8. Creating the "Through-Line" by Engaging Industry Certification Standards in SLO Redesign for a Core Curriculum Technical Writing Course

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Abstract: This chapter describes one technical and professional communication program's (TPCs) revision of student learning outcomes (SLOs) in a sophomore-level technical writing course to engage industry standards and terminologies, specifically, the Society for Technical Communication's (STC's) nine areas of competency from the Foundation Certification Exam. These SLOs serve as an enculturative framework in the foundation-level technical writing course. This chapter also offers a discussion of how to navigate the challenges of implementing new SLOs, including getting buy-in from full-time and part-time faculty, especially when drawing upon industry-designed standards. Deriving from assessment data, this chapter argues that our program-specific adaptation of the STC's Foundational Exam competencies suggests effectiveness in setting the stage for a university-to-industry through-line that intends to benefit our students and reinforce the values of humanism, social justice, and user-centrism that figure as crucial emerging mandates in TPC today.

Keywords: student learning outcomes, assessment, program revision, technical writing, social justice, professionalization

Key Takeaways:

- Industry certification standards can be used to help shape technical writing course student learning outcomes (SLOs).
- Measurable changes reported via assessment, and qualitative indexes of improvement shared in faculty feedback, can suggest improvements in teaching and learning resulting from SLO redesign.
- Navigating the challenges of implementing new SLOs, especially when drawing upon industry-designed standards, necessitates getting buy-in from full- and part-time faculty.

Teachers in technical and professional communication (TPC) have long considered ways to more effectively bridge the gaps between their classrooms and

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the work of industry-situated technical communicators. To construct such a "bridging" curriculum (Blakeslee, 2001) for technical communication courses and larger curricula, TPC faculty have considered various interventions. Many such attempts exist in the form of genre assignments (proposals, procedures, feasibility studies, etc.) and others as discrete courses that are curricular requirements, such as a junior- or senior-level internship or service-learning course. Yet, are there ways to reformulate a curriculum, whole cloth, so that the founding premises of that curriculum have an eye towards students' eventual workplace realities? This question lies at the core of the curricular reform project studied in this chapter, a reform that began with a re-envisioning of our foundation-level technical writing course's student learning objectives (SLOs). We strove to determine how we could best endow our students with both the practical know-how that would inform their day-to-day duties as future professional writers along with providing them a theoretical basis in a university context that would prepare them to deal with emerging media, genres, ethical concerns, and audiences. This chapter offers a view into our strategies of meaningfully engaging such questions and making curricular changes as a result.

The interplay between what might be called practical and theoretical factors informs the work that TPC faculty do in the context of program development, curriculum design, and individual course planning. Teachers in TPC cannot design course plans and assignments that capture the dynamic nature and true diversity of writing situations that students may find themselves managing once they leave the classroom. Because it is likely not possible for TPC curricula to replicate or anticipate industry genre diversity and situational/compositional typologies in a "mirror image" fashion, we must re-think TPC curriculum development so as to foreground students' theoretical foundation as attached to "habits of mind" development, as relayed through carefully paced practices in standard conventions of multimodal TPC communication. What we share here is one such model, a model that foregrounds industry-situated terminologies—namely, the Society for Technical Communication's (STC's) Foundation Certification Exam's nine areas of competency—as an enculturative framework, a framework installed throughout one institution's TPC curriculum, beginning in its foundational, multi-major 200-level core curriculum course. Our model, then, is not so much a bridge as a *through-line.*

Our rationale for reinventing our curriculum with an eye towards training students as emerging communicators who are *already* imagining themselves as part of an industry and professional culture, and who are crucially doing the work that they can uniquely do in their university context, is that we well know that the definition of what exactly technical writing *is* is always in discussion. We include our students in this discussion from their first technical writing class. Our foundation-level course dedicates class time to practicing the conventions of specific communication outputs and probing the ethical dimensions of a technical communicator's work. But we also ensure that our instructors alert students to the

slippery nature of what technical writing/communication *is* by way of perusing the STC job board, doing analyses of technical communicators' personal websites, and reading prominent tech writers' personal blogs. Students come to discover, then, what Eva Brumberger and Claire Lauer (2015) found in their research on nearly 1,000 job postings in technical communication. Brumberger and Lauer observed that the job postings displayed considerable diversity in both job title and desired skills. We knew that in redesigning SLOs, we should be attentive to the breadth of skills this research described.

Brumberger and Lauer identified five main categories for position titles: content developer/manager, grant/proposal writer, medical writer, social media writer, and technical editor/writer. Teaching the writing practices inclusive of all of these different writing exigencies would be difficult in one common course. However, Lisa Melonçon and Sally Henschel (2013) observe that a "basic" technical communication course, described as one that introduces students to the "*practice* of technical and professional writing" (p. 51), is the most common course required of majors in technical communication (along with a later capstone course). That such courses have become a curricular standard is important for us to consider. In the case we share here, we describe how we reinvented our "standard" or "basic" class to be one that we believe helps set the tone for a student's decision to more generally embrace a technical communication certificate, minor, or major—and career.

