This is true of their entire document as well as each individual sentence they write, because space is valuable. Additionally, they learn core-writing skills with graphic design. Comics helps students explore envisaging by encouraging the design of both original graphics and planned-out document design. Students are less likely to rely on stock photographs and clip art when they must adapt a topic graphically by their own script. Finally, the juxtaposition skills students gain by designing comics allows them to weave graphics, text, and design together in a cohesive, effective fashion. This skill transfers to other visual communication as well.

This study is only the beginning. How students will apply this knowledge to other aspects of technical communication is yet to be

seen, and a follow-up study exploring this would be beneficial. Looking at comics in the technical classroom has potential and further applications and studies in the topic are welcome and encouraged. The advocacy and critical analysis potential of comics could be explored in a further study. While I believe that comics themselves could serve a valuable function in technical communication, in the meantime this study suggests comics teach skillsets that transfer to more traditional elements of technical communication pedagogy. The future of comics in technical communication is bright, and I am excited to see what directions it will take.

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Appendix: Survey Questions

While elements of my approach changed from one class to another, the questionnaire remained the same. It consisted of the following ten questions:

1. Have your perceptions of comics changed from the beginning of this semester to now? Why or why not?
2. In what ways have they remained the same?
3. What elements, if any, of composing in comics did you find to be the most difficult?
4. What elements, if any, were simpler than regular composition?
5. Did anything surprise you about the process? If so, what?
6. In studying comics this semester what differences did you find between our traditional instructions and the comics, such as those by Will Eisner and Scott McCloud (for example, what was easier to understand in traditional instructions and what was easier from the comic book, what was more difficult, what was different, etc.)?
7. Did anything in comics composition or reading facilitate your reading? If so what?¹⁵
8. What was the most difficult aspect of composing your own comic? Why?
9. What differences stood out to you between the composition of traditional texts and your comics?
10. Would you like to add any additional comments or questions?

The questions were prefaced with the statement: "Please answer the questions below as accurately and honestly as you can. There is no correct or incorrect answer; the goal is merely to explore your thoughts

¹⁵ This question is not well written and many respondents pointed this out. I should have requested more feedback and done better proofreading before I gave students the questions.

on the topic of educational comics." Because of these steps, the answers have remained as anonymous as the conditions of the study have permitted.

Author Information

Robert Watkins is an Assistant Professor in the Department of English and Philosophy at Idaho State University. He received his PhD in Rhetoric and Professional Communication at Iowa State University. His research interests include comics production in the classroom, visual literacy pedagogies, and comics studies.

watkrobe@isu.edu, 208-282-5612

Embracing Efficiency: Using Program Design and Assessment to Face Tough Times

Chris Eisenhart & Karen Gulbrandsen

University of Massachusetts Dartmouth

Abstract. This article demonstrates measures of program efficiency as a model for assessing a program's history with an eye toward guiding departmental and administrative conversations around program design and resource allocation. We engage field-wide conversations about sustainability, addressing the need to identify methods for defining this concept through data points other than total enrollment numbers. In addition, we extend discussions about assessment by demonstrating how to incorporate contextual models that situate programmatic goals within larger institutional interests. In what follows, we provide a heuristic that may help other programs demonstrate their own institutional context.

Keywords: administration, program design, resource allocation

Professional and technical writing programs must succeed in situ, negotiating a combination of best practices for program design and implementation with the politically do-able within local contexts, and with their administration. In an era of widespread shrinking enrollments, many programs can be compared to the historical enrollments and immediately be seen as “failing” or “falling short.” In this article, we present the findings from a quantitative analysis of enrollment data and what those results have taught us about the design of our Master of Arts in Professional Writing and Communication program (MPWC).

Over the past 10 years, the MPWC program at University of Massachusetts Dartmouth has undertaken major changes to develop a sustainable and focused program, moving from a curriculum-based

structure on wide-ranging electives to a core set of requirements limited to technical and professional writing. In addition, we have raised admission standards; revised the thesis from an academic thesis to professional portfolio; created an accelerated (4+1) MA program; and have reviewed but dismissed administrative inducements to develop a PhD and fully online programs. However, over the last 12 years, we have also seen a decrease in enrollments and an increase in pressure from our administrators to return to the days when enrollments were at their highest.

To address these challenges, we developed an assessment plan to evaluate the current situation and to guide future action. Our mixed-methods approach includes three phases:

- Phase 1: Quantitative evaluation of enrollment data
- Phase 2: Qualitative assessment of student perceptions
- Phase 3: Qualitative feedback from Advisory Board

In this article, we present our findings from Phase 1, in which we examined enrollment data to address questions about efficiency and enrollment expectations. We also describe the ways in which we are endeavoring to use historical programmatic assessment to demonstrate that a program can succeed in terms of sustainability and efficiency when considered by measures better than total enrollments alone. We hope we present both strategies for implementing efficiency and strategies for using assessment to demonstrate how enrollment data can be used in relation to other programmatic data when addressing an administration's concerns about program design and resource allocation.

Assessing Graduate Programs

Assessment is often discussed as accountability, as a validation of instructional effectiveness or the achievement of programmatic goals. At the undergraduate level, our own assessment practices have responded largely to top-down mandates to demonstrate that we are delivering programmatic outcomes, and with our general education courses, to university outcomes. As such, outcomes-based methods have worked well to account for how those learning outcomes are delivered and supported. As Kirk St.Amant and Cindy Nahrwold (2007) pointed out, the purpose of this kind of review means "identifying the organization's objectives and then determining how well the activities of that organization meet those objectives" (p. 409). In the technical and professional communication assessment literature, many have shown this kind of review in practice—for example, Danielle Nicole DeVoss and Laura Julier's (2009) professional writing reviewer's toolkit and Carol Siri Johnson and Norbert Elliot's (2010) statistical methods

for documenting outcomes; others have described how it provides a place for students and faculty to reflect on knowledge and concepts (Michael Charlton, 2012; Brett H. Say, 2015). At the undergraduate level, such outcomes-based assessment has worked well for us. Mapping our programmatic learning outcomes to the curriculum, reading student portfolios for evidence of those outcomes, and analyzing exit exams have provided a grounds for faculty to discuss individual courses as well as the curriculum as a whole; to revise programmatic objectives; to redesign courses; and to design professional development initiatives for our full- and part-time faculty.

At the graduate level, however, our assessment practices are not formalized in the same way. Although it is tempting to copy what we have done at the undergraduate level, we realized that assessment is situational and, in many ways, a response to change—in our case, the need to redefine “success” with our administration. To put it another way, the demand for growth from our administration has a context. As part of our assessment plan, we wanted to learn more about that context. In “Trajectories, Kairos, and Tulips,” Johnson (2009) identified two contextual problems that programs such as ours face: managing scarce resources and making our intellectual identities visible (p. 53–54)—the first a material problem, the second non-material. Johnson used these categories to explain why and how rhetoric, technical, professional, and science communication (RTPSC) programs are fragile.

In RTPSC, many have demonstrated the challenges related to measuring the non-material. For example, Trent Leslie and Kathryn Northcut (2013) reported on a study designed to measure their program identity within the university. In their study, they surveyed residential undergraduates to learn what they knew about the program. With their findings in mind, they raised many questions about the institution’s role in recruiting majors and developed a set of benchmarks to further assess program visibility. In “Of Horsemen and Layered Literacies,” Sally Henschel and Lisa Melonçon (2014) also addressed our intellectual identities, reviewing the scholarship on the conceptual and practical skills that academics and practitioners have identified as important. In their synthesis of the scholarship, they developed a matrix for program administrators to map their program’s curriculum in relation to those skills. Other have examined competencies in the field. For example, Barker (2012) reported on CPTSC’s outcomes survey to identify the competencies that define our programs. Nancy J. Coppola, et al. (2016) extended this work by developing an interpretive framework that draws on research and methods in technical communication to map the competencies that inform program design (p. 18) and

to develop heuristic questions for program administrators to assess the needs of different stakeholders (pg. 31–33). Studies such as these illustrate Lisa Melonçon and Joanna Schreiber's (2018) argument for field-wide reflective practice and data collection to support local arguments. As they pointed out, localized assessment practices can "form an insular and circular process that limits the programmatic perspective to within the program" (p. 24). As we develop assessment at the graduate level, we have recognized the situatedness of our program, looking to use methods that help us to locate our program in relation to our institution's values as well as to larger programmatic trends in the field.

To that end, our first concern is to understand the material problem. In this first phase of our assessment plan, we have focused on what it means to hold up enrollment numbers as a metric for programmatic success. Initially, we understood this kind of problem as a question of sustainability. In recent literature, sustainability is often used to define programmatic development. For example, in *Lean Technical Communication*, Meredith A. Johnson, W, Michele Simmons, and Patricia Sullivan (2017) situated definitions of sustainability within the idea of resilience or the rhetorical processes and actions that advance short- and long-term goals without compromising the natural environment or ignoring diversity (p. 8–9). Likewise, Melonçon and Schreiber (2018) defined sustainability as a lens or rhetorical framework for understanding short- and long-term goals across the field and within programs (p. 3). As these definitions indicate, we need larger frameworks and processes for conceptualizing our programs. However, when addressing the criteria our administrators have used to make decisions about our program's success, we wanted to define sustainability on a level that tied more directly to the data administrators use to make decisions. We needed to respond to their material concern about cost in relation to enrollments as a metric to define the program's value. In addition, without access to other decision-making criteria they may use, we find it difficult to assess our own program's sustainability. We cannot know the criteria that administrators use to determine what constitutes a sustainable program. Even if we did have access, we recognize those criteria can change from administrator to administrator and from one budget cycle to the next.

We do, however, have access to data that can support arguments related to efficiency: enrollment expectations per class, teaching load, and degree completion. Johnson, Simmons, and Sullivan (2017) named "efficiency" and "cost regulation" as two of seven tenets for sustainable programs, using these concepts to describe not only the ways

in which technical communicators add value to businesses but also the larger systems. Defined as “cost savings, economy of time, and the conservation of ecological resources” (p. 29), efficiency is closely tied to cost regulation as an argument within universities to make comparisons across departments and programs and to respond externally to uncertain economic circumstances. In their examples, they discuss cost regulation in terms of technology expenses, course projects that address economically depressed communities, and facility maintenance. We extend these definitions of efficiency and cost regulation to incorporate other institutional data to understand efficiency within a program. In doing so, we also recognize that program administrators must consider outcomes and values beyond efficiency as a material factor alone. An ethical consideration of programmatic efficiency must also consider measures of success for all of its stakeholders, including students and faculty, or risk temptations toward offering questionable recruitment practices and education experiences.

Including these kinds of measures in our assessment plan supports Teena M. Carnegie’s (2007) argument for programmatic assessment as a “layered process,” involving not only student learning outcomes but attributes that anticipate and strategically respond to external pressures (p. 447). In addition to assessing programmatic goals, Carnegie advocated that we incorporate contextual models for evaluating programs, examining the external discourse, the key terms of the rhetoric, and the ways in which the various interests and goals align (p. 450). In her analysis of the assessment issues at the federal, state, and institutional levels, many of those key terms touch upon material interests, including graduation rates, time to completion, and efficiency and effectiveness of the program (p. 456–457). Assessing these aspects in conjunction with other data points may provide lines of argument that effectively situate programmatic goals within larger institutional interests that impact how and where resources get allocated. This idea of assessment as a layered process can also be seen in Schreiber and Melonçon’s (2019) model for continuously improving a program by using multiple, data-driven methods to place common curricular practice within larger contexts as a way to address institutional needs and goals. Drawing on literature related to models for continuous improvement, they proposed a model called GRAM: Gather, Read, Analyze, Make. The work we describe in this article demonstrates the kinds of institutional data you might gather as a way to read or understand the processes and practices related to defining programmatic success.

Methods

It is the purpose of this article to demonstrate ways you can measure and present program efficiency to justify or guide program design. Briefly, the purpose of these quantitative measures and review of historical program data is to establish measures of success that start from, but extend beyond, total enrollments. Our institutional research office was able to provide us with raw data that served as our starting point. However, that office does not provide all our desired efficiency measures for graduate programs. Therefore, we had to develop those calculations, which we recreate below. All of this work derives from the following set of broadly applicable questions, designed to trace the trajectory of the program on a number of relevant criteria.

- What is the overall trajectory of the program in terms of total enrollment?
- How has the program maintained a pool of students? What are the acceptance rates for the program?
- What are the measures of student success? What are the records of degree completion for your program? What are the failure and withdrawal rates?
- How does the program enact its mission? What is the history of courses offered? What are the total number of courses? Are there tracks (by design or created de facto by courses offered)? If your program must be more efficient, what do you value most and why? What do you choose to continue and what to discontinue? What outcomes are you trying to preserve?
- How can you demonstrate efficiency over time, if we presume efficiency is an objective on the way to sustainability?

When a program has implemented changes over time, measuring efficiency over the history—before and after changes—might make a case for the program's sustainability. The real costs of our program are almost entirely instruction, so determining average enrollments per course section provides a generalizable measure of program efficiency year-by-year, allowing for apples-to-apples comparison across a long history.

In what follows, we demonstrate the application of these measures using our own program to illustrate. Answering these questions requires accessing the following data (we attained ours from our institutional research office):

- number of applications to program,
- number of applicants accepted,
- number matriculated,

- degrees awarded per year, and
- list of all courses offered by semester.

We were not able to acquire all these data sets for all of the years of the program; our reliable data in all categories begins in 1993/94. Our institutional research also was not calculating failure or withdrawal rates or efficiency rates for each year, so we needed to come up with our own formulas for answering those questions, as we discuss below.

Results

What is the overall trajectory of the program in terms of total enrollment?

In our program, the total enrollment history was the comparison against which we were measured. Our university's graduate studies office uses total enrollments in each program across all programs as a primary measure. For example, course releases and compensation are partly determined by the number of students enrolled in a graduate program. The university focus on total enrollments made sense in terms of historical priorities. The university was in a period of pursuing Carnegie status as a Doctoral Research University, which we attained in 2017. For this reason, university-wide focus on total enrollments and total students receiving graduate degrees had value as a measure. However, on a program by program basis, the rate of total enrollments alone is a limited and decontextualized measure.

Over the period for which we have reliable enrollment, admissions, and degree completion data, we see a period of highest enrollments from about 1994 to about 2005, with typical enrollments in the mid-40s but peaking in the low 50s. Since 2004, our enrollments decreased precipitously, and for the past few years the enrollment has hovered near 20. This decrease in enrollments has been the only measure of programmatic success cited in conversations with administration. What we knew, then, was that we needed to provide a better context for our enrollment numbers that reflected the changes we have made in the face of these decreased enrollments that would more accurately present the current health of our program vis-à-vis its history. What follows are ways we contextualized our enrollment history.

How has the program maintained a pool of students? What are the acceptance rates for the program?

Appendix A represents acceptance rates from 1993 to 2015. Oral history of the program recounts that internal recruitment by faculty of English majors was the primary driver for historical enrollments. How-

ever, the manner in which these students were recruited and enrolled appears to have come at a cost. While the numbers were initially very high and resulted in a decade of total enrollments that were very successful, over time they were not sustainable.

