

Scholarly Borders and Meaning Making: Uncovering the Research Practice and Decision Making Process of an Integrative Literature Review

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Abstract - This entry details the processes and decisions involved in the research practice connected to the literature review. With a specific audience of graduate students, early career scholars and those who are entering TPC from other related fields (e.g., composition, user experience), we focus on three specific areas related to the literature review: expanding researcher positionality; considering methodology; and selecting literature for inclusion. The meaning making and scholarly borders decisions are further streamlined in the move from conceptual, methodological, and theoretical considerations to those of the actual practice and process of research. Since the goal of this paper is on the process of finding literature and making rhetorical choices, we end with a discussion of demystifying the integrative literature review process with two important implications for doing a literature review.

Index Terms - Empirical research, literature review, online learning, research study design.

At ProComm in 2011, Ramey and Rao called for more systematic reviews in technical and professional communication (TPC). Systematic reviews are used to synthesize findings from quantitative studies and are found in disciplines such as medicine. The term, meta-synthesis, is often used for qualitative research because it attempts “an interpretive, rather than aggregating, intent, in contrast to meta-analysis of quantitative studies” [1]. In addition to these systematic and meta-synthesis reviews, there are other types of approaches to conduct research on research. In TPC, one approach that has received increased attention is the integrative literature review.

During the same 2011 conference, Carliner gave a workshop on conducting integrative literature reviews as a way to provide practical support to Ramey and Rao’s call. Integrative literature reviews entered TPC from other disciplines. As one study [2] explained, “most integrative

literature reviews are intended to address two general kinds of topics—mature topics or new, emerging topics” (p. 357). In a field such as TPC, with diverse and far reaching topics of research, the integrative literature offers a benchmark no matter if the topic is mature or emerging. Scholars [3] have created a taxonomy of research questions in TPC; one category is description questions, which “ask[s] what is already known” (n.p.) about a specific topic. They use integrative literature reviews as an example of research that is guided by description questions. The primary strength of an integrative literature review is that it provides deep insights into a specific topic area and makes calls to advance research in that topic area. An integrative literature review provides valuable information for the field because it works to assemble “representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated” (p. 356) [2].

TPC has a small corpus of integrative literature reviews on subjects such as gender and feminism [4]; component content management [5]; communication on software development teams [6]; project management [7]; data visualizations [8]; and the intersection of TPC and translation studies [9]. In our case, we are focused on gaining insights into a mature topic that “addresses the need for a review, critique, and the potential reconceptualization of the expanding and more diversified knowledge base of the topic as it continues to develop” (p. 357) [2], and we appreciated the that it also offered a way to move across typical disciplinary boundaries.

We set out to better understand the topic of online learning. For TPC scholars, online learning is not a new phenomenon since teachers and scholars have been at the forefront of course design and teaching practices (e.g., [10] [11] [12] [13] [14]). However, since most fields engage with online courses and instructions, we wanted to look across disciplines to see what current research had concluded about effective pedagogical practices of online

learning. That is, have researchers tested pedagogical approaches with students to determine what works in online course design that enhances student learning?

In the process of conducting the review of research, we realized that TPC has little guidance on the important, albeit shadowy, process of performing literature reviews. In our case, the integrative literature review is a formal review that is a research end in and of itself. We recognized that detailing our decision-making process could be useful to guide others, while directly answering calls within TPC to “challenge the very infrastructure in our research culture” and “be more transparent in our representation of research and our methods for teaching graduate students to conduct it” (p. 119) [15]. Researchers can challenge and simultaneously make processes more transparent by taking time to reflect on research practice. Here we take research practice to mean the “actual work and implementation of methods and methodology in the process of performing research” (p. 131) [16]. A key part of the practice of research is connecting a research project to the existing literature. Thus, in the practice of performing our integrative literature review, we realized decisions made during the process of compiling any literature review makes an impact on meaning making in the field. The literature review brings together existing conversations and connects to new research being studied; thus, creating new knowledge and understanding along the way.

In our entry, we want to uncover and make transparent the processes and decisions—the research practice—connected to the literature review. With a specific audience of graduate students, early career scholars, and those who are entering TPC from other related fields (e.g., composition, user experience, etc.) in mind, we focus on three specific areas related to the literature review: expanding researcher positionality; considering methodology; and selecting literature for inclusion. Even though the larger project was a very specific type of literature review, we use it as an example of the type of scholarship TPC needs that focuses on the practice of research and the decisions made that explicitly and implicitly added the final published research and scholarship and the meaning making therein.