Foundation-level (or "standard," "basic," core curriculum, lower-division—there are many identifiers) technical writing courses often function as "service" courses for faculty, in that often students enrolled in the courses are from outside an institution's TPC major, minor, or certificate track; many students come from the sciences and engineering, business schools, or nursing programs. Thus, these courses serve several populations. Sarah Read and Michael J. Michaud (2015) describe these courses as "multimajor professional writing course[s]," or MMPWs, underscoring the challenging nature of being designed both as the most common sort of course TPC students take while also having to operate in a service obligation to students outside a major. So, MMPWs are populated by students with diverse interest areas, but they are also taught by a wide-ranging faculty staffing structure at many institutions. The focal institution of this chapter's discussion, the University of New Mexico (a flagship state university at the Research 1 designation), staffs its 200-level (sophomore-level) technical writing courses, of which there are on average 28 sections each Fall and Spring semester, with a mixture of full-time faculty, part-time instructors, and graduate teaching assistants. Thus, there is interest-area diversity among our instructors (as very few are explicitly specialists in TPC) within English studies. All instructors have been trained, however, using the newly developed curricular model described in the following pages.

In sum, such courses—often the foundation for a student's expanded university-level study of TPC and potential later entrance into the profession—are chal-

lenging on many levels. Several years ago, we decided to address some of these challenges directly in the form of a substantial redesign of this MMPW—"basic" or core curriculum—technical writing course. We wanted to create an effective course that could both serve the important work of preparing students for our certificate and minor TPC programs (we do not have a major concentration) while also being responsive to the needs of students from across the university who had to take the course as a requirement for a completely different sort of major.

We were also inspired by the social justice turn in the field (Jones, 2016) to more explicitly include language that embraced attention to diversity in its myriad forms. We were particularly interested in ways to draw student attention to issues as they pertain to race, gender, sexuality, language diversity, and (dis)ability in a professional context, so as to prepare them to think critically about historical practices in TPC when and if they enter the profession as practitioners. We were also eager to add nuance to a set of SLOs such that they would be responsive to our own particular university context. The University of New Mexico, as our Land Acknowledgment Statement reads

> sits on the traditional homelands of the Pueblo of Sandia; as an institution of learning, UNM has a stated commitment to honoring "the original peoples of New Mexico – Pueblo, Navajo, and Apache" and their "deep connections to the land and . . . significant contributions to the broader community statewide."

Further, as this extends to program development, we know many of our students speak Spanish, Navajo, and languages in the Keres language family (plus many others); thus, we believe it is important to honor the linguistic diversity that shapes New Mexican culture. For us, then, as administrators of a technical and professional communication program, we knew that our SLOs needed to reflect the diverse reality our students know well already.

After much discussion with faculty (both full- and part-time), students, and other stakeholders, in 2017, we ran a pilot of our foundation-level technical writing course by taking inspiration from the "nine areas of competency" articulated by the Society for Technical Communication, as noted above. As Craig Baehr explains in a 2016 *Intercom* article, these competencies reflect "key terminology, facts, concepts, and techniques"; "These areas encompass a broad range of processes, practices, strategies, and roles that comprise the work of technical communicators and teams they serve on and manage" (p. 10). In idea-gathering workshops with our colleagues in the lead-up to the pilot, we did not suggest that our course could do the work of preparing students effectively for the STC Foundation certification. However, we did argue that the taxonomy of the "nine competencies" could offer a compelling language through which we could articulate the professional nature of our curricular goals. In redesigning our student learning outcomes (SLOs) to be more responsive to the STC's language while dedicatedly attending to our own students' needs at the University of New Mexico (UNM),

we crafted more precession into our descriptions and a stronger effective connection between both the theory and practice of technical communication. The nine competencies afforded us the "through-line" we believed our curriculum needed.

This chapter describes several parts of our journey from one set of SLOs to the revised, industry-informed set we use now. While what resulted from this process for us will not fit every program's needs, we believe we provide here an example of an effective administrative structure for undertaking an SLO revision project when there are several important and diverse stakeholders to respond to. Below, we will describe some of the theory that informed the earlier manifestations of our SLOs, and we offer a brief survey of how scholars have recently sought to more effectively link industry standards to curricular decision-making. Next, we explain the exigence of our task in revising our existing SLOs, including describing how we navigated stakeholders as we revised and solicited (and achieved) buy-in from our faculty. We then reflect on the sorts of challenges posed by incorporating industry standards into undergraduate academic contexts, as well as what sorts of approaches we may have taken differently in hindsight. We close by examining how we marked the experience as "effective," relative to our annual assessment of the 200-level course, suggesting what may be helpful as we continue an interactive process of assessing and evaluating the SLOs.