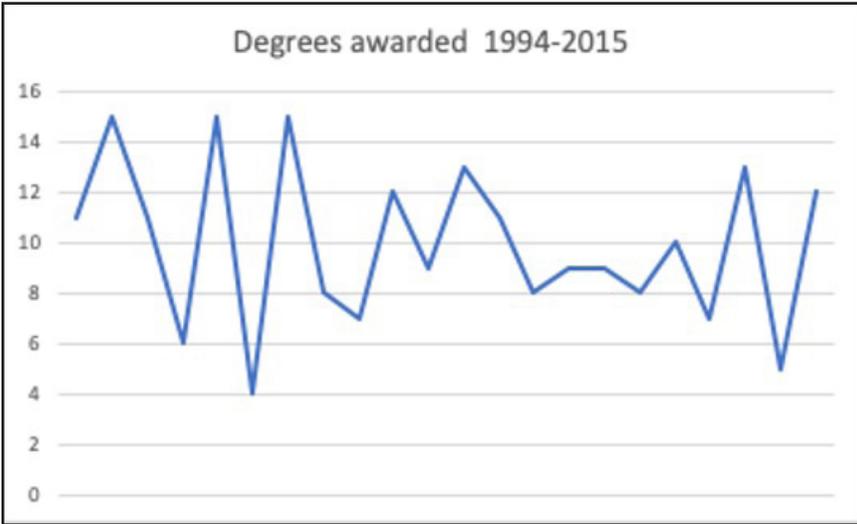
A review of admissions data showed that for 14 years from 1993–2006, fall acceptance rates only ever dipped below 90% once, and acceptance rates were 100% for eight straight years from 1997–2004. Early on, this long period of high acceptance rates led to high enrollments but ultimately had harmful results. By 2005 and 2006, we saw that our best undergraduates by and large no longer considered applying to our MA program. Based on anecdotal experience and recollections, the perception among our undergraduates seemed to have become that our own MA program was not rigorous or exclusive, and our highest-achieving undergrads often did not apply. We were also unable to publish acceptance rates as a mark of program rigor and exclusivity for external recruiting.

In the late 2000s, having diagnosed this problem, we developed a strategy to address this program without jeopardizing the program. We needed to raise the standards for admission without lowering admissions to the point of jeopardizing the program's status in the eyes of the administration. We believed that establishing higher acceptance standards would result in a stronger program, would establish for us a position where we could better recruit our own, best undergraduate students, and would help us better recruit external candidates. However, we also knew that raising acceptance standards would likely result in a dip in our already declining total enrollments in the short run.

We realized that in order to raise standards we would need to secure the backing of our Dean and Provost's offices to enact that policy in the face of threats to enrollments. We were able to use the acceptance data as a means to justify this change, and the administration agreed with our decision to raise our admissions standards. To illustrate our new standards, we do not accept applications from internal candidates with a GPA below 3.2, and our acceptance rate overall since 2006 runs about 75%, dipping in some years to below 50%. We are now, however, seeing a much greater interest in our program from our own undergraduates and from our own undergraduate faculty. While our total enrollments have not yet improved since this change, our students' ability to learn and to produce high quality work has improved.

What are the measures of student success? What are the records of degree completion for your program? What are the failure and withdrawal rates?

Table 1. Degrees awarded



A second, tangible measure of success for a program is the number of students who complete the degree offered. Our data range extended from 1994 through 2015. This 21-year range provides a useful symmetry, with a decade on each side of the programmatic redesign, including both the decline in students enrolled and the decision to raise acceptance standards. Our first surprise came in how little our degree completion numbers have declined in comparison to our total enrollments. In fact, our degree completion numbers remain largely consistent across the program’s entire history, in spite of the variation in enrollment numbers. The high total was 15 in a single year (three years, all in the first decade), the low total was 4 students in 1999. The average number of students completing degrees per year across the entire 21-year span is 10.3 and the median number was ten. In the decade in which our program has seen enrollments fall the lowest, our degree completion rate has remained relatively high, with an average of 9.2 students completing their degree each year from 2006–2015.

Table 2. Completion and Failure or Withdrawal

	Students enrolled	Degrees completed	Students F/W	F/W rate
Fall 1993–Spring 2005	227	126	77	33.90%
Fall 2005–Spring 2015	121	92	29	23.90%

This discrepancy between total enrollments and degrees completed led us to look at failure and withdrawal rates. As we guessed, the historical failure and withdrawal rates were higher than more recent rates. Taken altogether from 1993–2005, the FW rate was 34%. Since that

time, however, in the period from 2005–2015, the FW rate has lowered to 24% for the decade, with the lowest rates in the more recent years. So, although our total enrollments have fallen, our rate of students successfully completing the program has significantly improved. Obviously, this provides one measure of the program that demonstrates greater success. We suspect this change is due to a number of reasons, including but not limited to the redesigned thesis more closely aligns student preparation with the capstone experience; more restrictive acceptance guidelines yield better prepared students enrolled; lower numbers enable more focused advising and guidance; and curriculum based on a core may lead to better “cohort” effect among students in the program.

How does the program enact its mission? What is the history of courses offered? What are the total number of courses? Are there tracks (by design or created de facto by courses offered)? If your program must be more efficient, what do you value most and why? What do you choose to continue and what to discontinue? What outcomes are you trying to preserve?

It is useful to think about our graduate program history as having two periods. The program began in 1987, and once it got up to speed, maintained reasonably consistent offerings, requirements, and faculty through the mid-2000s.

During the 2005–2006 academic year, the graduate program faculty held a retreat, at which we recognized general disappointment with a number of outcomes in our program. Primary among them was a concern with the theses our MA students were completing, which followed a traditional academic thesis model (or a creative writing model) even though our students were otherwise completing little or no “academic” research and writing in the program. The retreat resulted in a redesigned thesis—a professional portfolio—and kicked off a decade of program revision, much of which was motivated by the realities of shrinking enrollment.

A review of programmatic course offerings going back to program inception in 1987 demonstrates that for about 20 years this single program effectively had three tracks: Technical Communication, Journalism and Public Relations, and Creative Writing. A distinct thread of courses in composition and pedagogy of writing served as cross-track curriculum, as students with teaching fellowships would have taken these composition and pedagogy courses while otherwise focusing in these three tracks. Core requirements for all students changed somewhat over the period but were generally limited only to a theory

course (rhetoric or communications theory) and a thesis preparation course. The thesis itself was an academic or MFA model; students would be expected to either combine secondary research with professional production or produce significant creative works (e.g., chapters of a novel).

The reasons for this inclusive program design were many and included at least the following. The graduate faculty were drawn from a wide range of sub-disciplines, and with no concrete publication requirement for tenure before 2004, the emphasis in the program was decidedly on professional/employment practices rather than research and theoretical work. A number of the faculty published in creative writing, fiction, poetry and drama, and the programmatic definition of "professional writing" always extended to include these genres and practices. Conceptualized as an extension of the undergraduate offerings, emphases in Technical Communication, Journalism/PR, and Creative Writing maximized working with existing faculty resources, and continued a line of studies for internal applicants who were the primary attendees of the graduate program.

A two-year sequence of courses for full-time students might have looked like the following lineup from 1992–1994. During this period, students chose from core courses in teaching and theory, and then had a number of options to select to their interests (see Table 3). Technical Communication options included Grant Writing, Layout and Document Design, Technical and Business Writing, and Visual Display and Desktop Publishing. Journalism and Public Relations offerings in over these two years included Science and Technical Journalism, Advanced Principles of Journalism, and Public Relations. Creative writing options included a two-semester Workshop, Writing a Series Pilot, Scriptwriting, Literary Non-fiction, and Documentary Writing.

Table 3. Courses offered from 1992–1994

Core/Teaching (all students)	Tech Comm Track	Journalism/PR Track	Creative Writing Track
Language and Its Use Teaching Technical and Professional Writing	Science and Tech Journalism	Science and Tech Journalism	Creative Writing Workshop Writing a Series Pilot
Communication Theories Thesis Research Teaching Writing Theory and Practice	Grant Writing Editing Layout and Document Design	Editing Layout and Document Design Public Relations Techniques	
Stylistics Teaching Tech and Business Writing	Law and Ethics in Prof Writing Tech and Business Writing	Advanced Principles of Journalism Law and Ethics in Prof Writing	Creative Writing Workshop II Scriptwriting
Communication Theories Thesis Research Teaching Reading & Writing	Grant Writing Visual Display Format and Desktop Publishing	Workshop in Literary Nonfiction	Workshop in Literary Nonfiction Documentary Writing

Supporting this curriculum required offering six or seven courses per semester (and sometimes as many as eight–nine), not counting independent studies, internships (for credit, which the program required) and completion of the thesis (three credits).

Our redesigned curriculum eliminated the creative writing track, limits journalism to occasional electives, and allows for two-year degree completion while offering as few as four courses per term (see Table 4). This redesign focused on a move away from genre-based courses toward developing curriculum around core sets of qualifications which a student could complete in four semesters (and optional summer course):

Table 4. Current, Two–year degree path for an MPWC student (33 credits total)

Fall 1	Spring 1	Summer	Fall 2	Spring 2
Rhetorical Theory Usability Elective	Thesis Research Stylistics Elective	Elective Internship	Web Authoring Elective	Document Design Elective Thesis Portfolio

How can you demonstrate measures of efficiency over time, if we presume efficiency is an objective on the way to sustainability?

Thinking about efficiency means thinking about cost and revenue. Our primary costs are situated in providing each class section, and our primary income comes from the number of students enrolled in our program. While costs per class vary slightly, our graduate courses are overwhelmingly taught by full-time faculty, limiting that variation significantly. Revenue per student also varies somewhat, but we can assume those student-by-student variations have remained fairly consistent over the period we have studied. In some programs, thesis and other advising might also constitute a cost; however, our MPWC faculty do not take releases or additional compensation for thesis or internship advising (primarily due to staffing limits). Because the department subsidizes degree completion by not taking release for thesis advising, that comes at no real cost to the university. Therefore, the best available, generalizable measure of efficiency for programs like ours are the number of students enrolled in the program per the number of course sections taught. This measure connects total enrollment number to actual costs of running each course section. Simply put, this means measuring total students enrolled in the program in a term divided by number of course sections offered in that term.

Our range over 30 years is from a peak efficiency of 10.6 students enrolled per course section offered to low of 3.5 students enrolled per course section offered. At 20 students enrolled for which we offer four sections per term (our current situation), we have five enrolled students in the program per course section we offer. As a reminder, the average number of students registered in each section would be much higher, but that number would double-count students, while total students in the program per section offered counts each student (and the revenue they generate) just once.

Table 5: Example efficiency ratings

Semester	Number of course sections offered	Number of students enrolled in program	Efficiency score (students in program per section offered)
S'00	9	54	6
F'07	4	25	6.25
F'94	7	50	7.1
S'10	4	28	7

The rate of students enrolled in the program per course section now allows us to compare our relative efficiency for every semester in the

program's history (see full list in Appendix C). At 20 enrolled offering four course sections, we are in the bottom quartile of efficiency in the program's history but by no means the least efficient we've been. As shown in Table 5, efficiency is not determined by total numbers enrolled alone. With the redesign of the program to four course sections per semester, we run as efficiently as we often did with many more students enrolled. At 24 enrolled, we would be in the top half of our programmatic history in terms of efficiency. At 28 enrolled, we would crack the top 10 most efficient semesters (see Appendix C). This measure becomes our primary tool for comparing our new program design to the old in terms of cost. We can demonstrate how more attainable enrollment targets compare favorably in terms of efficiency with historical numbers.

Discussion

Doing this work has helped us to develop arguments about where to set reasonable recruitment goals in relation to managing a program with limited resources. It also helps us to contextualize success, especially to administrators in light of shifting exigencies and budget constraints. To demonstrate that degree completions have remained consistent in spite of decreases in enrollments, we have also learned that raising admission standards and restricting the curriculum to a core set of courses have had a positive impact in terms of our confidence that we are recruiting students in ethical ways and offering students a coherent learning experience.

As we move forward into the second and third phases of our project, we might also collect the following to further develop a past and present picture about how our student body complete the program.

- Number of internal/external degree applicants
- Total enrollments for each class broken down by degree/non-degree students
- Semesters to completion per student
- Cost: Tuition and fees timeline; Financial package timeline

In collecting these data, we can learn more about our applicants, the interests those students have in terms of classes, and the impact of tuition and fees over time, including financial packages. In this way, efficiency as a method can be used to develop more points of comparison within and across programs, not only providing a way to understand our relatively small program in relation to larger programs within the university, but also identifying trend lines related to type of applicant, tuition costs, and financial packages—material conditions that impact

both recruiting and retaining students.

In addition, the findings presented in this article illuminate non-material factors as well. First, by placing total enrollment numbers in context, we can see the limitations of measuring a program by a single metric. In this case, total enrollments without recognizing the failure and withdrawal rates presents a problematic picture, raising ethical questions about admitting students to make enrollment targets. How do we reconcile failure and withdrawal rates against student success when enrollment numbers are primary means for measuring the status of a program? Furthermore, how do we provide pathways for successfully completing the program, and what does that mean for students? These questions speak to those places of “fragility” identified by Johnson (2009) by recognizing and placing material factors alongside non-material. In other words, doing this work has helped us to place efficiency within our own mission and administrative practices. Second, in our analysis, we found that even though we restricted our curriculum to a core set of courses, these courses provide more flexibility for positioning students within the field as a whole. In moving from a genre- to an outcomes-based curriculum, students can bring their interests (for example, in nonprofits, science, business, engineering, etc.) to the classroom. Revising the curriculum in this way also aligns with broader trends in the field to develop curriculum that recognizes the interplay between theory and practice, making sure that our learning outcomes align with best practices and research in the discipline as well as with student and industry expectations.

In many ways, efficiency as a metric for assessing a program may on the surface seem too mechanized. However, this method helps to contextualize a program in ways that both respond to the metrics often used to assess programmatic health and illustrate ethical and qualitative dimensions for defining what it means to have a successful program.