EXPANDING RESEARCHER POSITIONALITY

Positionality “refers to the stance or positioning of the researcher in relation to the social and political context of the study” (p. 628) [17]. Scholars in writing studies [18] [19] [20] and in the rhetoric of health and medicine [21] have expanded positionality to move beyond simply the researcher’s relationship to the study, and to include the background and experiences of the researchers themselves. Expanding positionality affords researchers the opportunity to discuss how those backgrounds and experiences can impact the study outside of the “social and political context” of the study itself.

We follow this expansion because, as we discussed how we wanted to approach the larger study, we recognized pretty quickly that we had to address some of our inherent biases that are derived from our backgrounds and experiences. These inherent biases impact the meaning making enterprise in material ways. We mention two of those ways here.

First, we both identify as TPC scholars and practitioners. To the latter, we both have industry experience, which decidedly affects how we consider the theory and application of concepts and research. We are more interested in the application of ideas rather than the theory or the frameworks behind them. Due to our industry experience, we want to emphasize the value in practical application of concepts over purely theoretical approaches in workplaces. This is a specific bias in our own position to research questions and to how we approach designing a research study.

Second, we have both taught online and fully agree with researchers who wrote: “Many instructors are thrown into online teaching, which requires a lot of strategy and planning to be successful, luxuries that require time, something many do not have. To further complicate things, elements of face-to-face courses can rarely be successfully migrated into online ones. We feel that many instructors lack a strategy and skill set to understand and design for their student users” (p. 73) [22]. To be able to adequately design for student uses, teachers need information on evidence-based practices. Our own predilection for applied research then means that we hoped to find research that presented evidence and centered students in the learning process. In other words, we want to know what really works for students outside of our own experiences in our classrooms.

CONSIDERATIONS OF METHODOLOGICAL AND DISCIPLINARY ORIENTATIONS

While researcher positionality immediately influences the process of meaning making, considerations of methodology do as well. Methodology has been defined as the ideological and disciplinary approach to the broad practice of the work of research [16] and a related definition explains that “methodology arises from epistemology, ontology, and axiology. How we know what we know, how we know what is true, and how we know what is good provide the tools for examining the world around us” (p. 8) [23]. What drives a key part of the methodology is the existing knowledge available on which to build new research. That is, the existing literature is the foundation of “how we know what we know” and underscores the disciplinary ideologies that researchers carry into new research projects.

Knowing or reviewing the literature, then, is a vital aspect of research, and one where early career scholars have little guidance in how to approach what can be a

daunting task. The technological environment makes it possible to search large bodies of literature, while on the other hand this ability to do things rather quickly brings with it another set of problems. Using search tools, large language models, and other technological “advances” can impede the actual knowledge making because it brings a false sense of understanding and knowing the literature. Figuring out how to construct borders to make the literature review more manageable is an essential skill for any researcher.

We use borders here deliberately because a border refers to a line or a demarcation point or edge of something. Borders, of course, can be crossed, so simultaneously setting borders for a literature review and knowing when to stop searching is a limitation, but it also suggests that the line can be crossed when necessary. We advocate for building from existing work within the field, and to do this means engaging with the key journals, books, and edited collections. Particularly when starting the literature review, researchers need to establish borders within their disciplinary or field.

A literature review shapes the research study design. It’s done iteratively and simultaneously to the development of the research question and closely with the choice of method(s). When researchers write the literature review, it will help to show how their research question interacts with existing literature (or research). The literature review will also build the argument because it shows how the study/project contributes to the existing scholarship. There has to be a connection that readers can see. A logical step through existing work to the main work of your own argument. Since the research process is not linear, the relationship between question, literature review, and methods is an intimate one. It then stands to reason that the project’s research question(s) will shift, change, or be refined through the process of the literature review, which is discussed next.

PROCESS FOR SELECTING LITERATURE

The meaning making and scholarly borders decisions are further streamlined in the move from conceptual, methodological, and theoretical considerations to those of the actual practice and process of research. How are decisions made about the borders for the literature review? This section is meant to answer the key question about meaning making:

- Timeframe
- Kind of research
- Boundaries of the literature
- Topic limiters

I. Timeframe

For an integrative literature review, a timeframe should be designated with a justification. For other types of literature reviews, timeframe remains a key characteristic

for the researcher to consider. In fields like TPC, some topics may benefit from historical research and classic studies, while other topics may need to focus on more recent studies.