While we are generally satisfied with what we have achieved thus far in the SLO redesign and deployment process, this chapter argues that, certainly, our SLO redesign project's quantitative and qualitative "effectiveness" was only *partially* a result of our commitment to creating an academy-to-profession throughline. What our data (discussed in what follows) and anecdotal feedback from colleagues and students—and impressions of the experience identified by us, as project leads—suggests is something *more important* than what we did by refashioning our curriculum via industry-informed SLOs and curricular infrastructure suited to them. The "something" that is more important from our perspective is the commitment to an inclusive, iterative, and cautious approach, which lead up to the implementation of the changes we made. This kind of approach is what we advise other programs foreground in SLO and program revisions, as many already do. We hope that this chapter will serve as a model of effective administration in the midst of competing stakeholders and exigencies that swirled around our growing technical communication program.

"Technical Writing" SLOs, Reimagined

In 2016, the authors of this article began exploring a redesign of the TPC curriculum at the University of New Mexico. At that point, the SLOs used for this MMPW ("multimajor professional writing") course, ENGL 219, had been in use long enough that no faculty member could remember when, exactly, they had come about. Without a sense of what exigencies compelled these "legacy" SLOs into being, we could nevertheless observe the appeal of their simplicity. They were composed of four

well-articulated outcomes that served us well in our university assessment protocols. These legacy SLOs "aligned" with the State of New Mexico's Higher Education Department (HED) Area 1 "Communications" Competencies, though they were not verbatim the same outcomes, in the same language (UNM Office of Assessment, 2015). We will bracket out this larger discussion concerning "alignment" with State HED Competencies because it exists out of the scope of our present discussion of our own programmatic curriculum revision and its particular emergence in new SLOs for our foundation-level technical writing ENGL 219 course.

Table 8.1. University of New Mexico ENGL 219 student learning outcomes, circa AY 2015-2016

Student Learning Outcome (SLO) Number	**SLO Abbreviated Description**	**SLO Full Description**
1	Analyze Rhetorical Situation	Students will analyze the subject, purpose, audience, and constraints that influence the documents they write to ensure they achieve specific and useful results.
2	Find and Evaluate Information	Students will gather information from professional, academic, and government sources, evaluating the information they find for quality, validity, and usefulness.
3	Compose Information	Students will develop strategies for generating content and organizing it into a logical structure that is appropriate for their intended users; they will consider ethical influences for the documents they compose; they will work effectively with others to create documents.
4	Present Information	Students will edit and revise their writing to provide unambiguous meaning and coherent structure; they will incorporate visual elements to improve the reader's understanding; they will create an overall design that enhances readability and shows professionalism.

Table 8.1 shows the ENGL 219 SLOs circa Academic Year (AY) 2015-16. These SLOs were organized around four capacious concept areas: analysis, research, composition, and presentation. Particularly attached to face-to-face (F2F) sections of ENGL 219, these flexible SLOs afforded our diversely-skilled (and here we specifically use "skills" to connote instructors' own histories as TPC practitioners or researchers) ENGL 219 faculty to "teach to" these SLOs in a wide range of ways, with a wide range of assignments and a wide range of final course projects (ranging from professional portfolios to recommendations reports to proposal presentations). Yet, at this same point, our robust online version

of ENGL 219, eTC (electronic Technical Communication), was using its own SLOs, which aligned with these four SLOs, which themselves aligned with the State of New Mexico HED Communication Competencies. Already, readers of this chapter can surely understand the opportunities for better refinement and synthesis of SLOs across all ENGL 219 sections, as all of the threads of connection just mentioned caused us to be somewhat confusingly organized.

The online ENGL 219 (eTC) SLOs circa 2015-16 reflected the research of our colleagues Andrew Bourelle, Tiffany Bourelle, and Natasha N. Jones (2015). They had specifically modified the legacy face-to-face SLOs (see Table 8.1) to make them uniquely appropriate for the online, multimodal curriculum they lead. These scholars drew upon the five rhetorical canons to explore the applicability of the ancient tradition to a modern and multimodal context; thus, the eTC SLOs were, in effect, the classical rhetorical canons adapted for 21st-century application and specifically attuned to the multimodal mandate of the eTC curriculum. The exigence for the eTC SLOs, then, was that the legacy F2F ENLG 219 SLOs did not address multimodality at all.

So, one clear goal for creating new SLOs for the entire ENGL 219 course array—face-to-face, online, and hybrid—was to affect curricular consistency. The director of eTC, Tiffany Boruelle, welcomed the opportunity to holistically revise *all* ENGL 219 SLOs so that every section, across modes of delivery, featured SLOs that involved 21st-century communication principles, specifically concerning multimodal communication. Collaboration amongst program directors, then, was vital to ensuring that the newly selected SLOs could be modified to support curricular nuances in all modes of delivery of the course so that all 219 students, regardless of their section, would be ensured a certain degree of curricular uniformity. An additional benefit was that the annual assessment of ENGL 219 would then be able to capture programmatic efficacy (or lack thereof) across the entire spectrum of course sections.

