Introduction

The State of UX in Technical and Professional Communication: Courses, Programs, and Jobs

As the technical and professional communication (TPC) field has evolved in response to broader changes in the world economy, numerous professions have arisen within its ranks that coexist with the traditional roles of technical writer and technical editor. These include instructional design, content strategy, and user-experience (UX) design [1], [2]. A unique challenge for TPC is to include training in numerous professions within a single college major or program. Some programs have chosen to focus on specific professions, even going so far as to rename their program around that profession. Others have continued to focus broadly on the overall field while updating their curricula as needed to serve students seeking training in a particular career path.

Arguably the most popular recent profession that many programs have rallied around, UX also brings with it a strong overlap with historically taught TPC job skills and competencies, such as usability, user research, and cross-functional teamwork [3], [4]. At the same time, UX has proven to be a fast-moving profession in its own right with a dizzying array of unique skill sets, such as user-interface design, prototyping, journey mapping, and information architecture [3], [4], [5]. Although some TPC programs already include individual courses, certificates, majors, and even master's degrees in UX, as a field, we have not documented the growth of UX as a major emphasis within TPC nor have we continued to document the skills requested by modern employers for UX jobs.

Some things remain constant in UX however. The central term for UX work beyond the classroom has remained stable, that is, the UX Process or UX Lifecycle, which can be defined as the sum of activities that need to occur to ensure a high-quality experience for users during the design of a digital product or service. What can be described above as a linear process is often recursive and iterative. An organization's goals for a specific product often change during the development cycle. Customers for a product sometimes reject the first prototype for it, leaving the organization to find a new user base.

Another factor affecting UX is that we have more digital products than ever before, meaning that we have more types of users and more contexts of use than ever before. As a result, each use case is harder to predict than it previously was. One would think that organizations would respond to this lack of predictability with more user research, but that does not always happen. At the end of the day, every organization has a bottom line and needs to bring each product to market under certain conditions. This limits how much each product can be tailored to users, meaning that there will still be lots of digital applications that fail their users.

In other words, the fallibility of the UX process is intimately tied to effective communication. Designers need to communicate their goals to users and need to understand what users want. They need to balance organizational expectations with user needs. This balancing act that relies on communication is one possible reason why TPC scholars have shown increasing interest in UX. This interest has taken several forms, including pedagogical [5], [6], [7]; methodological [7], [8], [9], [10], [11]; observational [8], [10], [11], [12]; and disciplinary [1], [2], [3], [4], [5], [13], [14]. This scholarship is too complex to neatly summarize, but we can draw some boundaries:

- The fields of UX and TPC are united around graduates of our programs, many of whom go into positions in UX or use UX skills in their occupations.
- Stand-alone UX programs do exist in academia, although they are still relatively rare. At the same time, many TPC programs include courses, course sequences, and certificates in UX.
- The above trends necessitate that TPC scholars create new pedagogical approaches and develop new programs that can effectively teach and

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guide our graduates into UX if they chose it as a career path.
- We must tie these results to developments in industry, including any on-the-job training that new UX designers will receive.

As happens with many special issues, when we developed our Call for Papers for the IEEE TRANSACTIONS ON PROFESSIONAL COMMUNICATION on the topic of "The State of UX in TPC: Courses, Credentials, Programs," we had no way of knowing what kind of proposals we would receive. Would we receive research articles on the overall scope of the field of UX and its relationship to TPC? Would we receive case studies of specific programs and how they have integrated UX? Would we receive pedagogical pieces on how to teach UX? Or would we receive literature reviews on specific aspects of UX?

We were pleasantly surprised to receive a wide array of articles from many different perspectives. Below, we introduce each of the six articles that were selected for final publication.

We begin our Special Issue with [A1], "The State of UX Pedagogy" by Philip B. Gallagher and Guiseppe Getto. Gallagher and Getto's integrated literature review explores the last 20 years of teaching UX to define UX pedagogy and uncover the state of pedagogical approaches to teaching UX in technical communication and adjacent fields. Narrowing their focus to 76 journal and conference proceedings articles on UX pedagogy, the authors make sense of varying definitions across multiple fields and identify six major subthemes related to UX pedagogy. Gallagher and Getto acknowledge the difficulties of defining a highly divergent, emergent discipline, such as UX, and offer some clarifying questions on how to focus our efforts on student needs.

Next, we continue with "Longitudinal Study of Usability and User Experience in Technical and Professional Communication Research" by Erin Friess and Christina Liles [A2]. Friess and Liles bring us a compelling article on the state of UX as a research topic within the broader field. There has been a considerable push for scholars to add literature on UX to TPC research, which has traditionally focused on broader issues of communication, such as audience, situation, context, workplace scenarios, and specific genres. Friess and Liles dig into the past 26 years of research, a corpus of 2748 articles, and find that, although obviously intertwined with our field's identity, UX is not a major focus of recent scholarship (accounting for less than 8% of the total). This meta-analysis provides not only an incisive critique of claims that UX is a central part of our research as a field, but also a variety of opportunities for rethinking the place of UX in our scholarship considering these findings.