In the case of our integrative literature review looking at effective practices in online teaching and learning, we limited our literature search to the last ten years. This timeframe seemed reasonable considering the changes in technology, which is a topic or consideration that can impact the timeliness of the literature search. In addition, with the beginning of Covid appearing in the middle of that time frame, it helped to consider studies that were more generalizable rather than studies that focused only on the transition to online learning because of the pandemic. Thus, our timeframe was January 2013 through December 2023.

II. Kinds of research

We also imposed a border on our literature search by limiting our review to those articles that reported results from an empirical research study. One study [24] defined empirical research as “research that carefully describes and/or measures observable phenomena in a systematic way that has been planned in advance of observation” (p 6). We felt limiting our examination to empirical studies would offer TPC program administrators and faculty a strong basis for the findings of this integrative literature review.

Another rationale for limiting our study to look at empirical research was the connection to evidence-based approaches, which we noted earlier is one of our positionality biases. The goal for evidence-based approaches is to use the evidence to drive practice and then build out additional foundations for keeping, improving, or abandoning those practices. TPC needs evidence-based research to support best or effective teaching practices. Starting by reviewing what the field knows from empirical research is a strong first step.

III. Boundaries of the literature

Boundaries refers to the databases and journals we manually searched, as well as the apparent ease of searching across wide swaths of published literature. We intentionally use “apparent ease” because it is a misnomer to believe that the proliferation of technological tools to “assist” in searching the literature and databases make locating literature easier.

We used a variety of terms since language of empirical work on teaching practices differs across the disciplines. However, we were committed to wanting studies that invoked some sort of user experience broadly construed; so, we used variations of this term alongside variations of online learning.

The following search terms were used:

- usability
- user experience

- user centered

These terms were placed in combination with:

- online learning
- online course design
- online course(s)

We began with general search of the following databases:

- ACM
- IEEE Xplore
- Web of Science

These three databases cover a wide swath of disciplines that would be familiar with issues of usability and/or interest in testing through empirical research features of online learning. For example, Web of Science includes a number of journals related to higher education such as the *American Journal of Distance Education*.

In addition, manual searches were connected in our discipline of TPC and also in journals from related fields (such as composition) where empirical work is likely to be published. While we recognize that TPC scholars often publish in edited collections, journals offered us another border to limit the search and to feel confident in our conclusions based on the research parameters. Following are the journals we manually searched, which means we used our same keyword combinations within the specific journal. The journals included:

- *Journal of Business and Technical Communication*
- *Journal of Technical Writing and Communication*
- *Technical Communication*
- *Technical Communication Quarterly*
- *Business and Professional Communication Quarterly* (BPCQ)
- *Programmatic Perspectives* (PP)
- *Computers and Composition* (C&C)

The first four journals are those that have longevity and are often considered as key journals. Other meta-research studies have used these journals to do disciplinary analysis of trends in the field [25] [26] [16] [27]. BPCQ and PP both publish work on pedagogy, which aligns with the focus of our work. Finally, C&C is in the sister field of composition and has been a consistent publication venue for topics related to online learning.

Abstract and title limitation: In order to find empirical articles that focused on usability, broadly construed, and online learning, we limited our search to reviewing titles and abstracts. This way, we could easily gauge if the research was designed to examine usability of some aspect of the course content in relation to online learning. In other words, we were looking for articles that specifically focused on empirical research about online learning.

The three databases produced a total of number of results:

- IEEE = 325
- ACM = 77
- Web of science = 340

Manual searching resulted in 45 additional articles. We ended up with 787 articles that could potentially be analyzed to help us understand evidence based features of effective online learning.

IV. Topic limiters

The rhetorical or contextual nature of interpreting results is further understood at this stage and the decisions we made. That is, once we presented a series of results, which are represented by the numbers above, we read the titles and abstracts and performed another round of elimination. This round of elimination could only be decided in practice because we did not know what we would find. When presented with results we began to understand what research actually aligned with our overall goals and objectives.