Upon the launch of the Society for Technical Communication (STC) Foundation Exam competencies in 2016, which Craig Baehr carefully described in his *Intercom* article that January, the authors of this chapter began discussing the adaptation of these competency areas, and the skills that lie within them, to fit within the framework of a university-sited TPC education at the lower-division level. Moving from four course-wide SLOs to nine, we worried, might concern our instructors, so we quickly moved to planning a series of "listening sessions" with all ENGL 219 instructors. Two such sessions were held in Fall 2016. At the first of these sessions, we circulated the STC Foundation Exam competencies as originally written. We asked our instructors the following questions about those competencies:

- How (or how well or how poorly) might this industry-level certification-exam framework function as a set of learning outcomes in our course? Why?
- What are the limitations of this framework?
- How would the adoption of this framework impact the assignments we

teach in ENGL 219?
- Could this framework better support student education in
  - emerging technologies?
  - the needs of diverse users of communication?
  - workplace realities for technical communicators, post-graduation?
- How would we need to revise the STC's language to make the SLOs more focused on our students' needs and discourses?

We collected instructor feedback during this session and then, for the second session, we initiated a conversation around a revised version of the competencies, with language better attuned to our students' needs. Table 8.2 shows the original competencies and our revised versions. Additionally, we shared what we called a "menu" of assignment options that would scaffold appropriately relative to our larger curricular mandates/strategies for ENGL 219 and that would still leave instructors opportunities to employ their own teaching innovations in their online and F2F classrooms.

Table 8.2. STC Foundation Exam competencies (Baehr, 2016) and UNM's ENGL 219 competencies that synthesize these skills

Competency/ SLO Number and Title	UNM SLO Number	STC Description of Competency (Baehr, 2016, pp. 10-11)	ENGL 219 Revised SLOs
Project Planning	1	Project planning focuses on the work involved in planning and managing technical communication work teams and documents through a lifecycle process. It includes process planning, goal setting, progress tracking, and strategic planning activities.	Planning, researching, and composing technical documents (as a lifecycle process) in teams and individually.
Project Analysis	2	Project analysis involves the work of identifying readers and document contexts, including the development of reader profiles. This includes identifying types of audiences, users, readers, and their preferences regarding document use and readability. It also focuses on the analysis of document contexts, including working in global contexts and rhetorical situations.	Identifying a document's readers and a document's context relative to practices of composing for specific global, diverse, and multicultural audiences. Understanding how technical documents occupy and respond to social justice and community service contexts.

Competency/ SLO Number and Title	UNM SLO Number	STC Description of Competency (Baehr, 2016, pp. 10-11)	ENGL 219 Revised SLOs
Content Development	3	This category focuses on the development of content and technical information products. It addresses technical genres, their content, and use, including: memos, technical descriptions and specifications, instructional content, proposals, activity or status reports, and analytical reports. It also focuses on researching, including finding source materials, defining the scope of research questions and methods, and documenting sources and intellectual property concerns.	Understanding how genre conventions impact writing. Using contextual information to place specialized information into the appropriate genre.
Organizational Design	4	Organizational design focuses on guidelines and techniques for organizing and drafting technical documents. It covers organizational patterns and rhetorical moves for introductions and conclusions to technical reports, as well as patterns for specific technical genres including memos, technical descriptions and specifications, instructional content, proposals, activity or status reports, and analytical reports.	Practicing strong research skills with primary and secondary sources to generate appropriate content. Generating strong research questions and developing clear research practices.
Written Communication	5	Written communication covers general guidelines for composing content and communicating in written and electronic forms. It covers writing style, persuasion, tone, and general readability. It includes techniques for writing sentences and paragraphs for both print and electronic documents, and in global contexts.	Composing clear, stylistically responsible prose that avoids errors and pays attention to audience needs.
Visual Communication	6	This area focuses on general visual communication principles and practices, including using graphics, data displays and other kinds of information graphics, such as bar charts, line graphics, tables, pie charts, flow charts, etc. It covers the use of design principles, such as balance, alignment, grouping, consistency, and contrast. It also addresses the use of visual information and related technologies when giving presentations.	Using visual design principles to develop audience-friendly data displays, including charts, tables, infographics, line graphics, and presentations.

Competency/ SLO Number and Title	UNM SLO Number	STC Description of Competency (Baehr, 2016, pp. 10-11)	ENGL 219 Revised SLOs
Reviewing and Editing	7	This category addresses reviewing and editing processes and guidelines, and general usability. It encompasses the various levels of editing, including revising, substantive editing, copyediting, and proofreading. Additionally, it covers common grammatical and mechanical errors.	Across media and contexts, ensuring final clear style, user-centered writing, and error-free spelling and mechanics.
Content Management	8	This area focuses on managing content of information products, as well as the management of information development teams. It addresses Web content development, including the basic features of Web sites and general guidelines for developing Web-based content. It also covers the uses of social networks, wikis, blogs, microblogs, videos, and podcasts in working settings. From a teaming standpoint, it covers the roles and practices for managing content and roles across a work team.	Gaining knowledge of the organization and management of digital and textual information and receiving an introduction to information architecture, web content management, and social networking.
Production and Delivery	9	This category focuses on the production and delivery of information products, specifically how project outcomes relate to and inform the development of final production deliverables. It also addresses the importance of setting objectives for final deliverables and using them to measure effectiveness and outcomes of technical information products.	Developing skills in presenting information in multiple modes and in various media: web, paper, oral, and video. Applying delivery skills to emerging technologies.

