The Wicked Problems of Lean Technical Communication: A Case for Design Thinking in Curriculum and Programming

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Abstract. In this article, the author demonstrates how bringing together the critical frameworks of design thinking and lean technical communication can help meet diverse stakeholder values and promote technical communication curriculum within an institutional context. Specifically, outlined within is one faculty member's attempt to create a socially just technical communication curriculum that exists entirely within an asynchronous and accelerated online format. This article leans on how the empathetic capacities of design thinking and the value of sustainability inherent in lean technical communication come together to forefront equity and inclusion in course design, for student populations who need to be able to access their education more flexibly. At the same time, it is important to recognize that curriculum must be attuned to the needs of faculty as well, and that educators (particularly contingent labor) are not asked to complete unfair or disproportionately difficult pedagogical tasks. This framework points to methods for how administrators can use design thinking to outline various stakeholder needs and draw connections between institutional values and programmatic needs, to create an equitable and inclusive online curriculum that best serves students.
Keywords: design thinking, lean technical communication, online writing instruction

Introduction

Wicked problems are everywhere. Problems with no obvious solutions, whose solutions beget ever more problems, and for which different stakeholders see radically different outcomes as win-states, are in a lot of ways endemic to modern (networked, always-on, constantly surveilled) life. Designers have long done the work of trying to tackle wicked problems (as they were first identified by Horst Rittel and Melvin Webber in 1973) to solve problems for businesses, governments, and communities. As the work of design and its attendant methodology design thinking has grown in popularity, it can also be seen taking a place in classrooms, where students learn about how to engage in the steps of design thinking as their first inroads to being critically competent designers themselves. But in designing those educational experiences where students work as technical communicators and designers, wicked problems lie in wait for the educator.

Simply put, as the landscape of higher education shifts, teachers and program administrators must shift with it, to meet the ever-evolving needs of student populations. One such population is the growing number of students seeking entirely online college degrees – according to data from the National Center for Education Statistics, around twenty percent of the undergraduate students at both public and private non-profit four-year institutions were seeking distance education in Fall of 2021, not to mention the popularity of private for-profit online colleges such as the University of Phoenix, which had just under seventy thousand students enrolled in 2021. Online education is a growing necessity for students who are unable to attend college in the traditional way, whether due to working full-time, health and disability issues, or prohibitive geographical proximity to a campus with the appropriate degree program. Online education is, in these ways, an important tool for universities to provide accessible and equitable education to a body of students who could not receive a college degree otherwise, and Technical and Professional Communication (TPC) programs are among the many degrees that are being asked by university administration to make the leap to online instruction.

Said leap, obviously, brings with it several wicked problems that it is the responsibility of TPC program administrators to mitigate. In trying to craft curriculum that engages students and leads to deep learning, admin must balance the disparate and sometimes contradictory needs of many different stakeholders: students who expect and require a flexible course they can fit into their schedules, faculty both tenure-stream and contingent who may not be trained in online

writing instruction, and university administration who care about programmatic success metrics like retention and graduation while wanting to keep operating costs as low as possible. How can TPC administrators balance these concerns while creating programs that lead to positive learning outcomes?

The solution, I believe, lies in the intersection of two frameworks that utilize thinking through issues with the goal of empathetic, realistic solutions. Design Thinking, if educators harness its empathetic capacities in a socially aware and responsive way, can help solve the wicked problems of TPC program administration. Specifically, I believe thinking about Lean Technical Communication (as put forward by Johnson et al. in 2018) helps us naturally engage with these empathetic ideals, and that online writing instruction (OWI) is a way to create the accessible and equitable programming required for modern university purposes.

This project is guided by the central research question, "How can we utilize the two lenses of Design Thinking and Lean Technical Communication to create accessible curriculum that meets student needs and provides deep learning, while working realistically within the programmatic constraints of budget and faculty/staff labor provided by university administration?" The rest of this piece contextualizes a specific site, the southern regional comprehensive university where the author works, and the work going on at that institution to create an online TPC curriculum that addresses student, programmatic, and administrative needs while fostering a positive learning environment and leading to successful retention and graduation rates. The next section situates the problem more clearly with the theory of design and technical communication and then introduces three exemplars that demonstrate how the combination of Design Thinking and Lean Technical Communication work on the wicked problems of OWI.