A key goal of our research was to demonstrate how boundaries and decisions were made during the research process. As we began to look through several hundred abstracts, we made decisions that set parameters for the type of research we wanted to include in our integrative review. Because we planned to examine empirical research across the disciplines that looked at usability in relation to student learning, we made the decision to exclude the following:

- **No professional development or faculty training:** Our goal was to gather insight on student learning, so we omitted any articles related to training faculty.
- **No faculty perspectives:** We limited our results to research that examined usability on student learning, so faculty perspectives about student learning were omitted.
- **No Massive Open Online Courses (MOOCs):** As a large open course, MOOCs have very different course design than the type of smaller writing courses taught in TPC.
- **No K-12:** To limit our findings to comparable research in higher ed, K-12 studies were omitted.
- **No Covid:** As a result of the pandemic, there was a large influx of online teaching articles. However, we found that articles written because of Covid lacked grounding in best practices. As we read the abstracts, we found that Covid articles typically illustrated what one instructor tried in their class(es), rather than studies with empirical or generalizable results.
- **No comparison to face to face (F2F):** The move to compare online to F2F is not useful because it frames the work of online teaching from a deficient model. Looking at transitioning F2F to online fails to acknowledge online courses as a separate modality that requires being developed from the ground up.

- **No feelings of students:** We chose to focus on student learning, though, we acknowledge the perceptions and affective dimensions of students.

After creating our list of publications based on title and abstract, we were left with 85 articles. Our next step was to read the full article. Reading the articles helped us to fully grasp the author's objectives and to determine whether they were fully appropriate for our study. Reading the articles also helped us to begin to track themes and findings. After reading the articles, the final number of articles to analyze for our integrative literature review was 37.

From the many decisions that have to be made for an integrative literature review, we learned that this same process of gathering literature and then narrowing it down is applicable to any literature review work. The process of determining borders is an iterative procedure that both limits and builds the meaning-making potential of new research. The decisions about the literature borders for the research topic need to be made at the beginning of the research project and then revisited throughout the process.

IMPLICATIONS

Since the goal of this paper is on the process of finding literature and making rhetorical choices, we end with a discussion of demystifying the integrative literature review process with two important implications for doing a literature review.

Uncovering our own practices and processes lead is to these border implications:

- Building research
- Boundaries are useful

I. Building research

Returning to Ramey and Rao's 2011 call for more systematic reviews in TPC, we advocate for building research in TPC first before moving outside to other fields. More studies to examine the field are needed. Overall, our review of online teaching practices exposed not only a lack of empirical research on online learning but no empirical research in TPC. For a field that has long been a leader in online teaching and learning and a field that considers user experience a key component of its identity, we were surprised by this finding. Granted, TPC has produced scholarship that offers insights into online teaching and learning; however, that scholarship is often based on the instructor's reflection of classroom experience, and it has the goal of improving local practices [27]. Even though there is value in this type of work, the findings are difficult to apply outside of the local context and because it is only the teacher's reflection and cannot be considered evidence-based practice. (Though it could be a data point to be added to other information that could form evidence based practice.)

This explanation of teacher reflection as scholarly practice intervenes into discussions of building research

from within the field. Too often, scholars fail to find the threads in existing research that they could weave together in a literature review to further their own research project. For a field like TPC, with a diversity of topics and sites of research, the research possibilities are endless. For example, a researcher may want to look at square widgets in a certain industry, but the existing research on circular widgets in a different industry is likely still applicable. When borders become important is when there is so much research that looking at all it becomes untenable. There are few subjects in TPC where this is a problem. Rather, the bigger problem facing the field is building from what we actually do have by pulling out relevant threads within the literature and doing important and much needed synthesis work of those threads.

We also warn about the approach to research that focuses on identifying gaps. Even though our review pinpointed a "gap" in research, we advocate that it was also important to include related findings. For example, our findings will include a section that analyzes similar review and synthesis pieces because those pieces are vital to establishing a larger context for the work that we completed. This step—of related but not part of the corpus—is critical to the idea of building and expanding research rather than conducting research for the sole purpose of "gap spotting."

Integrative literature reviews can be used as a baseline to gather data on a specific topic from multiple perspectives over a determined amount of time. One study [3] advocates for more evidence-based, programmatic research—including but not limited to, integrative literature reviews—because "this type of research can be recognized by a variety of stakeholders at multiple levels, including department, institution, and accreditation" (n.p.) Integrative literature reviews are systematic analyses of practices and concepts on a particular concept, but not limited to one context or issue. These types of studies are particularly useful for gathering data to help guide programmatic perspective by offering a baseline of information across a particular field or higher ed. This type of research combines accessibility and transparency to build trust with the audience. In our study, we found a lack of empirical work that tested online learning with users; however, it offers a foundation to build on in future studies. By establishing the borders in our project, we have uncovered relative literature and identified topics for future research. This process strengthens the meaning making because the researchers took time to explain the borders for locating the literature. We recommend this process not only for integrative literature reviews, but for the literature review section in any type of TPC research. In addition, we would like to stress that researchers must be cautious of leaning on generative AI and large language models because, at this moment, they are not sophisticated or reliable enough to do the types of synthetic work necessary for literature reviews.