The language shared in Table 8.2's column four was collectively composed by the ENGL 219 directors and the ENGL 219 instructors who attended the "listening session" workshops used to develop and refine the SLOs. The goal was to simplify the language in the STC's "nine areas" to make them reader-friendly to our audience: ENGL 219 students. In addition, we enhanced some of the categories to comply with our programmatic goals, such as to ensure that our beginning-level technical communicators are always mindful of, as we wrote in SLO 2 (Project Analysis), "a document's readers and a document's context relative to practices of composing for specific global, diverse, and multicultural audiences." The language for this SLO was considerably revised from the STC's original, and

this change conveys our programmatic—and eventual assessment-level—interest in a targeted cultivation of ethical and culturally situated understandings of audience needs among our students.

We also became concerned that our students and instructors might not be comfortable with a "large" number of SLOs. Of course, we did not have to map the STC's nine competencies one-for-one onto competencies in a redesigned curriculum for our MMPW course. But we did. Our rationale for using nine competencies was that a) our first-year composition (FYC) courses (which are prerequisites for our 200-level MMPW course) have six SLOs (one of which has four subcomponents), and thus students and instructors are familiar with both the scope and the approach of working toward competency in a broad range of skill areas, and b) for students using our MMPW course as an entrée into the TPC field, familiarization with the Foundation Exam's skill areas as written, we believed, was an advantage to them. While we do not have data on the number of students who come through our MMPW course who ultimately pursue this field or take the Foundation Exam years down the line, what we liked about the number of SLOs was its breadth and its flexibility and potential for subdivision across major projects in the course. We received no specific feedback from students (as recorded in their end-of-semester course reflections) about the number of SLOs being unwieldy or challenging to pace through. Our colleagues, whose expertise on SLOs would obviously exceed that of our students, felt that using the nine made sense relative to our desire to create an academy-to-industry through-line.

As Table 8.2 indicates, while the number of SLOs is substantial, we worked to streamline within that number to attend to the fact that our instructors believe that students find SLOs useful—to the degree that students ever find the articulated SLOs in their syllabi and throughout their courses useful—when the language of these SLOs is simple and concise. With simplicity and concision as our watchwords, we aimed to extract the key concepts from the STC's original articulation and re-create them in a user-friendly way for our students, adding, where necessary, concepts that resonated with the unique mission and principles of our program. SLO 2 explicitly reflects our desire to integrate social justice concerns into our learning objectives, while SLOs 7-9 add forthright language about communicating across different media and modes.

One final feature of our development of these SLOs was a Fall 2016 workshop with Rick Johnson-Sheehan, the author of our textbook, *Technical Communication Today*. At the workshop session, all instructors who were past, present, or future ENGL 219 instructors (we determine "future" status by including teaching assistants who were enrolled in our "Teaching Technical Communication" graduate-level practicum) worked with Johnson-Sheehan to connect concepts from the course textbook to the analytic and applied framework established by the new SLOs. Johnson-Sheehan also encouraged attendees to think of model assignments, which fit within the established "menu," that would support the new

edition of the textbook's focus on entrepreneurial thinking and related communication-skill development. Johnson-Sheehan expressed to workshop members that the new edition of *Technical Communication Today* already aligned with the STC's conceptual schema, and thus, our goal of creating a "through-line" was supported by our textbook's terminologies and overall perspective, vis-a-vis TPC workplace standards.

In Spring 2017, we launched the pilot semester of the new curriculum. At our mid-August mandatory Convocation for all teachers of ENGL 219, we shared a model syllabus, the assignment "menu," and one fully developed (scaffolded) sequence, which we called a "Job Materials Dossier." In the session, we described the two versions of our SLOs: those that were instructor- or profession-facing (in the original STC language) and those that were precisely designed for our students and our program (as shown in Table 8.2). We then worked through our sample sequence to explore how it attended to the skills highlighted by the news SLOs (the sample assignment sequence practiced three SLOs in particular) and how it could be deployed using specific textbook chapters. Since many of the instructors in attendance had already participated in the listening session in Fall 2016 and the workshop with Rick Johnson-Sheehan, they also manifested ownership over the whole curricular objective and were eager to share their own ideas regarding ways to integrate the new SLOs into adapted versions of their previous tried-and-true assignments. All new ENGL 219 sections would culminate in a multimodal electronic portfolio, featuring a comprehensive two-page reflective memo in which students would discuss their learning, with examples and evidence, of the course SLOs. For assessment purposes for AY 2017 (and for AY 2018), we chose to examine student engagement with SLOs 2 and 9.