Situating Design and Wicked Problems in TPC and OWI

Design, broadly speaking, is well-known for having wicked problems, as outlined by Richard Buchanan in his 1992 article "Wicked Problems in Design Thinking." Going back further in his bibliography, Buchanan also makes the argument in 1985's "Declaration by Design" that design is a fundamentally rhetorical endeavor, and that designs ultimately produce and intervene in arguments about values, further solidifying the connections between technical communication's composed artifacts and design thinking. Only a few years later in 1989, Charles Kostelnick would make a similar argument in *College Composition and Communication*, arguing that "as a medium for creativity and com-

munication, design is the natural counterpart to writing, one adapting visual, the other verbal, language to diverse contexts and audiences" (267). So, there seems a natural and perhaps long overdue series of connections to make between design thinking and technical communication, which scholars (more thoroughly outlined by Tham) are now beginning to attempt doing, along with the work of this special issue.

For this piece, I'm leaning on the description of the design thinking process described in Jason Tham's book, which contains five steps: Empathize, Define, Ideate, Prototype, Test (2021). While all the steps are key to implementing the methodology, it is within the first step, Empathize, that I see the greatest potential for equitable directions in online TPC curriculum. Without an empathetic understanding of the needs and positionality of the end users of a course (thinking here broadly both about students and about faculty who may be asked to teach a master course), it is likely that the course will be designed in unequitable, inaccessible, and subsequently ineffective ways.

But end users are not the only stakeholders who online TPC curriculum designers need to consider – there are also groups who I have termed "facilitators," both early and mid-stage, who must approve of the curriculum before it reaches its final audiences. These two facilitating groups are the university Instructional Designers (a mid-stage facilitator who helps build the curriculum to certain quality specifications) and University Administration (an early-stage facilitator who must approve the creation of new online programs). Being empathetic toward the needs of these stakeholders requires a vastly different set of sensibilities to producing equitable and empathetic products for end users, and being aware of the constraints that these facilitators can place on the implementation of final solutions may help lead designers into more sustainable and efficient ideation instead of becoming lost in unrealistic idealization.

It is exactly this lack of understanding of real-world constraints and an exclusive focus on the end user, as opposed to other relevant stakeholders, that leads some to criticize design thinking as unrealistic, caught up in corporatized buzzwords, and ultimately unhelpful. Rebecca Ackerman, writing for the *MIT Technology Review* (2023), and Sebastian Loewe in his 2019 article in *Dialectic* both assert that the flattened nature of the early steps in the design thinking process, empathizing and ideation, lead to designs that are ultimately unusable for the organizations that are supposed to implement them, whether because the solutions ignore factors of cost, labor, or any of another number of pragmatic limitations that were not considered during design because the designers neglected to factor in audiences beyond the end user.

As Ackerman puts it, "we are all creatives, design thinking promised, and we can solve any problem if we empathize hard enough" (2023). By assuming that the organizations who contract design firms have nothing of value to contribute to the design process (or they would have solved the problem themselves), design thinking can easily lead to solutions that will never make it off the wall of Post-Its that have become symbolic of modern design. While no framework is ever perfect on its own, the programmatic lens through which *Lean Technical Communication* proposes to view solving its problems can help fill in some of these gaps for design thinkers, who would otherwise perhaps design curriculum that the university would be unable or unwilling to implement.