Research considerations and boundaries impact the overall meaning making of the research findings and implications. While research study design decisions are often found in the different types of review scholarship, these same sorts of decisions are consistently made in any literature review. In a field such as TPC, the boundaries of literature reviews are a topic of vital importance. Too often researchers are too quick to declare a “gap” or to immediately want to turn to literature in other fields rather than do the hard work of threading together strands of scholarship that can be found in TPC. Admittedly, many of the narrow research topics may not have bodies of work that are directly relevant; however, many topics do have some work that should be discovered and analyzed.

II. Borders are useful

Considering issues of scholarly borders is fundamental to understanding how we want to build knowledge as a field and discipline. When negotiating a project’s scope and size, boundaries are an important aspect of designing a useful project. Our boundaries limited research to empirical studies on student users. However, we also kept several articles in consideration that had done review and synthesis work in similar ways to what we are doing. Those articles approached the synthesis from different perspectives, but we kept these in our corpus because they will be essential in framing and analyzing the findings from our own synthesis.

Identifying and using scholarly borders as a key part of the meaning making process is also useful in training (early career) scholars. Instead of trying to wade through general searches online or in a database, scholars should know and rely on the key journals in TPC and start the literature review process within those journals. From there, the search can move outward to key books and edited collections before doing broader and more automated searches where research results will bring in other disciplines and fields. Tools can help locate the literature with the caveats that knowing the journals and book series—related to who one is as a scholar (and a teacher)—make a better first step than a general search engine search or using the “search” function of a university library. Focusing the start of the literature review process within TPC will offer insights into the threads of ideas that work alongside your own ideas and interests. There are no shortcuts in literature reviews. A scholar needs to read and understand the existing work to be able to adequately build on it.

A final benefit of integrative literature reviews is that it can serve as a framework to guide researchers. Literature reviews can be a tough lift, as they require a good amount of reading and synthesis. Preparing and mapping out a plan for an integrative literature review offers guidance and allows you to gauge and scope the conversation you want to enter. The process of establishing borders and choosing literature for any literature review makes the meaning

making manageable. When researchers limit literature reviews by using keywords and targeting specific databases and journals, it makes the borders clear, which in turn makes the contribution to the meaning making understandable.

CONCLUSION

Part of uncovering the research practice of literature reviews in general, and integrative literature reviews in particular, was the need to expand research positionality, consider methodological orientations, and to select literature for inclusion. These three areas came to the fore when we were completing a cross-disciplinary integrative literature review and helped us to more formally uncover the process of establishing borders that impact meaning making in TPC. The implications that came out of our process point to a need for scholars to more thoughtfully and deliberately build research in TPC by starting with TPC scholarship. We also believe that making decisions about borders related to the literature review are useful to building research, as well as in training early career scholars. Meaning making in TPC is contingent on consistent reflection on research practices and how we are doing research. Uncovering the process of a literature review is an example of these types of practices.

REFERENCES

- [1] D. Walsh and S. Downe, “Meta-synthesis method for qualitative research: A literature review,” *J. Adv. Nurs.*, vol. 50, pp. 204–211, 2005.
- [2] R. Torraco, “Writing integrative literature reviews: Guidelines and examples,” *Hum. Resour. Dev. Rev.*, vol. 4, pp. 356–367, 2005.
- [3] J. Schreiber and L. Melonçon, “A taxonomy of programmatic evaluation and research questions to guide TPC program administrators,” in *Where We Start: A Practical Guide to Technical Communication Program Administration*. S. Williams and A. Ilyasova, Eds. Logan, UT: Utah State University Press, Forthcoming.
- [4] K. White et al., “Are we ‘there’ yet? The treatment of gender and feminism in technical, business, and workplace writing studies,” *J. Tech. Writ. Commun.*, vol. 46, no. 1: pp. 27–58, 2016.
- [5] T. Batova and R. Andersen, “A systematic literature review of changes in roles/skills in component content management environments and implications for education,” *Tech. Commun. Quart.*, vol. 26, no. 2, pp. 173–200, 2017.
- [6] F. Defranco and A. Laplante, “Review and analysis of software development team communication research,” *IEEE Trans. Professional. Commun.*, vol. 60, no. 2, pp. 165–182, 2017.
- [7] B. Lauren and J. Schreiber, “An integrative literature review of project management in technical and professional

communication," *Tech. Commun.*, vol. 65, no. 1, pp. 85–106, 2018.