We want to add one final note in this section regarding assessment (though we will turn to our assessment results below). We knew that we would need to determine how well, and if, our new SLOs were impacting our students' learning, through the measurement tool of their reflective writing across their entire portfolios and in their final memoranda, but we also knew we were required to assess students' engagement with university-level SLOs. Adding further complexity to the assessment framework already introduced in Table 8.1, UNM adopted all-campus (meaning the main campus and all regional branches, of which there are five) learning objectives for ENGL 219. We were to assess for these university-wide three SLOs and were "welcome" to assess for our own programmatic SLOs, which were the two we named above (2 and 9). In the following section concerning assessment, we will briefly discuss ENGL 219 program performance relative to both the university-wide, "all-campus," set of three SLOs and performance relative to our specifically designed new SLOs. Incidentally, as of Spring 2019 (when we are writing this chapter), we are no longer obligated to assess for the university-wide SLOs and thus, we only assess for our programmatically determined ones, which are the subject of this

chapter.

Evidence from Assessment

Determining the "effectiveness" of our new SLOs is a complex process. The concept of "effectiveness" operates at the intersection of multiple valences. Regarding our new SLOs, the first and most important question to us is this: does the new SLO structure function in our classrooms in a way that improves student learning? Without meeting a standard of usability and improvement (as in, our instructors find the SLOs easy to use/"teach to" and students engage with them "more meaningfully" than previous iterations), we cannot assert that any other measures of "effectiveness" matter. However, the measure of efficacy of student learning is not a zero-sum game. We may find that some measures are more effective than others, and we readily acknowledge that what we have proposed here probably fits somewhere on a continuum alongside other iterations of SLOs devised by other scholars and programs. Time will tell where our exercise truly fits in the company of others. Still, we believe what we measured here was specific enough to give us tangible (and in some ways, hereto unseen) ideas about the health of our courses that were instructive toward strengthening our program.

What we have identified as one "take-away" at the outset of this chapter concerns our evidence, thus far collected, that there is quantitative and qualitative data suggesting that our new SLOs are an improvement on our old SLOs in the realms of students' own articulations of learning relative to our two assessed SLOs (2 and 9; more on this below). Because our assessment hinges on a reading and scoring of a final course reflection memo as a leading feature of an online, multimodal portfolio, our assessment attempts to honor the portfolio and its reflection as a social ecology, to paraphrase Yancey (2018). We can definitely improve in this vein so that the portfolios we assess are not just a "set of finished projects fronted by a mandated argumentative text [the reflection] in which a student is required to claim in terms of outcomes that he or she has met those outcomes—even if she or he hasn't" (Yancey, 2018, p. 259). We believe that linking our assessment to industry practices adds a level of urgency for students as they realize they are not responding to arbitrary learning outcomes crafted by academics, but to skills that have salience and applicability in the next steps of their writing lives.

While it is beyond the scope of this article to deeply discuss the nuances of our assessment practice for our MMPW course, we do want to explain the rationale behind, and the limitations of, attempting to detect declines, stasis, or improvements in student learning by using an end-of-term, reflection-fronted, ePortfolio for assessment. In our study of our SLO revision and its potential effectiveness relative to detecting and measuring student learning, we did use the final reflections by students, as we agree that they make a "distinctive contribution" to the "learning showcased in, and the assessment of, electronic portfolios"

(Yancey, 2018, p. 269). In short, we believe that students' reflections gave us a clue into their metacognitive engagement with the principles that underlie the new SLOs.

Yet, we were not "just" assessing end-of-term, reflection-led portfolios as a measure of student learning; we were also interested in learning about how well, and whether, we were achieving more conspicuous alignment between our new SLOs and TPC scholarship that is interested in responding to industry (or larger "tech comm community") concerns. To this end, we think the redrawn SLOs are particularly suggestive of effectiveness. Students taking our courses are not only exposed to terms and values that are consistent with workplace expectations, but those terms become a part of how students understand the field. Supportive of this is the quantitative data we share below, which reveals interesting "learning" pathways drawn from the assessment data we collected over the past two years and suggests students' enmeshments with industry vocabularies and their deepened knowledge about the field.

The assessments from Fall 2017 and Fall 2018 each examined 22 portfolios that were collected across 22 different sections in each year.[1] All portfolios were reviewed by two readers and scored on a scale from 0-3 (with 0 being the lowest rating). Because our methodology for assessing ENGL 219 was inherited from practices used in first-year composition (FYC) assessment, the Likert scale in use (0, 1, 2, and 3) was a writing program fixture, in effect. As in the assessment of our ENGL 110 and 120 courses, our assessors (all of whom were experienced assessors who had participated in previous 110 and 120 assessment teams) used the scores "0" and "1" to indicated two varying degrees of "Needing Improvement" and the scores "2" and "3" to indicated two varying degrees of "Meeting Requirement."