In [A3], we have "Finding the Gap: A Comparison of UX Industry Practices and UX Course Outcomes in Technical and Professional Communication Programs" by Samantha Cosgrove. Cosgrove's article analyzes UX job advertisements to understand what specific qualifications are essential for applicants while comparing those qualifications to specific UX outcomes that are present within current TPC programs. Focusing her analysis on 96 job advertisements, the author develops nine categories of UX qualifications to compare with 10 TPC programs. Cosgrove illuminates some of the discrepancies between industry qualifications and course outcomes, and presents approaches for programs to align more with industry expectations.

In [A4], we have "What Can Technical and Professional Communication Do for UX Education: A Case Study of a User Experience Graduate Certificate" by Quan Zhou and Zarah Boeggenberg. Zhou and Boeggenberg present a case study of a UX graduate certificate they developed at their home institution. As they point out, although UX education programs have sprung up around the country, there have been very few efforts to assess the effectiveness of these programs. Through semistructured interviews with past graduates of their program, this case study indicates that a short-term, asynchronous certificate program can be effective for training UX professionals. As the authors also indicate, however, new research is required if TPC is to claim that UX directly benefits learners who wish to advance their careers.

In [A5], we have "Fostering Advocacy, Developing Empathetic UX Bricoleurs: Ongoing Programmatic Assessment and Responsive Curriculum Design" by Scott J. Kowalewski and William J. Williamson. Kowalewski and Williamson's article highlights their decade-long efforts to redesign a TPC major and launch a UX design minor at a regional teaching-focused university. This teaching case emphasizes how the authors developed TPC curricula to prepare students for the demands of UX design work. Kowalewski and Williamson situate their case as a call to action:

> Our programmatic identity began to shift toward a designer mindset that embraced three core frames for professional action—information design, problem solving, and civic engagement—and three complementary design tenets—empathy, advocacy, and bricolage.

This article presents data from their program assessment efforts to revise curricula for more empathy-driven pedagogy and offers a unique framework to develop programs that solve complex problems.

In [A6], we have "Toward Integrated UX Instruction with Symbiotic Classrooms" by Kylie Jacobsen and Danielle DeVasto. Jacobsen and DeVasto feature the importance of symbiotic class relationships when teaching UX in professional writing programs. Their teaching case emphasizes the need

> to introduce students to UX early in their program of study and apply additional or nuanced UX methods in several writing courses as they progress through the program.

Examining students' usability test plans, usability reports, and reflection essays, Jacobsen and DeVasto identify alignment between students' goals and UX research, and reveal an effective reciprocal model for professional writing courses to incorporate UX strategies into their writing processes.

Ultimately, our Special Issue contributes a wealth of new research, best practices, and paths forward for work at the intersection of UX and TPC. But there is still much work to be done. In particular, we would like to recommend the following potential pathways for this conversation.

1. New research that attempts to articulate what technical communicators of all stripes can contribute to UX
2. New pedagogical research that identifies best practices for teaching UX at the single assignment, single course, and multicourse levels
3. Additional case studies and even large-scale research studies that attempt to validate the findings of efforts to convert specific courses, programs, and credentials to a UX focus
4. Additional research on job growth in UX, particularly research that highlights the voices of hiring managers in UX and what they are looking for in new employees

These are just some of the possible directions that this work could follow.

We are heartened by and very thankful for the exciting and innovative scholarship that we received for this special issue. At the same time, we are wary of the findings of Friess and Liles. If we are to truly claim that UX is a central concern for TPC, then we need much more work in this area, work that solidifies the connections that many of us see between these sister disciplines.

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APPENDIX
RELATED ARTICLES

[A1] P. B. Gallagher and G. Getto "The state of UX pedagogy," *IEEE Trans. Prof. Commun.*, vol. 66, no. 4. Dec. 2023.
[A2] E. Friess and C. Liles, "Longitudinal study of usability and user experience in technical and professional communication research," *IEEE Trans. Prof. Commun.*, vol. 66, no. 4. Dec. 2023.
[A3] C. Cosgrove, "Finding the gap: A comparison of UX industry practices and UX course outcomes in technical and professional communication programs," *IEEE Trans. Prof. Commun.*, vol. 66, no. 4. Dec. 2023.

[A4] Q. Zhou and Z. Boeggenberg, "What can technical and professional communication do for UX education: A case study of a user experience graduate certificate," *IEEE Trans. Prof. Commun.*, vol. 66, no. 4. Dec. 2023.
[A5] S. J. Kowalewski and W. J. Williamson. "Fostering advocacy, developing empathetic UX bricoleurs: Ongoing programmatic assessment and responsive curriculum design" *IEEE Trans. Prof. Commun.*, vol. 66, no. 4. Dec. 2023.
[A6] K. Jacobsen and D. DeVasto "Toward integrated UX instruction with symbiotic classrooms," *IEEE Trans. Prof. Commun.*, vol. 66, no. 4. Dec. 2023.

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