[8] C. Gubala and L. Melonçon, "Data visualizations: An integrative literature review of empirical studies across disciplines," *Proc. IEEE Professional Commun. Soc. Int. Commun. Conf.*, 2022, pp. 112–119.

[9] A. Petts et al., "Setting foundations: An integrative literature review at the intersections of technical and professional communication and translation studies," *IEEE Trans. Professional. Commun.*, vol. 67, no. 3, pp. 285–300, 2024.

[10] T. Bourelle, "Adapting service-learning into the online technical communication classroom: A framework and model" *Tech. Commun. Quart.*, vol. 23, no. 4, pp. 247–264, 2014.

[11] H. Harris et al., "A call for purposeful pedagogy-driven course design in OWI," *ROLE Res. in Online Lit. Educ.*, vol. 2, no. 1, 2019.

[12] D. Martinez et al., "A report on a U.S.-based national survey of students in online writing courses," *ROLE Res. Online Lit. Educ.*, vol. 2, no. 1, 2019.

[13] K. Cargile Cook and K. Grant-Davie, Eds. *Online Education: Global Questions, Local Answers*. Amityville, NY: Baywood, 2005.

[14] K. Cargile Cook and K. Grant-Davie, Eds. *Online Education 2.0: Evolving, Adapting, and Reinventing Online Technical Communication*. Amityville, NY: Baywood, 2013

[15] R. Rickly and K. Cook, "Failing forward: Training graduate students for research—an introduction to the special issue," *J. Tech. Writ. Commun.*, vol. 47, no. 2, pp. 119–129, 2017.

[16] L. Melonçon and K. St.Amant, "Empirical research in technical and professional communication: A five-year examination of research methods and a call for research sustainability," *J. Tech. Writ. Commun.*, vol. 49, no. 2, pp. 128–155, 2019.

[17] D. Coghlan and M. Brydon-Miller, *The SAGE Encyclopedia of Action Research*. London: SAGE Publications Ltd, 2014.

[18] C. Cedillo and P. Bratta, "Relating our experiences: The practice of positionality stories in student-centered pedagogy," *Coll. Commun. Compos.*, vol. 7, no. 2, pp. 215–240, 2019.

[19] N. Small, "Localize, adapt, reflect: A review of recent research in transnational and intercultural TPC," in *Assembling Critical Components: A Framework for Sustaining Technical and Professional Communication*. J. Schreiber and L. Melonçon, Eds. Fort Collins, CO: WAC Clearinghouse, 2022, pp. 269–295.

[20] C. VanKooten and V. Del Hierro, Eds. *Methods and Methodologies for Research in Digital Writing and Rhetoric Centering Positionality in Computers and Writing Scholarship, Vol. 1*. Fort Collins, CO: WAC Clearinghouse, 2022.

[21] C. Molloy, "A dialogue on possibilities for embodied methodologies in the rhetoric of health & medicine," *Rhetor. Health Med.*, vol. 1, no. 3, pp. 349–371, 2018.

[22] C. Borgman and C. McArdle, *Personal, Accessible, Responsive, Strategic: Resources and Strategies for Online Writing Instructors*. Fort Collins, CO: WAC Clearinghouse, 2019.

[23] J. Brock, *Distributed Blackness: African American Cybercultures*. New York: NYU Press, 2020.

[24] M. MacNealy, *Strategies for Empirical Research in Writing*. Boston, MA: Allyn and Bacon, 1999.

[25] S. Carradini, "A comparison of research topics associated with technical communication, business communication, and professional communication, 1963–2017," *IEEE Trans. Prof. Commun.*, vol. 63, no. 2, pp. 118–138, 2020.

[26] R. Boettger and E. Friess, "Content and authorship patterns in technical communication journals (1996–2017): A quantitative content analysis," *Tech. Commun.*, vol. 67, no. 3, pp. 4–24, 2020.

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