Of course, ample literature exists to guide writing program and technical communication program administrators on shaping assessment practices, determining numerical scales, and designing reflection prompts for portfolio usage in a particular university context. The practices used in the assessment discussed here for the MMPW course in question descended from an FYC assessment overhaul in our program during 2011-2012, wherein the assessment protocol was informed by the work of Linda Adler-Kassner and Peggy O'Neill (2010), Bob Broad (2003), and Brian Huot (2002). Similar to strategies used at many other institutions, we elected to use rubrics for assessment that were table-driven for numerical value entry but were appended with "Summary Comments" sections. As Jane Detweiler and Maureen McBride (2009) have written, the numerical aspects allow "us to take our outcomes to administrators in terms they can identify with . . . and translate to their audiences as well" (pp. 64-65). Echoing Detweiler and McBride again, we found that numerical data allowed/allows us to show

1. There were in fact 26 sections of the course that ran in Fall 2017 and 31 that ran in Fall 2018. We were unable to perform an assessment of some of these sections due to issues such as file corruption or no portfolio being submitted.

that our "program appear[s] to be succeeding . . . so our external audiences could also point to how the program, a key part of the Core curriculum, appeared to be accomplishing some of the university's 'stated goals'" (p. 65). So, while numerical data delivered via a limited Likert scale, accompanied by narrative comments, allowed us to comply with our university's requirements, it also allowed us to detect measurable changes from year to year, which in this case we are correlating to student-learning changes resulting from a thoughtful SLO revision.

In terms of the "nuts and bolts" of our findings, then, we proceeded in the ENGL 219 assessment with a scheme wherein when readers were more than one point away from each other (say, one reader gives a score of 1 and another a score of 3 to the same portfolio), the portfolio would be reviewed by a third reader. All scores were then averaged to give us a picture of how students were generally achieving the SLOs of the course, curriculum wide. Tables 8.3 and 8.4 report on the revised SLOs 2 and 9; the former table defines the SLOs and the latter offers the year-to-year averaged results of this assessment.

Table 8.3. The SLOs, in our program-specific verbiage, assessed in the Fall 2017 and Fall 2018 sections of the MMPW course

SLO	Description
2	**Project Analysis**. Identifying a document's readers and a document's context relative to practices of composing for specific global, diverse, and multicultural audiences. Understanding how technical documents occupy and respond to social justice and community service contexts.
9	**Production and Delivery**. Developing skills in presenting information in multiple modes and in various media: web, paper, oral, and video. Applying delivery skills to emerging technologies.

Table 8.4. Average scores of rated portfolios for the redesigned SLOs

Year	SLO 2	SLO 9
2017	2.09	2.02
2018	2.28	2.45

These results appear to us quite dramatic. They represent a substantial improvement in both SLOs over the course of one year (an improvement of 9 percent for SLO 2 and 21 percent for SLO 9). While we cannot make generalized claims based off of just two years of data, this sort of data provides an interesting baseline from which we can assess in future years. Since the SLOs were new, we are not testing them against a similar SLO that could offer a figure from which we could draw a null hypothesis, so it would be inappropriate for us to offer a sense that the year-to-year change is statistically significant. This, it may seem, is one of the challenges of drastic innovation: data that reflects effectiveness needs to be collected over a long period of time to truly measure the impact of our

curricular interventions. This is perhaps doubly true when programs decide that learning-outcome infrastructure that was important in the past no longer serves pressing needs.

We will not include a discussion here of how the scores (and change in scores) in the redesigned STC-influenced SLOs compare to the UNM Core SLOs, as such a discussion would take us too far afield from the scope of this study. However, considering how widely general those SLOs were, it may be no surprise that the redesigned SLOs offered more precision through which we analyzed the health of the course. The emphases designed in both revised SLO 2 and 9 do not have easy corollaries to the SLOs described in Table 8.1. While one Core SLO discusses the importance of presenting material, it does not consider the importance of production across media, including using emerging technologies. None of the Core SLOs pay attention to the role of analyzing the ecology of a technical writing project, particularly in such a way that highlights social justice and community engagement contexts. We believe these newly revised SLOs do well to align with the emerging values and practices within both TPC scholarship and industry. Part of the rise in scores, we believe, is due to the fact that for the first time in the program these professional objectives were instantiated and given a position of privilege in the curriculum.

Naturally, one might wonder if what we are reading as "success" is due to the fact that we developed the new SLOs from the STC competencies, or if simply making more specific SLOs in the first place would have sufficed in creating a more effective curriculum. From our position, we cannot separate the specificity of the SLO from its professional inspiration. If nothing else, the professional currency offered by the STC competencies offered us a new prism through which we could reevaluate the SLOs. What is important to us now is that we were able to find a systematic way to integrate profession-connected expectations into the SLOs, thus making the work that students perform in class more responsive to TPC scholarship, writing studies research, and industry concerns. If effectiveness can be measured in terms of joining these three areas while keeping student learning at the center, our early research results suggest that we may have good reason to be optimistic about this approach to designing student learning outcomes for TPC courses.