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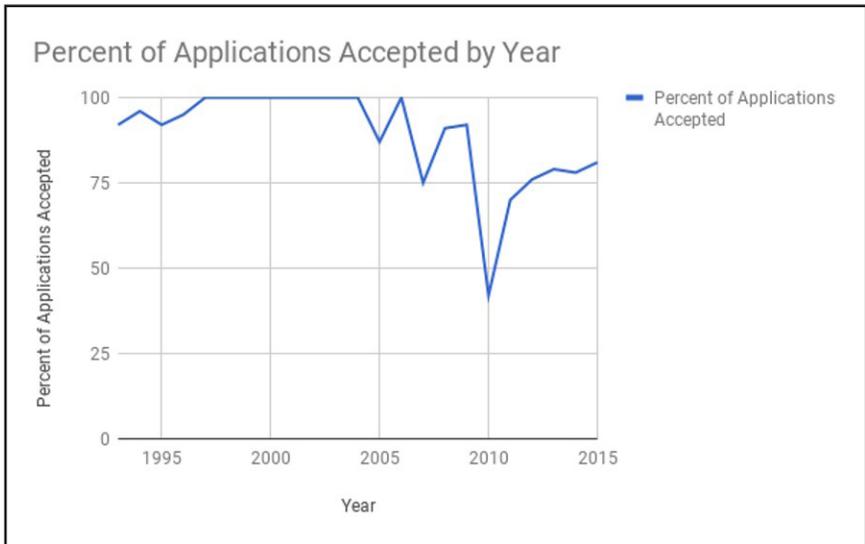
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Appendix A: Acceptance Rates



Appendix B: Course Map

Fall 87	503	600	630	640				
Spring 88	501	510	631	660				
Fall 88	503	505	601	605	621	630	665	
Spring 89	502	510	595	620	631	642	661	664
Fall 89	503	600	630	640	641	662	664	
Spring 90	505	520	601	603	645	665		
Fall 90	501	510	602	631	660	666		
Spring 91	502	503	605	621	630	642	664	
Fall 91	505	600	631	640	661	667		
Spring 92	510	610	630	645	662	664	665	
Fall 92	501	503	631	641	660	666		
Spring 93	502	510	602	621	630	642		
Fall 93	505	520	600	631	640	661	665	
Spring 94	502	510	602	630	645	662	667	
Fall 94	501	503	510	621	631	642	666	
Spring 95	502	505	605	630	640	650		
Fall 95	503	510	600	602	630	645	660	665
Spring 96	502	600	601	631	632	641	650	662
Summer 96	600							
Fall 96	501	505	510	600	605	621	630	659
Spring 97	503	600	623	631	632	640	642	665
Fall 97	502	510	601	602	630	645	657	660
Spring 98	505	600	604	631	632	641	650	676
Sum 98	600							
Fall 98	501	510	605	621	630	659	662	684
Spring 99	503	623	631	632	640	642	650	665
Sum 99	650	657						
Fall 99	505	510	601	610	630	641	645	657
Spring 00	502	602	623	631	632	643	660	661
Sum 00	657							
Fall 00	501	503	510	605	621	630	662	667
Spring 01	502	600	623	631	640	665	666	
Sum 01	675							
Fall 01	510	610	630	641	642	661	684	
Spring 02	501	503	601	631	632	660		
Fall 02	502	505	510	549	630	657	661	665
Spring 03	501	602	623	631	662			
Fall 03	503	510	549	605	630	642	665	666
Spring 04	501	549	623	631	641	657	660	
Fall 04	505	510	549	600	630	632	657	665
Spring 05	503	610	623	631	657	662		
Fall 05	510	549	602	630	640	665	666	690
Spring 06	501	631	641	642	643	662		
Sum 06	657							
Fall 06	503	510	549	600	630	645	657	665
Spring 07	610	623	631	640	657	660	662	666
Sum 07	657							
Fall 07	505	510	549	630	645	657		
Spring 08	501	503	549	602	657	659	662	
Sum 08	657							
Fall 08	501	510	549	623	630	657	660	
Spring 09	505	549	641	650	657	662		
Sum 09	657							
Fall 09	501	510	549	600	630			
Spring 10	510	549	602	621	657	662		
Sum 10	657							
Fall 10	501	549	631	642	650	657		
Spring 11	510	549	600	640	657	661		
Sum 11	602	657						
Fall 11	501	549	621	641	643	650	657	
Spring 12	510	623	650	657	662			
Sum 12	650	657						
Fall 12	501	549	602	620	621	632	642	
Spring 13	503	505	510	621	640	650	657	660
Sum 13	659							
Fall 13	501	549	600	641	659	662		
Spring 14	503	510	621	623	650	660	684	
Sum 14	657							
Fall 14	501	549	602	620	631	632	650	
Spring 15	505	510	621	631	650	657		
Sum 15	650	657						
Fall 15	501	549	620	623	631	641	657	
Spring 16	503	505	510	621	631	650	684	
Sum 16	657	684						
Fall 16	501	503	549	602	620	623	631	659

Note: Non-shaded courses are in tech comm and teaching professional writing; blue journalism/pr which continue as occasional electives; yellow creative writing which have been phased out; red is a one-credit course added for graduate teaching fellows in '14. Green courses are

the Master's of Arts in Teaching program (distinct, but delivered by English faculty)

Appendix C: Efficiency Per Semester

	Total MPW sections	Enrollments	avg. enrolled stu per class	projected efficiency at target enrollment
Spring 03	5	53	10.6	
Spring 08	3	30	10	
Spring 04	5	43	8.6	
Fall 02	6	49	8.166666667	
Fall 09	4	30	7.5	
Fall 04	6	44	7.333333333	
Spring 05	6	44	7.333333333	
Fall 99	7	51	7.285714286	
Spring 95	6	43	7.166666667	
Fall 94	7	50	7.142857143	
Spring 09	4	28	7	4 sections/28 enrolled
Spring 10	4	28	7	
Fall 87	4	27	6.75	
Spring 94	7	47	6.714285714	
Fall 90	6	39	6.5	
Fall 98	7	45	6.428571429	
Fall 91	6	38	6.333333333	
Fall 92	6	38	6.333333333	
Fall 03	8	50	6.25	
Fall 07	4	25	6.25	
Fall 01	6	37	6.166666667	
Spring 01	7	43	6.142857143	
Spring 00	9	54	6	4 sections/24 enrolled
Fall 96	8	47	5.875	
Spring 02	6	35	5.833333333	
Spring 06	6	35	5.833333333	
Spring 88	4	23	5.75	
Fall 95	8	46	5.75	
Fall 10	4	23	5.75	
Spring 98	7	40	5.714285714	
Fall 93	7	39	5.571428571	
Spring 90	6	33	5.5	
Spring 93	6	33	5.5	
Spring 96	8	43	5.375	
Fall 97	8	43	5.375	
Spring 99	8	43	5.375	
Fall 00	8	42	5.25	
Spring 12	4	21	5.25	
Fall 13	4	21	5.25	
Fall 05	6	31	5.166666667	
Spring 92	7	35	5	4 sections/20 enrolled (current efficiency)
Fall 88	7	34	4.857142857	
Spring 91	7	34	4.857142857	
Spring 11	4	19	4.75	
Fall 15	4	19	4.75	
Spring 16	4	19	4.75	
Fall 89	7	33	4.714285714	
Fall 08	5	23	4.6	
Fall 06	7	32	4.571428571	
Fall 11	5	22	4.4	
Spring 15	4	17	4.25	
Fall 12	6	25	4.166666667	
Spring 07	7	28	4	
Fall 14	5	20	4	
Spring 13	6	22	3.666666667	
Spring 14	5	18	3.6	
Spring 89	8	28	3.5	

Author Information

Christopher Eisenhart is Chair and Associate Professor of English & Communication at UMass Dartmouth. He teaches courses in rhetorical theory and professional and science communication. His studies include a focus on the intersection of style and argument, and the use of discourse analysis for rhetorical studies.

ceisenhart@umassd.edu

508-910-6468

Karen Gulbrandsen is an Associate Professor of English & Communication at UMass Dartmouth. She directs the MA in Professional Writing & Communication program and teaches classes in rhetoric and professional communication. Her research interests include the rhetoric of technology, technology transfer, and technical communication.

kgulbrandsen@umassd.edu

508-910-6932

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Building International Partnerships: Challenges, Lessons, and Best Practices in Building Accelerated BA-MS 3+2 Joint Degree Programs

Huiling Ding

North Carolina State University

Abstract. Building international partnerships is both challenging and rewarding. It enhances global visibility, diversity, and recruiting outcomes while building an alumni network around the world for graduate programs. Initiating and sustaining such efforts, however, can be intimidating, time consuming, and exhausting when its long-term benefits are difficult to predict and evaluate for those spearheading such projects. This article provides an in-depth insider view of how the Master of Science in Technical Communication program at North Carolina State University successfully built, with three leading universities in China, the first 3+2 partnerships, or Accelerated BA-MS Joint Degree Programs in the college it is located. After briefly discussing the process of building our first BA-to-MS accelerated programs, it examines numerous challenges common to international program building. To assist future endeavors, it offers suggestions about strategies to tackle these challenges and best practices in building international partnerships, particularly those related to multi-stakeholder partnership building, user needs analysis, institutional support, international communication approaches, and curriculum revision.

Keywords: global visibility, international partnerships, joint degree, program building

The global landscape of higher education has been radically changed in the last few decades because of the economic, political, and social changes taking place in an increasingly globalized society. According to the Institute of International Education (2017), 1,078,822 international students were enrolled in U.S. higher education in 2016-2017, with China and India representing about 50 percent of these students. In 2016, international students brought a revenue of \$39 billion to the U.S. economy. In contrast, 325,339 American students obtained academic credit from study-abroad programs in 2016, and 90 percent of American undergraduate students enrolled in American colleges graduated without international experience.

Internationalization of higher education has been attracting attention in the last few decades. Building international programs brings to the host countries and universities numerous benefits, including additional revenues, an international reputation, academic cooperation (Knight, 2004), knowledge transfer, increased diversity, enhanced student mobility (Heitor, 2015), student and faculty development, partnerships in research and teaching, benefits from brain gain and brain circulation (Cantwell, 2011), and strategic alliances through international institutional linkages (Starke-Meyerring, Duin, & Palvetzian, 2007). The home countries that send students to study abroad also enjoy benefits such as modernizing their universities, cultivating new talents in strategic areas, and enhancing their national competitiveness (Gornitzka, Kogan, & Amaral, 2005).

While traditional internationalization aims to facilitate knowledge exchange and to provide “an international perspective and cross-cultural skills to American students” through exchange and study-abroad programs, we now enter what Rashim Wadhwa (2016) calls the “new phase of internationalization” characterized by transnational, profit-generating higher education institutions. With the continuous decline of public funding, public [and private] universities in Europe and the U.S. have intensified their efforts to aggressively recruit in the global higher education market in hopes of benefiting from the multi-billion-dollar revenue from tuition fees and living expenses of international students (Altbach, 2002). Driven by “self-economic interest of maximizing profit and capturing student market by expanding institutional reach in other countries,” universities have been building offshore and branch campuses, overseas partnerships, collaborative degree programs, and online programs (Wadhwa, 2016).

The fields of technical communication and writing studies have been exploring various ways to internationalize their programs through institutional demands driven by increasing populations of

international students pursuing degrees on campus, on satellite campuses around the world (Martins, 2015), or through online programs (St.Amant, 2007). Technical and professional communication scholars have experimented with faculty-initiated endeavors to start international collaboration in designing assignments and courses (Maylath, Vandepitte, & Mousten, 2008; Maylath et al., 2013), in incorporating multidisciplinary team projects in globally-networked learning (Starke-Meyerring & Andrews, 2006; Starke-Meyerring & Wilson, 2008), and in building joint undergraduate programs with foreign partners (Rainey, Smith, & Barnum, 2008). However, little has been published about ways to internationalize graduate programs in technical communication through collaboration with foreign partners interested in developing strengths in technical communication. This article fills in this gap by describing my experiences and strategies working with Chinese universities to establish accelerated BA-to-MS, or 3+2 programs in technical communication before reflecting on lessons learned.

In the past three years, I spent months traveling from the U.S. to multiple cities in China (i.e., Nanjing, Hanzhou, and Chongqing) to initiate international partnerships between the MS in Technical Communication program at North Carolina State University and departments of English at three different universities in China. One of the impetuses was the fluctuating numbers of domestic and international applications in the past ten years due to the recession and our changing student population. After the recession, we have seen a dramatic decrease in company-sponsored, part-time students and a steady increase in self-sponsored, full-time students. These patterns added much uncertainty in the new era of enrollment projection and monitoring when departmental funding depends on credit hours produced by individual programs. Proactive recruiting, as a result, becomes one of the heavily emphasized, must-do things for program administrators at the university, college, and departmental levels.

This article starts with a review of literature about internationalization efforts taking place in technical communication, which focus more on collaboration among individual faculty members and classes taught by them across national boundaries than on formal programmatic collaboration. Then I describe the strategies and lessons learned in building 3+2 partnerships, or BA-to-MS accelerated programs, with our Chinese partner programs before offering suggestions to faculty members interested in similar endeavors.

Expanding Market for Technical Communication in China

With the rapid development of technical communication as a profession and a mature academic program in China, leading Chinese

universities received many requests from leading manufacturing and high-tech companies such as Alibaba and Huawei for “talents who can produce technical writing products” instead of simply translating technical documents from Chinese to English or vice versa. Most departments of English, however, have trained no such students because of the non-existence of technical communication as an academic field in China.

As a result, in the last two years, many professors teaching in the master of translation and interpretation (MTI) programs started to explore ways to incorporate technical writing components into their curriculum to prepare MTI graduates for technical communication positions. Some pursued visiting-scholar opportunities to get exposure to technical communication courses in places such as Texas Tech University, North Carolina State University, and Purdue University, while others explored international partnerships to collaboratively train their students or to provide opportunities for their students to pursue such professional tracks in North America. For instance, as one of the forerunners in technical communication education in China, Beijing University, in the Department of Digital Media and Technical Communication at the School of Software and Microelectronics, started the first technical communication master’s program in China in partnership with Netherland’s Twente University in 2016 (Gao, Yu, & de Jong, 2016). In the same year, Southeast University (China) sent eight faculty members as visiting scholars to study technical communication courses at institutions such as Texas Tech University and started building its technical communication concentration as a part of its MTI curriculum (Ding, 2018).

Identify and Work with Multiple Stakeholders to Build International Partnerships

Building international programs requires close collaboration with multiple partners from home institutions and partner institutions. The ability to identify where to start and whom to reach out to plays a critical role in such endeavors. When technical communication faculty take the initiative to build international partnerships for their programs, they may find themselves working as a grassroots champion and fighting a bottom-up battle in navigating through both institutional policies and international politics.

My journey in building international partnerships started in fall 2014, when Dr. Yan, a lead faculty in technical translation from Nanjing Normal University (NNU), called for an initial meeting with the support of the Office of International Services (OIS) to talk about possible collaboration to start a 3+2 program and develop undergraduate and

graduate courses in technical communication at NNU. After that, both the Director of Graduate Programs from English and I started to work on multi-stakeholder negotiations to get this 3+2 program approved at the state level.

Domestically, we worked with Confucius Institute (CI), multiple units of the OIS, the College, Graduate School, and programs with existing 3+2 arrangements at North Carolina State University in 2014, when the endeavor started. Internationally, we worked with various Chinese universities, English department administrators, interested faculty and students, as well as administrators at the university level, including the International Office. Once such stakeholders were identified, we called for multiple joint meetings with department and college leadership, the OIS, and the NNU lead faculty to talk through a variety of problems, i.e., funding mechanism, personnel needs, program capacity, curricula revision, paperwork and administrative support, curricula review, and reviews of the memorandum after the college and departmental approval. It is worth mentioning here that North Carolina State's OIS had helped to build numerous accelerated BS-MS programs, mostly in science, mathematics, and engineering with Chinese partners through the use of Memorandums of Understanding (MOU), but no such programs existed at the College of Humanities and Social Sciences (CHASS).