Further, the tenets of design thinking as they tend to be implemented by corporate firms work not only to disenfranchise relevant stakeholders for the problem at hand, but also to reify and re-instantiate white western thinkers (as the heralds and "mystics" capable of design thinking) as being more capable and thus still at the apex of the global labor market, over the working populations in other parts of the world, particularly in Asia. Lilly Irani claims in her 2018 article that design thinking firmly keeps white western hegemony in power over global labor hierarchies by presenting an openly racialized theory of design judgment, wherein nonwhite labor is less capable of making higher-order design decisions. While the capacities of design thinking in education have a somewhat different context than their corporate counterparts, it is nonetheless important to point out that design thinking can be and has been leveraged in service of preserving white western hegemony, and thus that it is incumbent upon us to strive for equitable applications of design thinking in both our curriculum and in the ways we teach it to students.

Technical Communication is a field that many other disciplines rely on to teach their students certain writing skills, and thus place upon TPC certain expectations. These expectations are not always rhetorically or ethically sound – as Steven Katz aptly and chillingly points out in his article "The Ethic of Expediency: Classical Rhetoric, Technology, and the Holocaust," the expectation that TPC privilege the concepts of rationality and efficiency can have devastating consequences for the humans impacted by that communication (1992). Thus, it is in a lot of ways incumbent upon TPC faculty to push back against these expectations, and to educate our students in a more humanistic tradition, as Carolyn Miller asserts (1979). But even as we acknowledge the inherent issues with largely white western hegemonic theories of TPC and expand outward into considering Indigenous practices (Agboka 2018)

and Black Feminist Thought (Moore 2018) among other approaches, the practices of our curriculum often still need to catch up to the theory we discuss with our students. TPC has always needed to more closely consider the equity impacts of its products, but in order to bear just fruit, we must plant just trees, so the design of our courses needs to practice the ethical design philosophies we preach.

Though this piece is already somewhat awash in frameworks and lenses, it is important that there is a way through which the examples in this piece can be examined for equity and access, to determine how socially just these solutions truly are. In their book *Technical Communication after the Social Justice Turn: Building Coalitions for Action*, Rebecca Walton, Kristen Moore, and Natasha Jones structure their thinking around the "three Ps": Positionality, Privilege, and Power (2019). By considering the positionality (ie, how social and political contexts shape identity) and privilege (how much those identities are included or excluded by larger society) of both designers and stakeholders, it is possible to come to an intersectional understanding of the relative power dynamics of a given design scenario. By being cognizant of the imaginative limitations of privileged positionalities and knowing that it is important to listen and form coalitions with those of different positionalities, the work of design can begin to untangle itself from the racialized labor hierarchy that Irani points out and move in equitable and just directions.

Enter *Lean Technical Communication: Toward Sustainable Program Innovation*, a 2018 text by Meredith A. Johnson, W. Michele Simmons, and Patricia Sullivan. In this book, the authors lay out a framework by which TPC curriculum and programming can meet the needs of both end-user and facilitator stakeholders, through adhering to practices of equitable efficiency, low-cost solutions, asset-based inquiry, and sustainability. While this book is not explicitly laid out in terms of design thinking, I see within Lean TPC much of the same emphasis on empathy and ideation that typifies design thinking projects. By bringing the two into direct conversation, I hope to draw out more of the pragmatic possibilities of both, through thinking of wicked problems as both granular/user-centered and high-level/programmatic somewhat simultaneously. In the next section, I will discuss some of the objectives of Lean TPC in greater detail, to show how the design language of empathy can enhance a lean framework – specifically, the accelerated asynchronous TPC model I have been tasked with creating at my institution.

Now to the context of the site of study. I work at a southern regional comprehensive university, which recently became a minority-

serving institution, with just over half of the student body identifying as a racial/ethnic minority. The university population comprises in large part of previously underserved students from inner-city and rural populations. The most recent version of the Strategic Plan for the university outlines expansion across two curricular fronts: Experiential Learning and Online Degree Programs. The university requires for graduation that students take a course that has been officially endorsed as having Experiential Learning components, and the recently launched entirely online college (marketed specifically as being about career advancement) has seen unexpected and exponential growth in its first few years. The university is thus deeply motivated to further expand its online degree programs, and to make sure that more courses are endorsed for Experiential Learning. Technical Communication, having clear ties to professional advancement in many fields, is a natural selection for inclusion in the online college expansion.