Future work will discuss qualitative data (drawn from students' final portfolio reflections, which were the foundation for the rubric-driven scoring described above) that will add nuance to what we have briefly shared here, which figures as interesting statistical evidence of a program, via its foundation-level course moving, changing, and refining its curricular vision.

Conclusion: Pedagogical Challenges of and Justifications for Incorporating Industry

Standards Into Curriculum Design

Developing SLOs for a TPC course is tricky. While we concur with Read and Michaud's assertion that a professional writing course studies "professional writing" in terms of the "literacy practices of professionals-who-write in any of the diverse professional contexts of business, industry, government, and the nonprofit sector" (2015, p. 430), we also believe that some of the disciplinary concerns of TPC pedagogies lend themselves well to a more precise set of challenges than most other written composition courses. First, TPC has a robust theoretical heritage that often takes theories of rhetoric and compositions and rearticulates them with more precision toward professional contexts. One example of this is in the way the literature of TPC engages more robustly with user-centered design and usability—two concepts that relate well to rhetorical concerns about audience—than composition has (although both concepts are picking up more momentum in rhetoric and composition scholarship).

Second, students taking TPC courses are immersed in a more focused curricular environment than FYC students. It has been our experience that we rarely encounter TPC students who have not declared a major once they take one of the MMPW courses. Indeed, we know many students enroll in our MMPW courses to complete curricular requirements related to writing or some other general education outcome. While the same case is generally true for FYC courses, TPC courses tout themselves as relating to writing beyond the university. Our course bulletin description describes as much: "Practice in writing and editing of workplace documents, including correspondence, reports and proposals." TPC courses do not abandon important concepts in rhetoric and composition but should represent a rearticulation of them to a new and increasingly profession-oriented context. We wonder if the language of rhetoric and composition is truly the most effective way of imparting values about writing to students taking TPC courses in our SLOs.

The scholarship of outcomes statements that derive from the Council of Writing Program Administrators (CWPA) includes robust discussion within the FYC community for which it was designed and has been extended into TPC curricular design. Barry M. Maid (2004) takes care to adapt the CWPA outcomes into his technical communication course, taking advantage of the invitation of the Outcomes to adapt and adjust the document to meet new disciplinary needs. Maid remarks that he was surprised by how little he had to adjust the outcomes to address his own context. Indeed, he finds that the emphasis on having writers learn how to write from general principles about writing is instructive to TPC students, rather than something that is more focused. Rather than learning to write for a more precise genre or audience, students are instead guided to think of the general principles that underscore all effective writing, and, the thought is, that such awareness will transfer to new writing situations, even ones in professional contexts.

We share this enthusiasm and optimism for the effectiveness of the CWPA

outcomes, and we use our own locally adapted approach to these outcomes in our FYC courses. Moreover, the challenges we faced were similar to Maid's, as we too were working to kick off a new (perhaps better classified as "returning") minor and certificate in TPC. Like Maid, we also had to be cognizant of the ways our language would help define our discipline to potential certificate-pursuers and minors. For us, relying upon the language of compositionists might reflect a greater disposition toward the theory of writing rather than its practice. While we know that the two are both sides of the same coin, we did not know if we could articulate such nuance to students, especially the demographics we were targeting who were already majors in a different area with clearer professional trajectories. Likewise, we found ourselves in a similar position to K. Alex Ilyasova and Tracy Bridgeford (2016), who argue that drawing too much from composition "hinders efforts in the field to define technical communication, its theories, its practices, and its identity" (p. 54). As Bourelle, Bourelle, and Jones (2015) similarly adapted the SLOs for our companion courses' online sister from the classical rhetorical tradition, we wanted to experiment with another direction that would draw from the best theories in TPC. To do this, we moved away from the spaces where theory is most prominent and sought to orient ourselves toward practice.

Of course, our openness toward the practice(s) of technical and professional communication and the industries in which these outputs are represented meant we also had to resist the urge to mimic and rearticulate the blind spots in industry that may be driven by financial expedience. Our approach is fundamentally one rooted in humanism, respect for all persons, and the environments in which they dwell. Our approach intends to resist any racism, sexism, discrimination, or bigotry that has been codified in professional practice. We have found, through our program-specific adaptation of the STC's Foundational Exam competencies, that we are in the process of curricularly creating the through-line that we value and that benefits our students, a through-line that begins in first-year writing, gains potency and precision in 200-level MMPWs, and prepares students for their future profession. We hope that our SLOs' increased attention (as our new versions of SLOs 2 and 9 reveal) to social justice issues and ethical obligations in communication-creation allows us to better prepare our students to best serve diverse users and audiences in their university educations and in industry scenarios in future years.

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