After the meeting, the OIS sent both general templates and sample MOU for existing 3+X programs to help us initiate the process. Meanwhile, stakeholders from English, including the administrators and MSTC faculty, were deliberating on costs and benefits, including curriculum revision, academic support for ESL students, internship arrangements, faculty capacity, and needs for additional funding and support, brought by this possible partnership. Based on the gist of such deliberation, in October of 2014, I developed a formal report on MSTC's response to the 3+X initiative for discussions at the department and college levels.

A Compromised MOU: Challenges Caused by Personnel Changes

Two personnel changes took place in the spring of 2015, however, after the initial interest meeting. Although the associate dean of my college emphasized her support for the partnership and expressed interest in incorporating additional programs from the college in future, she ended her term soon after the initial meeting and wanted to bring a closure to the project before her tenure ended. Meanwhile, Dr. Yan, our lead faculty in China, was promoted to the dean of his School of Foreign Languages, which slowed down the negotiation process. In June 2015, the departing associate dean suggested that the

partnership could be envisioned as an enhanced recruitment model that treats the BA and MS degrees as two separate programs with independent curricula to accelerate the approval process. Considering the time pressure for the departing dean to help wrap up the partnership, we decided to pursue the enhanced recruitment model, offering to waive recommendation letters and instead use an endorsement from the school to reduce the workload of NNU faculty. Requiring no curriculum changes, the revised memorandum was submitted to the graduate school for internal approval in late July.

Despite the reduced approval time, the compromised MOU was not effective as a recruiting tool, and we heard nothing from NNU about possible recruiting efforts afterward. The outcome was not surprising since students would have little incentive to go through full application for graduate study in a field that they hardly know anything about. Without any tuition remission or preferential consideration, students interested in postgraduate study may as well apply to any other universities inside or outside of the U.S. Our partner institutions also have no incentive to encourage their soon-to-graduate students to pursue post-graduate study in the U.S. since it is not included as a part of their internationalization metrics. My suspicion was confirmed through conversations with our Chinese partners in recruiting trips in 2016 and 2017.

Strategies to Direct Conversations Toward 3+2 Partnership

To move beyond the unsuccessful enhanced recruitment model, I used several strategies to build a relationship with NNU so as to keep the conversations going and help move the partnership forward. In what follows, I elaborate on strategies I used: working on reciprocal projects; communicating informally and regularly via mobile-based social media tools; conducting informal user-need analysis; and navigating through complicated funding mechanisms and enrollment needs. Working together, these strategies helped move the partnership forward to the next stage of site visits and face-to-face negotiations about MOU terms in China.

Strategy 1: Building relationships through reciprocal side projects. While the formal partnership building efforts ended up with a compromised recruitment model, we worked on multiple side projects with NNU through the OIS. Two professional writing instructors went to Nanjing to provide three-day teacher training workshops for 18 Chinese faculty interested in teaching technical writing in September, 2015. In mid-July of 2016, NNU sent a total of 15 students and one faculty member to North Carolina to have intensive professional writ-

ing classes. To expose students to technical communication as a field, I worked with major employers in the region to arrange site visits and organize guest lectures.

In 2016 and 2017, we sponsored two visiting scholars to sit in technical communication and academic writing classes so that upon return, they would be able to offer a range of technical writing classes. Sponsoring and working with visiting scholars from partner universities requires collaboration from various stakeholders. Some universities may have official policies barring anyone not officially registered for courses from entering the classroom, while others may have limited resources in helping with visiting scholar arrangements. Despite all these potential problems, our Chinese partners, with most of them being ambitious college administrators, often come to the U.S. hoping to build their faculty capacity to offer their technical communication courses in the future. To ensure a long, mutually beneficial partnership, those who lead the efforts in the U.S. have to work with various internal stakeholders to make sure that visiting scholars are welcome and well supported during their stay here.

To provide a productive learning experience, I checked with visiting scholars about their interest before their arrival and talked with individual instructors who taught classes of interest to the visiting scholars. Most colleagues would gladly allow these international scholars to sit in their classes and shadow their teaching with or without granting access to the course Moodle sites. With lecturing still functioning as the main means of teaching in China, visiting scholars often find the discussion-intensive, student-centered, and research-driven seminars inspiring and helpful.

Strategy 2: Maintaining personal connections using multiple communication channels. Much has been published about the importance of relationship-building (*guanxi*) and social courtesy (*li*) in conducting business with Chinese partners (Chan, Denton, & Tsang, 2003; Gabrenya & Hwang, 1996; Brunner et al., 1989). With the international market of higher education getting increasingly saturated, faculty interested in building international partners in China have to work hard to cultivate trust and strengthen personal relationships with their Chinese contact to keep the negotiations going. Fortunately, the quick development of communication technologies helps make such international endeavor easier with possible multi-channel communication. While university emails can be used for formal negotiations and exchanges of paperwork, social media platforms such as Facebook, Line, Telegram, WhatsApp, or WeChat enable more casual, mobile-phone-based personal contact. Because 3+2 partnerships often take

years of effort, having personal connections with international lead faculty can play critically important roles in building relationships and trust when negotiations slow down or when internal or external stakeholders get stuck in any part of the complicated process.

One useful function offered by WeChat is the creation of groups with no more than 500 members. It can provide a safe, small-group communication channel for all faculty and administrators involved in the negotiation process. While Chinese collaborators may not respond to group emails of inquiry when deliberations about policies or requirements are still ongoing, they are more likely to reach back when WeChat is used for minor updates or holiday greetings.

I used WeChat in relationship and community building during early contact and negotiations with NNU. Dr. Yan created a Wechat group for students and lead faculty participating in the summer program in 2016, to which I asked to be added. In addition to exchange information with summer program students and instructors, I befriended Dr. Yan, used emails for official paperwork, and resorted to Wechat for more informal exchanges about issues such as visit arrangements, quick questions about policies and paperwork, and holiday greetings. Having access to a phone-based messaging app greatly sped up the communication processes between the two of us and thus the negotiations about various types of partnerships we could explore. For the other two lead faculty from Zhejiang University and Chongqing University of Posts and Telecommunications, we use WeChat audio calls and voice mail to talk in person about issues and questions about the partnership arrangements. Doing this quickly added some nice personal touch to our collaboration and greatly facilitated the negotiation process.

Gifts also help in such international program building. Building 3+2 partnerships for lead faculty in the home institutions is often an uphill battle and a grassroots endeavor too. They have to not only negotiate with all stakeholders in their university but also actively publicize the 3+2 opportunities on campus for us. Similar to what I experienced, such intellectual, administrative, and to a less extent, emotional labor can often go without administrative or budget support at the early stage. Thus, it is important, at least for me personally, to show some unofficial acknowledgement of their efforts as the lead faculty from the host institution.

On my recruiting trips, I always bought gifts with North Carolina State University's logos, i.e., decorations, T-shirts, blankets, flash drive, football, or toys (for those with younger kids), which were always welcome by the lead faculty. These gifts remind them of the institutional

partnership we are trying to build and bring back favorite memories to those who have been to North Carolina State. While not refundable from university, such gifts function as important emotional investments which not only show the social courtesy demonstrated by the gift-givers toward the recipients but also help strengthen the business relationship in the long run (Chan, Denton, & Tsang, 2003).

Strategy 3: Evaluating user needs to overcome challenges in promoting TC and MSTC. Because of China's drive for internationalizing its higher education system, Chinese universities have been actively pursuing international collaboration in the last decade. Students from Asian and African countries have been coming to China to study Chinese language and culture, medicine, and engineering, often based on scholarships sponsored by the Ministry of Education. Meanwhile, Chinese students have access to a wide range of international partnerships with universities in Australia, Canada, Singapore, New Zealand, the United States, and other parts of Europe for purposes of language immersion, study abroad, 2+2 dual degree programs, or postgraduate study in BA/BS-MA/MS accelerated programs. In other words, the competition for international students has been growing in the global market of higher education. Host universities in North American, Europe, and Australia have resorted to creative, customized ways to attract international students. Students from home countries, in turn, can choose from a wide range of competing programs, often using reputation and costs as the primary criteria (Study abroad, 2016).

Suspecting school ranking could be an issue in school selection, I conducted some informal user needs analysis with NNU students and instructors during the summer program. My research helped me realize that Chinese students not only have little understanding of technical communication as a field but also tend to choose universities based on rankings when preparing for studying abroad. For one thing, technical communication was and still remains an emerging field in China, and very few people have heard about the field and thus know nothing about what the field is and what it has to offer. The common initial responses that NNU students had when hearing about technical communication were:

- It is difficult because I have to work with computer programming and technologies OR specialized fields related to science or engineering;
- It is a boring field in which you write manuals about machines and software;
- I have never used any software other than Microsoft Word and PowerPoint, and as a humanities student, I can never learn how

to program or to use design software.

Another challenge was the heavy reliance on national ranking when students and parents choose programs to apply for in the U.S. My experiences reveal that many English majors chose to pursue postgraduate study in fields such as education, business, or marketing because these fields are considered more practical and thus more marketable than language studies. In addition, students and parents prefer to choose universities with high national rankings due to name recognition back in China. They are often attracted to locations such as California, Boston, or New York, which boast of not only ethnically diverse communities but also of top 20–50 universities. Less attention is paid to important factors such as the reputation of target programs, tuition, costs of living, or location and job opportunities.

To cope with this challenge, I conducted informal interviews with international students in MSTC and asked them why they chose to come to North Carolina State University, often as self-funded students, when they had other competing offers. The answers pointed to several attractors: location (one of the top ten best cities for jobs, life, family, etc.), diverse populations, the abundance of job opportunities, affordable tuition and low cost of living, alumni network and word of mouth about the consistently high employment rate, and history and reputation of the program. To fully address these challenges, I produced slide decks and marketing materials both on technical communication as a discipline and on MSTC as a desirable program for postgraduate study before sharing them with the OIS office for comments and suggestions.

Strategy 4: Navigating through complex budgeting formulas and enrollment scenarios. The building of international partnerships is intricately connected with changing funding formulas, student enrollment trends, and faculty capacity. International students bring fresh perspectives, diversity, and out-of-state tuition to the traditional English department, which is often subject to diminishing majors, faculty retirement without additional hires, and the lack of marketability in the global higher education system (Flaherty, 2015). Fluctuating domestic enrollment introduces confounding variables to this seemingly straightforward calculation, which is complicated by the need to “do more with less,” to balance the budget through hiring decisions about contingent and retired faculty, and to strategically direct students to fill most classes to their full capacity (Brown, 2016; Pelleppter, 2011). Faculty interested in developing international partnerships may get exposed to this undercurrent of budgeting calculation for the first time in their career. They have to learn to navigate the complicated formulas

and options along with their upper administrators before finding a viable solution to make such partnerships desirable to both their home departments and their global partners.

I worked with my DGP to draft the 3+X memorandum and a budget request for travel funds before sharing them with the corresponding parties. The responses were slow on both sides. Our Chinese partners sent the MOU and sample curriculum to faculty and administrators at college and university levels for internal review. Meanwhile, we spent much time exploring which division, namely, the OIS, the Graduate School, or my college, would be responsible for which part of negotiating procedures and whom to go to for questions about the curriculum and budget requests. Budgeting requests were particularly challenging since funding mechanisms in the university were changing amid the implementation of the state-system funding model. It was often unclear what resources would be available to whom under what conditions.

To get funded for the recruiting trips and publicity endeavors, I worked closely with all the internal stakeholders, namely, my department and college, the graduate school, and the OIS, to apply for recruiting funds and travel funds. While the travel budget required cost-sharing from all parties, it was often done through formal budget proposals dedicated to graduate student recruiting and thus was relatively straightforward. The requests for administrative support and TA support, however, were a different story since it was not clear where such funding would come from, namely, the Provost office, the college, the graduate school, the OIS, or the department. Multi-unit collaboration cuts across borders, brings revenue in different venues, and becomes messy when budgeting decisions are made on a unit basis.

Another important area of concern was how international recruiting might create competition for existing resources. Seeing international recruiting offering a supplementary source of quality students, we assured upper administration that admission decisions will be made on a year-by-year basis to ensure the maximal use of local resources and teaching capacity. We offered to use different application deadlines for domestic and 3+2 applicants to enable the use of 3+2 partners as a safety net to keep the enrollment strong when domestic applications decrease without overstressing the program in years with strong domestic enrollment.

Meeting Decision Makers in Partner Institutions

Building international partnerships is a long, complicated, and time-consuming process. Transcontinental trips not only take weeks traveling abroad but also disrupt regular semester schedules. Meanwhile,

jet lag can last weeks before one fully recovers. Adding to the challenges are the different schedules used by international partners and American universities. For me, the long summer break provides the best time to travel, meet interested parties and administrators, provide informational sessions to prospective students, and publicize our programs to interested faculty and students. NNU, however, preferred that I arrive on campus in late September or October when students settle down in their fall semester instead of going between May and August. Top Chinese universities have overwhelming opportunities for lectures, talks, and recruiting events from universities from Europe and North America during the summer. Therefore, bringing one additional event may attract minimal attention from prospective students. Going away during the semester is not an option because of teaching obligations; therefore, I had to travel either in December immediately after the fall semester was complete or in the spring break. Working with multiple partners only worsened the situation because it may often require a prolonged trip abroad during holiday seasons.

In Fall 2016, I embarked on a weeklong trip to meet with prospective students, the International Office director, and faculty from NNU and other universities in Nanjing who were interested in developing courses and programs in technical communication. During my meeting with Mr. Wang, NNU's international office director, Mr. Wang raised a lot of pragmatic questions that focused on rankings of the university and the program, possible scholarships, and detailed costs, i.e., tuition, fees, housing, insurance, and transportation. He emphasized that a 3+2 partnership would be much more appealing with the promise to save students one year in the pursuit of their BA degree from NNU and the MSTC degree from North Carolina State University. Faculty members were also interested in exploring how the graduation requirements could be met from their side with their seniors placed on an accelerated schedule. As my visit continued, the need to build the 3+2 partnership became increasingly obvious. Upon return to the U.S., I submitted a report of my findings from the recruiting trip and re-initiated internal conversations about a 3+2 partnership with all stakeholders at North Carolina State.

Working with Internal Stakeholders: Curricula Revision

Building international programs requires engagement with and support and endorsements from numerous local partners. In my case, it required close collaboration with Director of the Global Training Initiative (GTI), Director of Global Engagement, graduate studies committee, directors of Undergraduate Programs and Graduate Programs of my college, as well as curriculum review committees at the departmental,

college, and university levels. Starting in the fall of 2016, we met with all these partners to go through possible issues and addressed their questions about our MOUs and proposed curriculum.