For the next section, I will bring in two examples of online technical communication curriculum design that are in the early stages of creation and development at my institution, and I will demonstrate how using the paired frameworks of design thinking and lean technical communication brought me to my current place in the design process. While some of the things in the next section will be necessarily involved with the context of my specific institution and thus may not be entirely universalizable, examining these ideas through broader goals accepted among many TPC programs can lead to fruitful insight into how TPC can engage with OWI in equitable and accessible ways. These three examples of curriculum design—accelerated course master shells, experiential learning opportunities, and collaborative assignments—were all thought to be incredibly important to build into an online TPC program so as to achieve particular learning outcomes. The courses in the program are all being designed to focus on real-world audience awareness (both as a facet of empathetic design thinking and more broadly) and flexibility in genre, so that students can respond critically and effectively to problems without sterile well-defined parameters, such as those they will encounter in the workforce. Through these pedagogical tools, this curriculum seeks to create students as technical communicators who can think beyond the abstracted core goals of a writing task (i.e., "I need a document that contains this content") and bring in human considerations, such as circulation of documents, readability, and propriety of form and language use.

Design Thinking and Lean Technical Communication as Working Lenses

Accelerated Master Shells

The concept of a master shell, or a single pre-planned curriculum that all teachers assigned to a particular online class must follow exactly, has been around for quite some time in OWI, and with it comes a fair amount of valid criticism. As Rochelle Rodrigo and Cristina D. Ramirez point in their article on curricular and professional development in *Technical Communication Quarterly*, many teachers view master shells as template or "canned" courses, and see their involvement in the learning process as only about "making announcements and grading work" since the course content has been pre-determined (317). However, as Rodrigo and Ramirez point out, master courses also allow for the university to norm learning outcomes in classes where a large number of teaching faculty are novice, contingent, or both (317). This also allows for the university to not waste the labor of the instructional design team by not reusing online course structures that staff helped implement. Ultimately, for all of the potentially valid philosophical disagreements with the concept, master shells are a reality in the online teaching landscape. For my particular institution, there is the added expectation that all online coursework be in an accelerated format—taking up only eight weeks of time instead of a full sixteen-week semester. This is seen as allowing working students to move through their degrees more quickly, but comes bearing issues of course pacing—how much content can reasonably be contained in eight weeks? How can we make an eight-week course commensurate with a sixteen-week course, with the knowledge that students do not have an excess of time to devote to the course?

Using the empathetic capacities of Design Thinking, TPC administration can think through how the format of an accelerated master shell serves the needs of students, who require a flexible education that they can complete on their own time, and who also likely value heavily regulated learning management system (LMS) shells so they don't have to re-learn how to navigate every course they take, while respecting the valid concerns instructional faculty have with potentially losing agency over the curriculum they teach. Aside from entering into discussions with these two groups of stakeholders to learn what they value or do not value from an accelerated course, TPC administrators should forge relationships with the Instructional Design staff at their institution, so that they have a sense of what is feasible during curricu-

lum design. Having faculty take part in the design of master shells, and having faculty and instructional designers work together at all stages of the curriculum design process, can help with faculty buy-in and decrease anxiety over the existence of the master shells.

In terms of Lean Technical Communication a master shell meets three of Johnson et al.'s criteria: regulating cost, engaging in sustainability, and promoting efficiency (2018). Firstly, lean TPC must take advantage of "lean media" in order to keep costs down for all stakeholders (Johnson et al 23). While this seems on the surface to be a noble goal (Open Educational Resources eliminate pricy textbook purchases for students), and in many ways contributes to equity, the context of online teaching with master courses can present an insidious layer to considerations of costs. The harsh reality is that these courses, once built, are very inexpensive to teach, since they can be given to contingent faculty who do not have any training in TPC or OWI. This means that universities do not have to maintain a staff of trained experts with terminal degrees in the field and can cut costs substantially in terms of personnel. This obviously creates a series of conflicting values between administration, who appreciate the opportunity for low overhead cost, and faculty, who do not want to be taken advantage of (as contingent faculty so often are) as the market for tenure-track placements shrinks ever narrower. Thus, thinking about cost regulation cannot be a flat consideration, with all money saved as being equally positive, and TPC administrators must advocate for training for their teaching faculty even as administration sees avenues to further reduce instructional budget lines.