Even though templates of existing 3+2 partnerships gave us a good starting point, they were all in STEM-related fields and thus dealt with different student populations. It was important for us to take into consideration program-specific factors such as writing competencies, internship requirements versus credit-hour and visa restrictions, and possible impacts of fluctuation in students' academic performance on their student visa. All possible issues had to be identified, tackled, and clarified before necessary paperwork got submitted for approval to move forward with the partnership. Most of the important issues were related to admission criteria and procedures, curriculum design, and ways to deal with students not meeting minimal GPA requirements from the graduate school.

Successful Strategies

These issues that had to be resolved required careful and thoughtful consideration. The strategies used to resolve these issues are described in the following sections.

Strategy 1: Revising application procedures and admission criteria. Because 3+2 students are treated as special BA-seeking students who are expected to demonstrate their ability to succeed academically in their first GTI semester, we had to work with GTI closely to go through initial application procedures, fees and paperwork, visa application, and transitional course arrangements. It took many negotiations within the department and with the college and the graduate school before we were able to finalize the admission requirements. On one hand, both our partner schools and my home institution wanted to make the transition to graduate study for these 3+2 students as smooth as possible and to help them succeed academically during their two-year study at North Carolina State. On the other hand, review committees at all levels frowned upon admission criteria that deviated too much from those for domestic applicants and requested careful explanation about such differences, even though the OIS repeatedly called attention to precedents from existing 3+2 programs.

We eventually decided to use a two-step admission process in which these special students would first apply via the OIS to get paperwork and visas processed before their application packages (transcript, personal statement, and TOEFL score) would be forwarded to the MSTC committee for admission into the 3+2 program. At the end of their first semester at North Carolina State, they would be required

to obtain their BA degree from our Chinese partners, submit a writing sample from their coursework in the U.S., and maintain a GPA of 3.0 or above to be officially admitted into the program.

Strategy 2: Revising curriculum and degree requirements. One of the complicating factors caused by the 3+2 arrangement was the many possible ways to decide how many undergraduate and graduate credit hours should and can be transferred from North Carolina State University to meet undergraduate degree requirements of our Chinese partners and how many credit hours can be transferred from the first GTI semester to students' MSTC degree. In other words, who gets to decide how many credit hours can be double counted toward both degrees? While we quickly found out that only six graduate credit hours can be counted toward students' MS degree from their first semester, both NNU and ZJU decided to use whatever courses students take in their first GTI semester to satisfy their undergraduate degree requirement since undergraduate students in China often spend their senior year on internships while taking minimal academic courses.

To help students quickly adjust to their accelerated graduate study, we also worked on a sample two-year curriculum with carefully chosen and well justified electives at the graduate and undergraduate levels. Adjustments were made to help students with the transition to graduate study whenever possible. For instance, we usually recommend our full-time students take three courses in each of their first three semesters so that they can take two courses while working on their capstone projects in the last semester. For the 3+2 students, they can only transfer six credit hours, or two graduate courses taken in their first semester to their MS degree after being officially admitted into the program in the winter. As a result, they will have to take three courses while working on capstone projects in the final semester. Another adjustment was the timing and location of internships, a part of the MSTC degree requirements. To be eligible for off-campus Curricular Practical Training (CPT), students are required to have a minimum of one academic year in F-1 status and finish 18 credit hours in their major before they can submit the CPT application. As most students will have to return to China at the end of their first spring semester to get their diplomas and work on graduation paperwork, we recommended these students work on internships in China during that summer and then return to the U.S. to look for part-time internships in the second year if needed.

Strategy 3: Providing academically challenged students support for success. During the meetings with various internal stakehold-

ers, one question was raised about challenges posed by students who fail to meet the graduate school's requirement of maintaining a GPA of 3.0 or above before being officially admitted into MSTC at the end of their first semester. Students who fail to meet the graduate admission criteria will lose their F1 student visa and will have to return to China instead of continuing with their 3+2 study. Because we had never admitted advanced undergraduate students into the MSTC program before, it was hard to predict how much difficulty such students will experience when taking mostly graduate seminars in the last year in their undergraduate study. The 3+2 students may confront additional challenges caused by their language proficiency and their lack of experiences with intensive writing assignments and discussion-centered classes.

To make the transition to graduate school smoother for the 3+2 students, we required these students to take only two graduate classes, one undergraduate cultural class, and one writing and speaking class for international graduate students and/or teaching assistants in their first semester. Doing this maximizes the number of transferrable courses for these students while keeping their workload manageable, which in turn helps them to meet the GPA requirement for official admission into MSTC.

Another accommodation we made was to waive the GRE requirement for students who met the GPA requirement. Because students are only required to take the TOEFL exam before plunging into their first semester of intensive study at North Carolina State, they will have much less time to prepare for the GRE exam while working to keep their GPA above 3.0. While it is up to individual programs at North Carolina State to decide whether to require GRE scores in admission decisions, MSTC does require GRE scores for regularly admitted students. After consulting with existing 3+2 MOU and working with multiple review committees, we eventually persuaded the reviewers to allow us to waive the GRE requirement for the 3+2 students so as to keep them focused on their academic coursework in the first semester.

Finally, for students who may have a GPA lower than 3.0 at the end of their first semester, we worked hard to advocate for them to make sure they will not lose their F1 status because of a difficult first semester. After some painful negotiations with the college and the graduate school, we managed to add a clause to the MOU specifically for these struggling students. Through case-by-case evaluations, these special students may be eligible for provisional admission pending approval of the MSTC committee and the Graduate School. Because 3+2 partnerships require long-term commitment from both host institutions

and home institutions, we wanted to make sure that everyone worked hard to help 3+2 students succeed at North Carolina State. Such commitment from all stakeholders will be critical in building a strong reputation for our 3+2 partnerships in the home institutions.

I explained the rationale for this clause in audio calls with our Chinese partners so that they would not be caught off guard or feel offended by the possibility of provisional admission. Lead faculty did acknowledge that their best students would focus on top-ranked universities and that students interested in North Carolina State may not represent their top students. Talking about such challenges with partner programs can create local changes. One of our partners quickly acknowledged the lack of adequate training of academic writing, critical thinking, and research skills for English majors in their existing curriculum. In addition to selectively recommending top students for consideration in the 3+2 program, our lead faculty, the dean of the foreign language school, talked about the possibility of building stronger foci on writing and research skills in existing courses and offering new courses focusing on intensive writing and research methods. Considering the interest of all partner universities to eventually developing their own technical communication courses, such local changes can introduce gradual yet much needed training to help cultivate future technical communication workforce.

Moving on with MOU Approval and New Partnerships

Once we submitted our first MOU for review, it became easier to work with other institutions interested in developing technical communication programs in China. Using the existing MOU as a template, we were able to make quick local adaptations to meet the unique needs of individual institutions. The entire approval process is long and laborious, which typically takes two to three years since it requires not only approval and physical signatures at multiple levels in both institutions but also a formal SACSCOC letter from the Accreditation Liaison. The routing form for on-campus approval at North Carolina State University alone requires signatures from seventeen administrators and/or committees, including deans, provost, and chancellor as well as multiple campus-wide councils.

Concluding Remarks: Key Lessons from Our Experience

Building international programs is rewarding yet challenging and time-consuming. Bringing international students helps to increase the diversity of our student body and provides domestic students with much-needed experiences of multicultural exposure and intercultural collaboration. It also helps to enhance the visibility of other programs

affiliated with the Department of English and attract qualified students to our MA, MS, and doctoral programs. Meanwhile, these endeavors help explore new ways to generate much-needed, sustainable revenues for the department and to create new platforms of student and faculty exchange with our partner universities. Accompanying all these benefits come the problems of time commitment, international travel, workload reassessment, and diversion of time from research.

Building international partnerships takes a lot of valuable research time and sometimes the program builders get course releases to compensate for the time spent on such international work. Such compensation does not come automatically, though, and faculty members may have to tackle such work as additional service or administrative work using their own research or personal time. It may be a good idea to revisit the WPA's rules for writing program administrators and examine how the WPA Council argues for WPA work as genuine intellectual work before one puts a coherent argument about international program building as valuable intellectual work. International partnership building shares many similarities with writing program administration while adding new challenges of intercultural negotiations, relationship building with new partners, and navigation through higher education bureaucracies in multiple universities from two different countries. By keeping careful track of time and energy devoted to the long process of international meetings and negotiations, one may put an effective argument for additional administrative support or workload reassessment, which can in turn help prevent quick burnout.

It is important for the lead faculty interested in building such programs to have personal commitment, cross-cultural competencies, and a strong can-do attitude. The benefits brought by such partnerships are obvious: increased enrollment, credit hour production, and revenues for the department, the college, and the university. In addition, they also provide intra-organizational intercultural communication and diversity experiences, cultivation of long-term connections with foreign partners, opportunities for student and faculty exchange, and first-hand understanding of technical communication trends and pedagogies in other countries. By keeping in mind the larger picture, committed lead faculty can push such partnerships forward despite challenges and setbacks.

While extremely time-consuming and exhausting, building such partnerships can offer unprecedented opportunities to study international technical communication in another context by putting the lead faculty in close contact with instructors, students, and industrial practitioners of technical communication. After making the two

recruiting trips, I had the rare opportunities of talking in great depth with five university administrators and faculty interested in developing technical communication about their aspirations, needs, and frustration, which gave me first-hand insight to the development of technical communication as a discipline in China.

My 3+2 partnership endeavors provided a good opportunity to revisit predictions made by Ding (2010, 2018) and Yu (2011) about technical communication in China. My experiences show that masters programs of translation and interpretation (MTI) have become a major driving force in building technical communication programs in China, with technical translation playing a prominent role in the process (Ding & Li, 2018). With the quick development of machine translation, computer assisted translation, and artificial intelligence, the market needs for human translators have been diminishing and the employability and median incomes have been decreasing (Q. Guo, personal communication, August 30, 2016). Lead faculty in MTI programs from our partner universities work really hard to find a sustainable career track for their students. Working together, we can make such international partnerships a win-win situation for all participating stakeholders.

As I revise this article in Fall 2020, our recruiting endeavors for 3+2 programs have been stalled by the COVID-19 pandemic, the trade war between the U.S. and China, the U.S. consulate closures, and the shifting policies governing international students as well as visa and immigration in the U.S. Since 2016, the U.S. has been witnessing huge declines in international enrollment and revenue losses worth over 11 billions of dollars due to its immigration policies and anti-immigration rhetoric (Garsd, 2020; Nedlund, 2019), when countries such as Australia and Canada enjoy double-digit growth in their international student populations (Zhang & Stucka, 2020). This new development highlights the dependency of international program building on national policies and continued support for economic globalization and global talent circulation. We remain hopeful, though, about the potential offered by our 3+2 partnerships. With our three MOUs approved at the state level, we have the infrastructure and partner networks in place to quickly resume recruiting if federal policy in the near future is more welcoming to international students and other immigrant educational experiences.

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The Interdisciplinary Arc: One Program's Story

Marika Seigel & Ann Brady

Michigan Technological University

Abstract. In 2014, the Humanities Department at Michigan Technological University renamed its graduate program from Rhetoric and Technical Communication to Rhetoric, Theory, and Culture. Grounded in interviews with seven faculty members who were key stakeholders in either the original program or its revision, this article documents the vision and impetus for the creation of the original program as well as the rationale and process underlying its revision and renaming. The article concludes with a look at the results of the revision four years later as well as attempts to resolve ongoing tensions between disciplinary and interdisciplinarity.

Keywords: curriculum, development, humanities, interdisciplinary, revision

What it means to be interdisciplinary, how graduate programs can be designed to enact it, and how faculty can be encouraged to engage in it are questions that Michigan Technological University's (MTU) humanities faculty have discussed for almost thirty years. As a result of these discussions, in 1989, the department successfully proposed a PhD. program in Rhetoric and Technical Communication (RTC) that foregrounded the promise of interdisciplinary work in applied theoretical research. Faced with the university's transition from quarters to semesters in 1991, faculty renewed their discussions about interdisciplinary education and scholarship, revised the program's structure, and came to consensus on a commonly agreed upon curriculum. Twenty years later, in 2011, graduate faculty began discussions about curricular goals once

again. This most recent revision process aimed to build a program that would reflect a broader range of faculty scholarship and reinvigorate the interdisciplinary exchange that had been imagined earlier.

The following article chronicles this history. We do not intend to argue for a broad or all-encompassing definition of the term “interdisciplinary.” We focus, instead, on the story of how our particular department has grappled with multiple, often conflicting, definitions of the term and how technical communication has been a part of—and affected by—that process. To tell the story, we draw on interviews we conducted with faculty over the past five years, public records of department meetings dedicated to revising the RTC program during this time, our department’s 1989 proposal to develop a doctoral degree in rhetoric and technical communication, and outsider reviewers’ comments, which they reported after they visited the department in the spring of 2018.

Context

Infusing the department’s public discussion about what it means to be an interdisciplinary graduate program is the ongoing work that MTU faculty members have been doing since the program began. Although they represent a range of disciplinary theories and methods, faculty continue to work across those disciplines, publishing books and articles together, serving on graduate committees, giving conference papers, writing grant proposals, and designing classes. The benefits of this work are clear in that faculty are able “to pursue new intellectual questions, work in new areas of teaching and research, counterbalance the isolation of specialization, infuse innovative and active-learning pedagogies into the curriculum, develop integrative and collaborative skills in students, and respond to societal problems” (Klein, 2010, p. 2).

Questions about the nature of this work, however, and how to describe it remain the subject of faculty discussion within the department. One question is whether faculty collaborations have been multidisciplinary or interdisciplinary. Both multidisciplinary and interdisciplinary collaborations feature work across disciplines, but in multidisciplinary work collaborators stay within the confines of their own disciplinary areas. For example, in a multidisciplinary team-taught course, each contributing faculty member might individually teach a unit devoted to their own specialization. Within the multidisciplinary model, then, there is little integration of disciplinary perspectives. Even then, benefits of multidisciplinary collaboration are many. It brings colleagues from self-contained and independent disciplinary specializations into research and teaching federations. It encourages faculty to form working groups that address the problems and issues of graduate

education that they share, but from more than one perspective. It encourages faculty collaborating on research projects to borrow methodologies and skills from one another.

Alongside these multidisciplinary projects, perhaps motivated by them, is integrative, interdisciplinary work. Here, faculty conceptualize and produce knowledge outside their own specialties. They develop strategies for extracting, synthesizing, and incorporating concepts unique to their disciplines in order to combine their “existing knowledge or to help solve a problem or to raise or advance knowledge about a new issue” (Klein, 1990, p. 93). Building these alliances requires a respect for other disciplines and a commitment to engaging with them deeply enough to develop criteria for assessing their contributions.

RTC faculty have not always “met” these requirements. Their scholarly and pedagogical work, however, suggests that they are aware of the promise of constituting interdisciplinarity as “reciprocal assimilation” in which disciplines are changed through their interaction with each other (Piaget, 1972, p. 130). Bringing this promise to a fuller realization is a theme that emerges across many of the interviews we discuss in this article. Imagining disciplines as “untapped points of convergence” (Klein, 2010, p. 55) rather than distinctly different fields of specialization, in fact, appears to have been an important goal for revising the RTC program.

As RTC faculty explored ways to reach this goal, technical communication scholars had been rethinking what interdisciplinarity means to the field. More specifically, the rise of topic-based information and the decline of its counterpart, that is document-based information, as Rebekka Andersen (2009), Rachel Spilka (2009), and others argued, necessitated rethinking the structure of technical communication education and the goals of its practice. As Andersen pointed out, “Given sweeping changes in the content industry, I reemphasize[...]the pressing need for the field of TC [technical communication] to develop a framework for its work that centers on collaborating with other fields and achieving cross disciplinary goals” (2014, p. 11). Simultaneously, the explosion of masters, doctoral, and particularly graduate certificate programs in technical communication had sparked conversations in the Council for Programs in Technical and Scientific Communication (CPTSC) community that paralleled many questions discussed by Michigan Tech’s faculty during the revision process: How can programs maintain disciplinary identity in “Big Tent” graduate degrees, and how can we best balance breadth and depth (Johnson, Zemliansky, & McKee, 2014, p. 118)? What are the politics and consequences of nam-

ing (Johnson, Zemliansky, & McKee, 2014, p. 120)? How can we ensure program sustainability (Melonçon, 2012, p. 220)?

In what follows, these questions become a backdrop as we describe the story of the discussions in which they are embedded, how these discussions resulted in the RTC program and its first revision, how they are related to larger disciplinary discussions within technical communication as a field, and what directions our program is now taking four years after it was revised once again.

Methods

Faculty Interviews. To capture the most robust picture of the RTC program, from October 14 through November 21, 2013, we contacted seven members of the graduate faculty, each representing different perspectives on the program, as well as revisions to it.¹

- Dr. Victoria L. Bergvall, Associate Professor, Linguistics
- Dr. Sue Collins, Associate Professor, Communication, Culture, and Media
- Dr. Marilyn M. Cooper, Emerita Professor, Humanities
- Dr. Elizabeth A. Flynn, Emerita Professor, Reading and Composition
- Dr. Ramon A. Fonkoué, Associate Professor, French Language, Francophone, and Cultural Studies
- Dr. Robert R. Johnson, Professor, Rhetoric, Composition, and Technical Communication
- Dr. Scott Marratto, Associate Professor, Philosophy²

Victoria Bergvall, Marilyn Cooper, and Elizabeth Flynn contributed to the original 1989 proposal to develop the RTC program. With the university transitioning from quarters to semesters in 1991, Chair Robert Johnson gave the graduate committee the charge to review and revise the program's structure. As chair of that committee, Victoria Bergvall carried out Johnson's charge, facilitating discussions that resulted in a curriculum based on three required courses for PhD students and two for master's students. At the time we conducted the initial interviews, Ramon Fonkoué and Scott Marratto had served on the graduate curriculum revision committee for two years, from the beginning of the revision project. Victoria Bergvall and Sue Collins had served on the committee for one year, Bergvall as chair.

We conducted face-to-face interviews with five faculty members (Bergvall, Collins, Cooper, Fonkué, and Marratto). Two faculty mem-

1 We received IRB approval for these interviews (Project Title: 518270-1) on September 26, 2013.

2 All seven faculty members agreed to their names being used in this article.

bers (Flynn and Johnson) responded via email. Having transcribed the materials we had recorded and received, we identified key concepts and quotes, integrating them as themes into our discussion. All seven faculty members were invited to review a draft of this article with particular attention to our use of their comments. Based on their suggestions, we revised it for accuracy and completeness.

As we prepared for these interviews, we were first interested in learning about the history of the RTC program, its interdisciplinary aims, its successes and shortfalls, the reasons for revising it, the process used to do so, and the proposed program's goals. We thus asked the following questions about its history, current status, and future.

1. What initiated the creation of the original RTC program (asked of those who were part of the 1989 proposal effort)?
2. What was the vision of the original program (asked of those who were part of the 1989 proposal effort)?
3. What initiated the 1991 changes?
4. What initiated the most recent program revision?
5. What gaps did you see in the current program that initiated this revision?
6. What have been challenges in the revision process?
7. What have you learned?
8. What are the next steps?
9. What vision does the revised program suggest that is different from that of the original?

Department Records. To give us a more nuanced appreciation of the contexts in which we were conducting these interviews, we also reviewed public records of 2013 department meetings dedicated to revising the RTC program, as well as our department's 1989 proposal to develop a doctoral degree in rhetoric and technical communication.

RTC Program Director Interview. Once the program changes had been implemented, we were interested in how they might have affected departmental interdisciplinary efforts, as well as the recruitment and placement of RTC graduates. Four years after the initial changes, we conducted a follow-up interview focusing on these questions with Dr. Marratto in the last year of his three-year term as RTC program director.

External Reviewers Report. Finally, we read the report, written by Professors Nancy Langston (Michigan Technological University), Sidonie Smith (University of Michigan), and Jack Selzer (Pennsylvania State

University), after they had been invited to serve as external reviewers of the RTC graduate programs and had met with faculty, administrators, and graduate students, as well as the initial response to the report written by the Department of Humanities Chair, Ron Strickland.

History

The late 80s offered an opportune moment for the Humanities department to respond to a newly emerging emphasis on research at MTU and to propose a PhD in Rhetoric and Technical Communication. Under the leadership of Chair Art Young, the department had developed a successful master's program in RTC, as well as strong undergraduate programs in Scientific and Technical Communication, and Liberal Arts. The department was comprised of a number of disciplines: communication, composition and rhetoric, linguistics, literature, modern languages, philosophy, and technical communication. The graduate steering committee, which facilitated planning, thus focused their early discussions about the nature of the program on foregrounding and fostering interdisciplinarity. At the time the PhD was being developed, however, the department had particularly strong representations in technical communication and rhetoric and composition, a result of MTU's Writing Across the Curriculum (WAC) initiative. Collaborating with department colleagues "Toby Fulwiler, Bob Jones, Randy Freisinger, Elizabeth Flynn, and later Cindy Selfe, Dickie Selfe, Diana George, and Nancy Grimm" (Young, as cited in Li, 2008, p. 64), Young had developed an ambitious WAC program at MTU. To support this effort, which included workshops and seminars that guided faculty across departments in how to use writing in their existing courses, Young had hired 20 new faculty in composition and rhetoric and technical communication, many of whom were actively engaged in research and publishing (Flynn, 2013, interview).

Although at this point, Humanities was a multidisciplinary department, nationally recognized for its cross-disciplinary WAC program, it still had to make a persuasive case to the state of Michigan to approve a Humanities PhD at a technological institution. The title of the program was strategic (Cooper, 2013, interview; Flynn, 2013, interview). Choosing the name "Rhetoric and Technical Communication" allowed the doctoral program to build on the strengths of the already existing master's. Just as the master's had been successful "in attracting students and placing graduates...the doctoral program will attract high-quality graduate students whose research and scholarship will enhance MTU's reputation both within the state of Michigan and nationally" (Proposal to Develop, 1989, p. 8).

Combining “rhetoric” and “technical communication” in the title also signaled a relationship between theory and practice that aligned with MTU’s mission to “develop programs...that offer a balance between” the two. The proposal went on to point out that such a balance already existed in the work conducted in humanities: “Research in rhetoric and technical communication in the Department of Humanities emphasizes the application of theory to develop systems and strategies that will improve communication within our technological society” (Proposal to Develop, 1989, p. 7). As a result, the proposal suggested a new doctoral program would reinforce the successive gains that had already been made. Existing faculty would be likely to develop even more innovative and complex research projects with research-oriented graduate students. In addition, highly qualified faculty could be recruited to join the research community that already existed.

Finally, the title pointed to the overarching goal of the proposed program which was “to further research on the contexts of communication events within our complex technological society” (Proposal to Develop, 1989, p. 35). Confirming the importance of this goal and locating it in the context of a technological university, the proposal invoked the work that faculty in the department had already initiated in service to the goal and called for exchange among faculty across departments to advance it. “The interdisciplinary nature of rhetoric and technical communication also means that profitable interactions with other departments at Michigan Technological University have occurred and will occur with more frequency” (Proposal to Develop, 1989, p. 8).

In December 1988, the humanities faculty endorsed the completed “Proposal to Develop a PhD Degree in Rhetoric and Technical Communication.” And, in March 1989, the MTU Faculty Senate approved it. For the next ten years, the RTC program flourished, establishing a reputation for its “applied theoretical research on the contexts in which communications are generated and used” (Proposal to Develop, 1989, p. 10) and “providing students a rich, interdisciplinary educational experience as well as a path to an academic career in emerging fields” (Flynn, 2013, interview).

In 1999, however, MTU transitioned from quarters to semesters, necessitating “about a one-third reduction in course titles” (Johnson, 2013, interview) and thus a reconsideration of the courses themselves. As the graduate director and the graduate steering committee prepared recommendations for redesigned courses, several troubling issues about the program emerged. Faculty often referred to the program as a smorgasbord, which students sampled randomly (Johnson, 2013, interview); students graduated with an RTC degree without

taking classes in rhetoric or technical communication ; and students themselves worried that they were not prepared for the job market (Bergvall, 2013, interview). Concerned that the program was not serving the students as well as it might, Chair Robert R. Johnson charged the graduate steering committee with a review of benchmark and competing PhD programs. Their findings—that many such programs required a suite of introductory courses—contrasted sharply with the RTC program, which had no defined core.

Remarking now on these findings, Johnson recalls that this was “an omission that we felt necessitated some changes in program structure” (2013, interview). A number of factors were considered as changes were devised, among them the number of required and special topics courses that could be offered, the yearly rotation of these courses, and the needs of undergraduate programs. The resulting curriculum, implemented in fall 2001, identified three core areas: Rhetoric, Composition, and Literacy Studies; Technical Communication and Technology Studies; Communication in Cultural Contexts. PhD students were required to take all three and master’s students took two. All “were labeled ‘headwater courses,’ owing to our water wonderland of the U.P. From each headwater flowed specialized courses that were seen as related to the content and methods appropriate to that headwater’s ‘stream’” (Johnson, 2013, interview).

In the years following this revision, the RTC program fulfilled the goals its originators had identified in their proposal. Faculty from all areas of the department examined “the contexts of communication events” (Proposal to Develop, 1989, p. 35) from a variety of perspectives, and published their research in books, articles, and book chapters on the topic. Most PhD students concentrated in technical communication or composition and rhetoric, but all of the more than sixty students engaged in rigorous interdisciplinary training that made them “look different—more broad-based and digital—than graduates of other programs” (Cooper, 2013, interview). As a result, the program placed the majority of its graduates in tenure-track positions. “Those students, in turn, are publishing regularly, sometimes mentoring graduate students of their own, and sometimes hiring our graduate students into tenure-track positions” (Flynn, 2013, interview). Finally, the goal of collaborating with colleagues across campus was also achieved. Significant National Science Foundation (NSF) grants were awarded to humanities and computer science teams interested in how rhetoric and technical communication might inform problem solving in software engineering. These interdisciplinary awards, in turn, motivated participating faculty to write jointly authored articles, give

conference presentations together, and collaborate on interdisciplinary class design.

Reasons for Revision

According to several of those we interviewed, the curricular change in the Rhetoric and Technical Communication program was a result of several intersecting factors. First and most simply, three of the six interviewees said that curricular change is part of the life cycle of any program. It had been over ten years since the last major revision and review of the RTC graduate program which meant that a review was seeming increasingly necessary to keep the program current. Although curricular reviews are typically undertaken about once every ten years, they may be undertaken more frequently due to accreditation requirements, which was not the case of the RTC program, and are frequently motivated, as they were in RTC, by a “strong desire on the part of the entire department to update or improve program quality” (Diamond, 2008).

Another practical reality was a shift in hiring patterns (Cooper, 2013, interview). “The hiring of assistant professors since 2008... brought a diverse, energized, and promising cohort of scholar/teachers to the department,” (Langston et al., 2018, p. 4). Many of these new faculty members, however, had difficulty identifying ways they could contribute to the RTC program as it was then configured. Three of our interviewees mentioned this difficulty as a personal motivating factor for participating in revising the program and expressed hope that a restructured program could make better use of a much wider range of faculty capabilities (Collins, 2013, interview; Fonkoué, 2013, interview; Marratto, 2013, interview).

In addition to practical reasons for the revision was the faculty’s desire to strengthen interdisciplinarity. Several interviewees claimed that the name of the program—Rhetoric and Technical Communication—no longer reflected the actual curriculum and the potential research emphases of the graduate students (Collins, 2013, interview; Marratto, 2013, interview). This disconnect, they maintained, made it difficult to recruit students from fields outside of technical communication and rhetoric and composition, and sometimes created difficulties for students on the job market, especially for students whose research did not clearly connect to technical communication which was, after all, in the name of the degree.

The interviewees recognized, however, the need to retain what had been one of the major strengths of the existing program: its success at placing graduate students in tenure track positions “at institutions of equal or better rank” (Langston et al., 2018, p. 2). As one

interviewee put it, "The strength of our program has certainly been that it is housed in a Humanities Department and that students receive rigorous, interdisciplinary training. When they compete for jobs in technical communication or rhetoric and composition with students from programs more narrowly conceived, they stand out" (Flynn, 2013, interview).

By 2011, however, fewer applicants were applying to the program, fewer were accepting its admission offers, and fewer graduates were securing tenure-track positions (Langston et al., 2018, p. 2). Commenting on this decline, one interviewee observed that the program's success with placement had created its own set of difficulties, partly because many similar programs were competing with it, some of them created by RTC program graduates. In general interviewees believed that it was time to change so that "we can stay on the forefront," partly because "we've been so successful at seeding other institutions with our students" (Bergvall, 2013, interview).

Interviewees also expressed concerns about the "sidelining" of fields outside of technical communication and rhetoric and composition. For them, this lack of coherence was epitomized by the C-stream within the degree, which was generally identified as unfocused, a grab bag of disciplines (communication, cultural studies, modern languages, philosophy) connected only by not being technical communication or rhetoric and composition. As a result, they maintained, there were "gaps in students' preparation" as regularly scheduled course offerings increasingly became a collection of stream head courses supplemented by special topics courses with little scaffolding to unify them (Marratto, 2013, interview). Some expressed the hope that a restructuring would make better use of existing faculty resources (Fonkoué, 2013, interview; Marratto, 2013 interview), resulting in a "more coherent program that everyone has a stake in and that is more responsible to students and less 'This is what I do'" (Collins, 2013, interview).

The Revision Process

As anyone who has been involved in curricular review and revision knows, enacting change can be a difficult and contentious process, made even more so when attempting to integrate and foreground interdisciplinary work. One interviewee identified trust as a crucial component of the RTC revision process: "People need to trust that other people are willing to make sacrifices and not push their particular agenda" (Marratto, 2013, interview). Interviewees also talked about the importance of facilitating mutual respect in these discussions and of moving away from "real estate" and towards ideas, away from course titles and towards concepts: "What do we think students should be

equipped with?" (Collins, 2013, interview). In short, the consensus appeared to be that if we can "learn each other's language" (Pryse, 2000, p. 6), we move closer to understanding "how we work and how we have learned to think" (Pryse, 2000, p. 4).