Johnson et al. view sustainability as a goal of lean TPC in that it should serve as an "impetus for innovation" (26). While sustainability is often rightly associated with material and environmental concerns, the sustainability of labor practices and institutional/programmatic solvency in terms of curriculum implementation is also important to consider. Existing on an entirely virtual platform and using OER means that there is relatively little material waste associated with the course, and that its environmental footprint is tied to the impact of the power grids from which both the university and the individual student access the LMS.

For all of their problems, master courses give TPC programs an inherent institutional memory that is less impacted by changes in faculty andprovides stability in the face of resignations or high faculty turnover. Even changes in low-level administration such as program coordinators would not necessarily disrupt course offerings until a replacement is found. Empathetically, this maps to something of value to

administration but also instructors, since the decreased labor of master courses is what promotes this institutional sustainability.

Specific to my institution, the accelerated eight-week format dictates a need for efficiency in content delivery and precise assignment creation—things need to assess exactly what the asynchronous content has taught (since many students will never directly interact with their professor to get additional context or clarification), and assignments need to be reasonable for the scope of the course, while remaining rigorous enough to justify the course's designation as upper-division, for example. Creating assignments that fit easily within the scope of an eight-week writing-intensive course (such as most TPC offerings) can be difficult—assignments that in a traditional in-person classroom would constitute a midterm or major milestone assignment have to be condensed into a period of one or two weeks, maximum. This speaks to the broader concern for efficiency in lean TPC, where content and curriculum are both streamlined as a means of decreasing redundant labor and expense, which is of value to all stakeholders.

Here we can see that providing a heavily regulated and normalized experience for students upholds the value of efficiency for all of the groups on our empathy table. The normalized course shells ostensibly provide a uniform experience for students across the degree, which hopefully leads to greater success and retention, pleasing administration. The fact that there is little to no lesson-planning or curriculum design after the initial course build also promotes efficiency of labor for both faculty and instructional designers.

This is one of the places where—thinking empathetically about all of the stakeholders—the lean framework feels least comfortable—.The issues with accelerated coursework and master shells in upper-division writing-intensive courses are many, and in some ways bowing to the need for efficiency further complicates our efforts at equity—. Is a class truly more accessible and inclusive when the timeline and structure make success difficult due to rapid deadlines for major composition projects? This is the tenet I believe I will have to think about most carefully as I work through curriculum development further.

Experiential Learning Opportunities
Experiential learning—or learning in which students work with real-world problems and audiences that exist externally to the classroom—is a common tool in TPC classrooms, since it has been shown to help with student engagement, comprehension, and retention of learning (Kolb). However, building experiential learning into an online classroom, particularly an asynchronous one, has challenges largely based

on how students expect to engage with the course and what can be reasonably required of them in this format. Once again leveraging the empathetic capacities of design thinking, TPC administrators can design experiential learning opportunities that are sensitive to student needs while opening up the opportunity for rich learning.

The third tenet of Lean Technical Communication is that it needs to be "rooted in local needs and aims for social responsibility" (21). For Johnson et al., lean TPC needs to be designed through an understanding of "the unique needs of those served" and should "provid[e] affordable essentials" while not "oppressing vulnerable populations" such as staff, graduate students, and contingent faculty (21). The value of social responsibility and beyond that, social justice, must run through our curriculum at all levels, so as not to inadvertently reify institutional power imbalances and inequities. Experiential learning is thus a natural way to foster this tenet, since it gives students the power to effect socially just change in their communities through their work with community partners and become generally more literate civic citizens. But if administrators do not remain aware of the needs and limitations of students in an asynchronous online environment, they are likely to design an unsuccessful Experiential Learning opportunity.

The primary need of students in asynchronous online courses is flexibility to accommodate work schedules and family obligations. Students who opt for fully online degrees are often already working full-time and may have dependents who require care, which makes a traditional classroom with meeting times in the middle of the day unworkable. These students will likely be completing the majority of their coursework in the evenings or on weekends and so will also need flexibility in terms of when content is released to the course (although there are definite issues with letting students work too far ahead), deadlines (having something due on a weeknight often puts working students at a disadvantage), and when the instructor is available to talk (working students are often unable to meet even virtually during traditional workday office hours). The technological proficiency and learning readiness of nontraditional populations must also be considered. Students who have been out of the educational system for a decade or more may need some refreshing on writing skills more generally and may not be comfortable using technology such as an LMS. Even students who choose to complete an entirely online degree cannot be assumed to have a certain level of technological competency, since the choice of an online degree is often the only possible choice, not one selected due to pure preference.

What all of this means is that expecting students to work syn-

chronously with community partners may be unrealistic in an accelerated asynchronous classroom format. This tends to be a stumbling block in experiential learning even in traditional classrooms, since the schedules of community partners may be at odds with the classroom timeline. The community partners may also not be well-versed in how to train novices such as students, which may lead to some issues with feedback and communication, such as students seeing their work returned with harsh and unexpected criticism (Grobman).

To circumvent many of these issues, at my institution we are currently in the early design phases of a slightly different model of experiential learning. Since we cannot expect asynchronous students to meet with a predetermined community partner in a synchronous fashion, this model has students doing independent research into their communities, finding a nonprofit organization, and then practicing crafting documents such as white papers or public-facing advocacy genres for that organization within the scope of the classroom. Students then are given the choice to contact the organization they selected to share their ideas and potentially receive feedback on their documents from their intended audience. It is our hope that from this self-directed model, students will be able to work with their partners on their schedule and empathize with their own set of stakeholders, thus enacting design thinking themselves.

The final tenet of lean Technical Communication is that the program needs to enhance its visibility, to make its worth apparent to all relevant stakeholders (30). Experiential learning is thus incredibly valuable to a lean framework, since it attempts to provide value not just within the university (i.e., for students) but beyond the university and out into the community. This type of visibility will help the program at multiple levels—the positive relationship building within the community will be viewed favorably by university administration, and programmatic visibility in the community will help draw students into our classes.

Conclusions/Next Steps

As can be seen from the previous section, the institutional work shown here as an example is very much still in progress, with ideas that may very well prove difficult or even impossible to utilize as the program moves further into implementation and iteration of curriculum. What this piece is intended to do, then, is not to present design thinking or Lean Technical Communication as any form of panacea, or to elide the very real criticism of design thinking as limited in the scope of its

solutions. Rather, this is meant to present a particular way of thinking about these sorts of problems that is both similar to the ways technical communicators trained in design thinking naturally approach problems, while also mitigating some of design thinking's more idealistic tendencies with the pragmatism inherent in Lean Technical Communication. In working personally at the intersections of these two frameworks, I feel as though I have gotten to experience the advantages of both while their relative pitfalls have been lessened by the presence of both strategies at once—while it is still an imperfect system, the gaps of each can be (in some ways) filled by the other.

This is not to say that this piece has in any way solved the issues inherent in OWI for TPC. It has, in fact, not even begun to touch larger philosophical concerns about the overall quality of an online educational experience that leads some teacher-scholars into valid skepticism of the entire endeavor. But I still believe firmly in the mission of OWI, for the simple reason that I have to believe in these ideas because they have to work. As contradictory to design thinking as that might sound, if we write off OWI as somehow inherently lesser and decline to move programs online due to fear of lowering standards or achieving fewer outcomes, we are consigning a whole population to never receive any sort of college education. It isonly if we begin our work from the premise that there is, somehow, a way to achieve OWI that is commensurate to traditional college education that we can do the work in a way that is not a disservice to the students who require distance learning. In the interest of access and in the service of equity, we have to continually try to address this wicked problem.

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