"Moving closer," however, was difficult because faculty had different opinions about goals for the revision process, expressing very different opinions about how far to go with interdisciplinary curricular reform. Some suggested modifying the program, adding knowledge, methods, skills, and practices to the existing disciplines currently represented. Doing so, they surmised, would be a good strategy to move toward change: "the structure, purpose, and characteristics" of the program, however, would remain unaltered (Klein, 2010, p. 68). Other faculty suggested taking another step, this one toward "integration." While their approach encouraged "a sense of unity, larger scope of study, and connections among disciplines and throughout the curriculum," it left disciplinary specializations and their conventional practices unchanged (Klein 2010, p. 68). Still other RTC faculty came to the revision process with a complete transformation in mind, one which offered "alternative forms and outcomes of knowledge production" and "reorganize[d] existing categories by exploring new topics and developing new subject matters" (Klein, p. 102).

Given these very different perspectives on what the revision should accomplish, interviewees recognized the importance of facilitating communication among faculty and across disciplinary boundaries. As one put it, "Just because we're in a department with multiple disciplines doesn't mean that we know about what colleagues are doing. It's a long process to get out of our disciplinary boundaries, but it's a necessity" (Fonkoué, 2013, interview). Related to this challenge were those of "getting people really talking to each other" (Cooper, 2013, interview) and making sure everyone had the chance to fully participate in the process...to feel that they had had that opportunity (Fonkoué, 2013, interview; Marratto, 2013, interview).

With these good intentions—sometimes realized and sometimes not—the revision process began. In fall 2011, the RTC Graduate Steering Committee (RTC committee) distributed a survey to faculty, grad students, and alumni soliciting feedback about the graduate program. Results identified five areas of concern (Bergvall, 2013, presentation):

- streamheads/structure of major and minor areas;
- proseminar;
- research methods;
- modern language requirement; and
- overall curriculum.

At the same time, the RTC committee began a benchmark study into comparative programs, which was continued into fall of 2013. This study of comparative programs examined their program contents, research methods requirements, proseminar, and overall degree structure (Bergvall, 2013, presentation). In fall 2012 and spring of 2013, the RTC committee also reviewed Modern Language Association (MLA) and Chronicle job listings to identify key terms and areas of expertise most in demand.

Throughout the spring semester of 2012, the RTC committee held hour-long forums during which faculty discussed areas of concern in the current graduate program. These forums culminated in a five-hour workshop in which faculty reviewed components of the graduate curriculum. This workshop consisted of “back-to-back forums on: the modern language requirement, the proseminar and a research methods requirement, the stream structure and major/minor stream structure, and the overall curriculum” (Bowler, 2012, email).

Although concrete solutions weren’t proposed during this workshop, the faculty consensus was that it was time to rethink and revise the structure of the curriculum. As mentioned earlier, of particular concern were the three headwater courses, especially the C-stream course, “Communication in Cultural Contexts.” Faculty saw this course as a catch-all for any discipline outside the areas of technical communication and rhetoric and composition, and they found it difficult to teach in a comprehensive and consistent way. Additionally, faculty expressed concern—also expressed by our interviewees—that graduate course offerings were increasingly reduced to the three headwater courses and an incoherent assortment of special topics courses. For these reasons, many faculty members were motivated to revise the program in ways they hoped would offer graduate students a more coherent integration of curricular breadth and depth, structure and flexibility.

In January of 2013, the RTC committee distributed another survey that requested feedback on ways to revise the graduate program. As a result of feedback from that survey, the committee presented recommendations to the faculty: to change the title of the program and to replace the three streams with interdisciplinary core areas.

In April of 2013, the faculty voted, via ballot, to change the title to Rhetoric, Theory and Culture and to move to five interdisciplinary core areas:

- Writing, Literacy, and Technical Communication;
- Philosophy and Rhetoric;
- Culture and Communication;
- Languages, Literatures, and Globalization; and

- Technology, Media, and Visual Studies.

In the fall semester of 2013, the RTC steering committee split into two subcommittees: (a) a steering committee and (b) a curriculum committee charged with implementing the changes. The curriculum committee hosted a three-hour long workshop to review each of the five core areas and to discuss which foundational courses should be offered in each area. Over the next few months, there was an hour-long meeting for each core area in which the faculty affiliated with each area discussed the courses to be offered.

After extensive discussion and deliberation, faculty voted to approve the following ten “groundwork” courses that corresponded to the five core areas and were to be offered over a two-year cycle along with a suite of more advanced courses that would be balanced over the five interdisciplinary core areas.

- Writing, Literacy, and Technical Communication
 - * Technical and Scientific Communication
 - * Rhetoric, Composition, and Literacy
- Philosophy and Rhetoric
 - * History and Theory of Rhetoric
 - * Continental Philosophy
- Culture and Communication
 - * Cultural Theory
 - * Communication Theory
- Languages, Literatures, and Globalization
 - * Critical Perspectives on Globalization
 - * Critical Approaches to Literature and Culture
- Technology, Media, and Visual Studies
 - * Visual Theory and Analysis
 - * Theoretical Perspectives on Technology

On March 26, 2014, Michigan Tech’s Faculty Senate approved the name change and the new curriculum. These revisions were approved by the university’s administration on May 2 of that year, and by the state on June 5 (“Proposal,” 2013).

Results of Revision

Four years after the Rhetoric, Theory and Culture program was approved, we pick up our story again. In the following discussion, we recall the reasons for this revision and report on how the new program is unfolding in that context.

Renewal. As we mentioned earlier, when the department began its discussions in 2011, it had been over a decade since its last major graduate program review. The revision process thus provided new

opportunities to discuss what we saw as the purposes of graduate education and the core knowledge that we wanted students to have. As we move forward, we need to take advantage of similar opportunities. For instance, an external review of our program conducted in 2018 recommends that the department go on a retreat to discuss RTC's focus as well as curricular concerns raised in the report. The reviewers ask, "What is the particular quality or aspect or effect of the interdisciplinarity in the RTC Program that stands out?" (Langston et al., 2018, p. 5). Addressing questions such as this would confirm and extend our commitment to renewal.

Hiring Shifts and Faculty Involvement. Many of our interviewees hoped that the program's revision would increase faculty involvement from disciplines outside of technical communication and rhetoric and composition. From the perspective of teaching and mentoring, the revision seems to have been fairly successful. Reviewers Langston, Smith, and Selzer note that based on their conversations with faculty, "the majority...consider...the reconceptualized program a positive achievement" (p. 4). Likewise, the reviewers report that graduate students "praised the high quality of the graduate seminars" and felt that "they could approach faculty and count on mentoring" (p. 8).

Recruitment and Job Placement. There is no question that the numbers of applicants to the RTC program have grown since the revision. Marratto noted that while applications in 2012 were "in the thirties," there were 97 applications to the master's and PhD programs by Fall 2017 (2018, interview). The external reviewers attribute this increase to "three intersecting trends": first, to the program's "persisting reputation of distinction;" second, to the "reconceived focus on theory, culture, and globalization;" third, to "concerted recruitment efforts on the part of the Chair and faculty" (Langston, et al., 2018, p. 7). The increase in international applications is especially impressive given that applications from international students are down nationwide due to the current political climate. The reviewers were impressed by both the diversity and quality of the current cohort of graduate students, observing that "the program is populated by talented people" (p. 7).

Nevertheless, while the number of applicants has risen in recent years, Marratto expressed concern that the number of domestic applications has dropped, and that we are "not getting a lot of applications in Technical Communication" (2018, interview).

Like graduate programs around the country, the RTC program has seen fewer graduates placed in tenure-track jobs. The reviewers write, "2014 was the last year in which the placement rate into tenure track positions was a robust 66% (or 4 out of 6 graduates reporting)" (2018,

p. 12). In his initial response to the report, Strickland notes that it is "important to broaden the criteria for success beyond the traditional 'tenure track academic appointment.'" He observes that many of our graduates go on to work in administrative positions within academia, and that international students who get jobs in their home countries may have titles that do not necessarily mean the same thing as those in the U.S.: "Lecturer," for example, might be an international equivalent to "assistant professor" (2018, p. 3).

Coherence. Increasing the coherence of the program was an important motivating factor for the program revision. The current structure requires that master's students choose four courses from the selection of ten groundwork courses and that PhD students choose five, with students in both degree programs taking more courses in their areas of specialization. Additionally, at the PhD level, students are required to take a course that satisfies a Global/Intercultural requirement, to demonstrate second language competence, and to take a course focusing on research methods. Students who are on teaching assistantships take a required Composition Pedagogy practicum, as well as a non-credit bearing Introduction to Graduate Studies course.

The need to take ten groundwork courses over a two-year period creates challenges for students who want to focus deeply in a particular discipline, such as technical communication, as well as for faculty who want to offer more specialized courses. As the program has increased its breadth, in other words, offering opportunities to explore disciplinary depth has become a challenge. On the other hand, the past four years have seen students moving more quickly to complete their degrees. The external review report observes that time-to-degree "has been reduced from 6.2 years in 2015 to 4.8 years in 2016" (Langston et al., 2018, p. 11), thus suggesting that faculty have successfully mentored graduate students as they negotiate the program's requirements.

Interdisciplinarity and Disciplinarity. The strongest motivation for the RTC revision was a desire to foster a more interdisciplinary program. While there has been some movement in this area, we argue that the program is still multidisciplinary rather than interdisciplinary. For instance, in the past two years the graduate program hosted a series of colloquia at which faculty and graduate students presented and discussed their recent work. While graduate student attendance at these events remained strong, faculty attendance dropped off in the past year, necessitating that the colloquia be redesigned.

In his 2018 interview, Marratto remarked that in his recent conversations with graduate students, he can see that they "really strive to

make sense of the possible intersections between disciplines,” and that a lot of what he has learned about such intersections is from conversations with these students. However, when asked whether it is his sense that graduate students in the program are working on more interdisciplinary projects, Marratto said that he felt that there were “a lot of broad communication and composition related themes,” and acknowledged that “perhaps disciplinary identities have shifted slightly rather than becoming more truly interdisciplinary” (2018, interview).

Supporting this observation were those by external reviewers that graduate students are working on projects that would fall somewhat under the discipline of Cultural Studies (Langston, et al., 2018, p. 5). Strickland concurred that “it is fair to say that the program’s identity has shifted somewhat away from a narrowly defined ‘Technical Writing’ focus in the direction of ‘Cultural Studies’ (CS), though there was always a substantial CS dimension to many of the courses and dissertations.” (2018, p. 2).

These issues of identity point to ongoing tensions between disciplinarity and interdisciplinarity in the new RTC program. We are undoubtedly not the only graduate program with a concentration in technical communication that has felt the need to reinvent its identity in order to remain viable and current. As we have argued elsewhere in this article, revision and renewal are part of the life cycle of any robust program.

The political consequences of naming the program “Rhetoric, Theory and Culture” and de-emphasizing technical communication are clear but conflicting. “Naming,” as Johnson observes, “has political consequences... The names... do not stand alone; they are part of a larger network of programs” (2007, p. 713). On the one hand, the change reflects general faculty consensus that technical communication is infused with and inextricable from rhetorical and cultural theory, and that the change reflects a conscious demarcation from more instrumental approaches to technical communication pedagogy and practice. On the other hand, over the past four years, the numbers of graduate students interested in a technical communication concentration have declined (Marratto, 2018, interview). While the program does offer students this option, it is unique in that it does so without including language that conventionally names such programs in its title. And, as our external reviewers point out, being unique “is not necessarily an advantage” (p. 6). For instance, within CPTSC’s database of programs in professional, technical, and scientific communication, Michigan Tech’s is now one of the only degree titles that does not include “writing” or “communication” in its title, not to mention the signifiers “technical,”

“professional,” or “scientific.”³ In addition, a survey of graduate certificate programs found that most such programs included either “professional writing,” “technical writing” or “technical communication” in their titles (Melonçon, 2012). Without these words in the program’s title, the technical communication emphasis becomes a much less visible possibility for prospective and current students.

One interviewee addressed this paradox specifically, observing that in its pursuit of interdisciplinarity, the program was losing sight of the disciplines that had allowed it to attract and place top-notch students in the areas of technical communication and rhetoric and composition. With the elimination of the streamhead courses, she noted, the “disciplinarity of the program has effectively been eliminated... [i]f we think we can now compete with larger and more mature PhD programs in areas such as communication, modern languages, linguistics, and philosophy in placing students in tenure-track positions, I’m quite sure we will learn soon enough that we cannot” (Flynn, 2013, interview).

In their report, however, external reviewers Langston, Smith, and Selzer maintain that the RTC program can “provide quality, competitive graduate offerings” although doing so “will take continued support from the university administration as well as great resourcefulness, vision, and cooperative effort on the part of the faculty in order to pull it off” (2018, p. 3). While more optimistic, the reviewers’ assessment leaves us with several important questions: What do we mean by “interdisciplinary” and can we explain our meaning to others?

These questions, in turn, raise concerns of a very practical nature for the new program. For instance, since the groundwork courses take the place of more discipline-specific coursework, graduate advisors and committee members find themselves increasingly filling in disciplinary gaps in knowledge in order for their students to be prepared to write theses and dissertations and to be competitive on the job market. It is a pragmatic reality that our students need to get jobs, and that those jobs reside, more or less, in specific disciplines. We would thus advise colleagues involved in or considering revisions similar to the ones we have described not to lose sight of their own disciplinarity in pursuit of interdisciplinarity; to think carefully about what combinations of disciplines might best constitute interdisciplinary education at their institutions and how those combinations might contribute most fully to graduate student success.

Having learned that it is important to secure administrative sup-

3 A notable exception are the University of Washington’s MS and PhD programs in Human Centered Design and Engineering.

port in addition to faculty and student buy-in, we would also advise colleagues considering such a revision to take into account institutional realities. Programs must make sense in their own institutional contexts and to administrators who have the power to withhold or disperse resources. Over the past four years, for instance, Humanities' requests to search for a faculty member in technical communication have been declined and we have lost a number of teaching assistantships, both of which have implications for the health of the new program. We have come to realize that in the absence of a name that makes immediate sense to those outside Rhetoric, Theory, and Culture, we must make more compelling arguments about why the program is valuable and how it complements the mission of the technological university in which it resides.

The Interdisciplinary Arc

Although RTC faculty have grappled with interdisciplinarity for almost 30 years, we are confident that the story remains unfinished. To advance its arc, we have asked questions that are intended to encourage "critical reflection about one's field and its assumptions, imagination about possible reciprocity across disciplines, and honesty about ways to ultimately subordinate [them] to a particular issue, problem, or holistic scheme" (Klein, 1990, p. 66).

Over the next few years, faculty in the Humanities Department will want to ensure that their vision of the graduate program leads to the realization of interdisciplinary distinction and that the practical aspects of the program—its coursework and requirements, its professional training and mentoring—ensure success for graduate students upon completion of their degrees. We are fortunate to have an increasingly international profile in both our faculty and graduate student body, so there is also an increasing emphasis on globalization, cosmopolitanism, transnationalism, and multilingualism in our graduate courses. These are promising points of convergence across disciplines in our department, setting our program apart from others. To make good on this promise, we will need to explore more effective ways to support both faculty and graduate students as they take integrative approaches to interdisciplinary work, identifying the intersections of their own fields with those of others and working alongside each other to produce new knowledge.

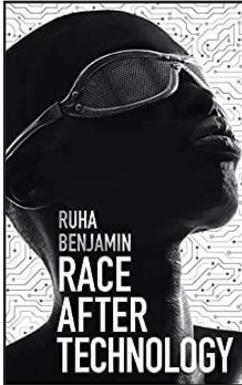
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Book Review Editor

Russell Kirkscey, *Penn State Harrisburg*



Race After Technology: Abolitionist Tools for the New Jim Code

Ruha Benjamin

Cambridge, United Kingdom

Polity Books

2019. 178 pp.

Reviewed by Kimberly C. Harper

*North Carolina Agricultural and Technical State
University*

The explosion of technology has changed the way we operate. Email, blogs, and websites are no longer the standard for computer mediated communication. Today's digital communication includes social media apps like TikTok, Instagram, Twitter, Snap Chat, and Facebook. Business communication includes the use of programs like Zoom, Slack, and Blue Jeans, and every industry has technology or software that is specific to its needs. As a result, the need for computer scientists has not slowed down. With each technological advance, there is the growing notion that technology is moving us toward a more equitable society. In her book *Race After Technology: Abolitionist Tools for the New Jim Code*, Ruha Benjamin outlines what society should be concerned with as we move forward into this ever-changing digital world. Benjamin's text is among a growing network of scholarship (Browne, 2015; Noble, 2018; Eubanks, 2018; McIlwain, 2019) examining the effects of racism on digital spaces and programming. Collectively these authors discuss the effects of technology's perceived neutrality on the lives of poor people, women, and people of color. Starting with chattel slavery, Browne gives a historical account of surveillance and what it has meant for the Black

community. Noble's work explores how algorithms are used to take real-world stereotypes and move them into the online realm. Her study looks at how Black women and teens are hyper sexualized in search engines. Eubank's research discusses how software and predictive analysis is used by government, business, and healthcare industries to track the lives of poor people. McIlwain's study discusses how Black activists use a variety of computer technologies to effectively recruit, organize, and protest, against threats to Black communities. Benjamin's work furthers these discussions by placing emphasis on coding and the power of the individuals who create technology to create a stratification of social class as well as enforce a sort of social control.

The overall theme of *Race After Technology* is that technology is not neutral, and Benjamin argues this point across chapters detailing how bots, algorithms, database designs, and surveillance software can mimic the Jim Crow laws that restricted the movements of Black Americans in the South after chattel slavery ended. Benjamin's argument is that algorithms and their creators are products of a society that is biased, and when unchecked, the potential for that bias find its way into programs, which means that inequity is coded into digital systems. Benjamin writes that her book is a sort of field guide for exploring "how emerging technologies, hide, speed up, or reinforce racism, but also how race itself is a kind of technology—one designed to separate, stratify, and sanctify the many forms of injustice experienced by members of racialized groups, but one that people routinely reimagine and redeploy to their own ends" (p. 36).

Using Jim Crow laws as a metaphor, Benjamin structures the five chapters of the book around the concept that technology has created the new Jim Code as a way to again regulate and reinforce how people understand and experience race in society. Chapter 1, "Engineered Inequality" is an exploration of deep learning and the theory of the mind. Using the example of Beauty AI, Benjamin describes how preferences for whiteness can skew facial recognition software and its ability to properly scan darker skin tones (Benjamin, 2010, p.51). Chapter 2, "Default Discrimination" asks readers to consider the "mystique around computer codes, which hides the human biases involved in technical design" (Benjamin, 2019, p. 78). In this chapter Benjamin suggests that glitches in software design are sometimes a result of a computer scientists' lack of cultural awareness across lines of race, gender, and class. She uses the example of Google maps misreading Malcom X Boulevard as Malcom Ten Boulevard. One point to consider from this chapter is that race can be perceived as a glitch. Chapter 3, "Coded Exposure" is a discussion of the concepts of privacy and subjectivity. Benjamin

unpacks who can demand and protect their privacy by exploring surveillance technologies that are part of poor communities across the country. At the core of her discussion is the idea that Blackness is either invisible or hyper visible, thus posing a danger to communities that are racially surveilled. On one hand, invisibility makes a person an interloper or misplaced in environments that are perceived as off limits, and on the other hand hyper visibility makes a person more visible; therefore, their every action is watched—even when doing the most mundane things. In Chapter 4, “Technological Benevolence,” Benjamin continues to consider surveillance but from the perspective of electronic monitoring devices and facial recognition software used to monitor ICE detainees and American citizens who are involved with the criminal justice system. In addition to this software, Benjamin details predictive software programs that are being used to circumvent laws that prevent the gathering of ethno-racial data from individuals (p. 145). In the final chapter, “Retooling Solidarity, Reimagining Justice,” Benjamin implores readers to consider how tech design is heavily influenced by our society’s racial composition.

As we continue to engage with new technologies, academic programs must also continue to refresh existing curriculum. For TPC program administrators, *Race After Technology* can start meaningful conversations about the importance of representation as well as lay the foundation for administrators to create new lines of inquiry as they reassess what is important to the growth of their program. Benjamin’s text is also an excellent read for TCP administrators wishing to scaffold a discussion about the “discriminatory designs” of technology and social justice with faculty and students (Benjamin, 2019, p. 8). Recent work by Haas and Eble (2018) and Walton and Jones (2019) highlight the importance of incorporating social justice into TPC and provide practical advice on how to do it; however, these works do not specifically address the role of technology in the fight against social injustice. And while this is not a TCP book per se, it is useful for administrators and faculty who have an interest in providing students with the cultural competencies needed for working in technology driven markets that purport to value a diverse society. It is also timely because there is a conversation happening within TCP that is centered on social justice, and this work can provide additional context regarding systems of inequity. Benjamin places much emphasis on dismantling the invisible systems that oppress marginalized communities, and her discussion of software and the way whiteness as an invisible racial category is coded into online experiences fits nicely into any TPC class that has a social justice emphasis.

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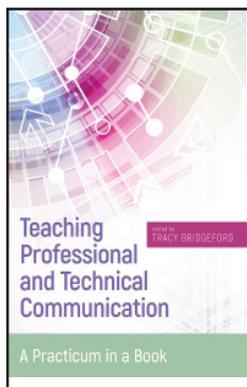
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Author Information

Kimberly C. Harper is the Associate Chair and an Assistant Professor of English at North Carolina Agricultural and Technical State University. She is also the Director for the TPC concentration. Her scholarly interests include textbook bias, Black maternal health, hip hop and mental health, and social justice. She is the author of *The Ethos of Black Motherhood in America* and the founder and host of *The Space of Grace*, a monthly podcast focusing on Black maternal health and reproductive justice. Follow her on Twitter @ronbett75 and Instagram @spaceof-rjgrace.

Book Review Editor

Russell Kirkscey, *Penn State Harrisburg*



Teaching Professional and Technical Communication: A Practicum in a Book

Tracy Bridgeford, Editor

Louisville, Colorado

Utah State University Press

2018. 236 pp.

Reviewed by Stephen Fonash

Alfred State College

Teaching *Professional and Technical Communication: A Practicum in a Book* is designed to “help inexperienced instructors understand the classroom experience of the technical and professional communication (PTC) instructor and how to be professional and technical communication instructors in face-to-face classrooms” (p. 3). Earlier texts such as *Teaching Technical Communication: Critical Issues for the Classroom* (2004) and *Solving Problems in Technical Communication* (2013) focused on providing resources to “give new teachers a lay of the land” (p. vii) and on providing problem-solving frameworks for “newcomers and people with some experience” (p. 1), respectively. *Teaching Professional and Technical Communication* builds on these texts and presents a collection that emphasizes the “theoretical and practical aspects of preparing to teach PTC” (p. 4).

Tracy Bridgeford presents a collection that spotlights practical approaches to assignments and provides illustrative advice from established, successful PTC scholars—a focus that inexperienced teachers as well as program coordinators should welcome.

Specifically, teachers new to PTC curriculum or branching out from a Technical Writing “service course” should find the book’s con-

tent and arrangement to be helpful as they create curriculum. Program coordinators should find the content to be helpful as they align (and revise) courses and outcomes with established voices and directions in the field.

The practicum features 13 chapters that focus on key components of PTC instruction underpinned with an emphasis upon PTC's problem-solving method, which asks students to "approach their writing from the standpoint of a communication problem" (p. 5). Emphasizing the critical and social aspects of PTC classroom instruction should prove helpful to inexperienced instructors who may rely more upon a forms-based approach. Most chapters open with a common scenario encountered by a hypothetical instructor: "Wendy, a new instructor, is introducing her students to the first writing assignment in her introductory technical writing class" (p. 72); "Jeff, a doctoral student at a small technological university, has been planning his first technical communication course for several weeks" (p. 89); "You've just been given a copy of the updated outcomes for the technical communication program and asked to ensure that your course is designed to address the new student learning outcomes" (p. 105).

Most chapters then discuss the theoretical basis for the chapter and the role and relationship of the chapter (e.g., document/information design as an important and growing aspect of teaching PTC), provide an example of what a classroom project or activity could look like, explain how and why the activity connects to PTC, and finish with accessible and supportive words of advice for the reader. Sample discussions conclude each chapter to complement practicum classes.

This "practicum in a book" has two audiences for whom it can be quite useful: inexperienced (or relatively inexperienced) instructors and program coordinators. In the first chapter, Bridgeford sets the stage for the practicum aspect of the text and shows how each of the following 13 chapters will flesh out the theory and practice in greater detail, again allowing the inexperienced teacher to see the connections between the chapters—or allowing a program coordinator to build upon these connections when planning training or crafting a syllabus. Theory is present and grounded within each chapter; however, the references are well-known and established members of the PTC field and the explanations are generally clear and accessible. Inexperienced instructors and graduate students new to the field should not have a problem seeing the connection between the theory and the practice, and this book can serve as not only a useful practicum, but also as a survey of many best practices in the field and how they connect to foundational theories in PTC (e.g., multiliteracies). Program

coordinators can easily supplement or augment with additional readings and can also use the collection to complement new instructor or graduate student training in PTC.

The collection's 13 chapters are organized in a "general to specific" manner, building from Bridgeford's "Introduction to Teaching Professional and Technical Information" through Chapters 2 and 3 that address rhetorical analysis and style—topics that most instructors should find somewhat familiar and comfortable. Chapters 4 through 8 shift, by focusing on the content strategy, genre, information graphics, design, and procedures. Most instructors will recognize these topics from their course texts and find the information helpful in expanding their approaches to teaching these topics. Chapters 9 to 13 conclude the collection, culminating in chapters on ethics, collaboration, usability, presentations, and international and intercultural communication—topics that inexperienced instructors might have more limited experience with. The organization structure lends itself well to either self-study or as the primary text for a practicum.

For example, in "What Do Instructors Need to Know about Teaching Information Graphics?" Karla Saari Kitalong emphasizes the importance of understanding how information graphics express complex data relationships. Kitalong notes that many commonly used textbooks limit information graphics to stand-alone chapters with an emphasis on static visuals; instead of this route, instructors—inexperienced and experienced—are encouraged to develop their own personal functional literacies (e.g., through SkilledUp or like resources) and to embed information graphics throughout their entire course. The chapter's explanations are persuasive and rely heavily upon Stuart Selber's (2004) multiliteracies in constructing functional, critical, and rhetorical activities. This connection should work for inexperienced PTC teachers since (as Kitalong notes) Selber's multiliteracies are not hierarchal, but they are scalable. This adaptability invites instructors to scaffold and connect activities and to build their own and their students' confidence. Program coordinators or faculty leading PTC training should also find this framework useful for analyzing activities and teaching strategies—helping to unpack and connect the theory that both informs and directs them.

Of particular value for either the inexperienced teacher or the program coordinator are the sample assignments, discussion questions, and additional resources provided in each chapter. While some programs will require a specific curriculum for first-time teachers of a course, the samples still provide excellent support and contrast for the instructors—and a starting point as they expand their assignments

and activities. Especially thorough and accessible samples are in Dave Clark's chapter on content strategy, Brent Henze's chapter on genre, Eva Brumberger's chapter on design, David K. Farkas's chapter on procedures, and Kirk St. Amant's chapter on international and intercultural communication. Helping to establish the ethos of the collection are Bridgeford's grounding and explanation as she connects the framework for the text to her own experiences, James M. Dubinsky's emphasis and advocacy for rhetorical studies and analysis, and Paul Dombrowski's primer on ethics in PTC. Elsewhere in the collection, Dan Jones builds upon the work of Sam Dragga and Elizabeth Tebeaux (2015) in emphasizing style, Brent Henze channels and updates Richard Coe's (1994) archaeological and ecological frameworks and Peter S. England and Pam Estes Brewer further the work done by Rebecca Burnett, Marilyn Cooper, and Candice Welhasuen (2013) in highlighting the significance of collaboration in the field. Traci Nathans-Kelly and Christine G. Nicometo round out the practicum with relatable and helpful advice on teaching technical presentations.

An enjoyable aspect of this collection that should help it connect and resonate with instructors are the aforementioned scenarios that frame each chapter—as well as how relatable each of these scenarios are to both inexperienced and experienced instructors. “Amanda,” for example, feels like she should refresh her approach to teaching advanced professional and technical communication, and she wants to focus on content strategy. Amanda, however, feels overwhelmed. “Jeff” is concerned about teaching information graphics: he has not really stayed up to date with spreadsheets and has “successfully avoided math” for much of his career. He is worried that his STEM students will question his credibility. An unnamed instructor watching student presentations “dies a little on the inside” with each presentation and drags themselves to the classroom each day. As noted earlier, this grounding of theory in practice is one of the collection's major strengths. Many of the readers will find something in many of the scenarios to identify with, which makes this text accessible and a good fit for inexperienced or experienced instructors alike.

Teaching Professional and Technical Communication: A Practicum in a Book delivers on its title. Bridgeford has successfully curated 13 chapters that address the breadth of PTC and serve as an excellent foundation for a training practicum, as a resource for the individual teacher, or as a reference for new classroom activities and assignments. By emphasizing praxis, *Teaching Professional and Technical Communication: A Practicum in a Book* accentuates its accessibility and applicability: it recognizes the importance of the field, the evolving nature of the field,

and the humanity of the field. The voices of the established scholars sound clearly through each page and guide the reader—something instructors in a practicum (or in their home office) will surely appreciate.

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Author Information

Stephen M. Fonash is an Assistant Professor of English and Humanities at Alfred State College (SUNY) where he teaches writing and literature courses. He considers himself (to borrow a phrase from a mentor) a free-range rhetorician whose scholarly interests include technical communication and design, human/technology interaction and interfaces, science fiction literature, and literacy/literacies.