Citational Practices as a Site of Resistance and Radical Pedagogy: Positioning the Multiply Marginalized and Underrepresented (MMU) Scholar Database as an Infrastructural Intervention

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ABSTRACT

Discursive infrastructures are forms of writing that remain mostly invisible but shape higher-level practices built upon their base. This article argues that citational practices are a form of discursive infrastructure that are bases that shape our work. Most importantly, we argue that the infrastructural base built through citation practices is in a moment of breakdown as increasing amounts of people call for more just citational practices that surface multiply marginalized and underrepresented (MMU) scholar voices. Consequently, this article both theorizes citations as infrastructure while also focusing on a case study of the MMU scholar database to help build a more equitable and socially just disciplinary infrastructure.

CCS Concepts

Information Systems

Keywords

Infrastructure, Citations, Social justice, Pedagogy, Discourse, DEI

INTRODUCTION

The process of "becoming" a researcher involves placing oneself inside a conversation and learning the intricacies and contours of a topic. Research training, in other words, is a constant process of catching up on what people have done before. However, researchers know that "catching up" on the conversation means, at best, becoming familiar with just one small corner of the giant room where the conversation is taking place. The best we can hope for is to be able to sound smart enough to the right group of people at the right time.

Maybe the most important way people show their work in research and establish their place in the conversation is through citations. Citations are structural and formative to the research process and are used to build a theoretical and methodological framework and situate one's argument. Those citational frameworks then are essentially a base upon which someone builds an argument, a base that establishes the author's ethos and shows which conversations they are taking part in and who they want to highlight as part of that conversation.

Those first two paragraphs are not saying anything particularly novel about the role citations play in research. The idea that citations—and this point is equally applicable to industry reports, academic articles, or hyperlinked blog posts—are used to build support and signal a conversation is widely taught in introductory writing courses. Citations have also become a growing area of research across multiple disciplines, including technical communication (Itchuaqiyaq et al., 2021; Moore et al., 2021). In fact, scientometrics and bibliometrics—academic fields tracking and analyzing academic research itself—have strong lines of inquiry dedicated to citation analysis (Tahamtan & Bornmann, 2019). In other words, many people have thought through how citations work, and we touch upon some of the implications of citations later in this article.

This article, however, builds upon and extends our understanding of citations through a novel theorization that we argue can help us rethink and analyze citational practices in positive ways. Our

main argument is that citational practices do infrastructural work and are a discursive base upon which entire disciplines—including communication studies, design, technical communication, and writing studies—are built. Conceptualizing citational practices as layers of discursive infrastructure enables us to analyze the role citations play in shaping that which is built upon them. That conceptualization also helps link work in our disciplines to the ongoing transdisciplinary discussion about building more socially just infrastructures (Graham & Marvin, 2001). As infrastructural research has often shown, infrastructures tend to be ignored. They tend to fade into the background and are often only noticed in moments of breakdown (Star & Ruhleder, 1996). We argue that the infrastructures of our citational practices are now in that moment of breakdown as more and more scholars have cast light on the unjust and unrepresentative politics of citation and how that affects disciplines and academia as a whole.

Importantly for our core argument, we are using the term "citational practices" intentionally broadly, a decision that was shaped by Star's (2000) argument that "it's infrastructures all the way down" (p. 1). In other words, infrastructures are shaped by lower-level infrastructures, and the deeper you dig, the more infrastructural work you will find. This approach to understanding the multi-level embeddedness of infrastructures is similar to the ways la paperson (2017) described the university as a machine within a machine within a machine. As la paperson argued, universities are "giant machines attached to other machines: war machines, media machines, governmental and nongovernmental policy machines" (p. 49). These university machines, whose infrastructures (all the way down) are based on colonial (pp. 16-18), and therefore white supremacist, structures. However, they are also sites of resistance whose smallest parts, such as academic citational practices, can be repurposed and reconfigured to disrupt and dismantle structures based on white supremacy. We embrace that multi-leveled approach in the way we deploy the term "citational practices" to cover multiple levels of work buried beneath published products; consequently, we are using the term "citational practices" to include actual published reference pages, the individual in-text citations within a written work, the databases and search practices people use to find work to cite, citation management systems, and even the pedagogical bases we build through things like qualifying exams and "cannons" that then shape who people cite in their work. Consequently, our use of the term "citational practices" is in direct conversations with Star's broader point about the layering of infrastructure and is meant to encapsulate the infrastructural work these practices do across multiple levels of the research process. To paraphrase Star, it's "citational practices" all the way down and these practices are not simply the final decision about whose name to put in a parenthetical at the end of a sentence.

Building upon that point, our first contribution is to theorize citational practices as discursive infrastructure, which builds upon recent work on the infrastructural role writing plays within larger structures. Our second contribution is to then argue for a radical rethinking of the infrastructural role of citational practices and call for an embrace of a more radical pedagogy. We then move on to a case study to describe an intervention one of the authors created that is designed to reshape our citational practices: the multiply marginalized and underrepresented (MMU) scholar database. The database provides resources for people interested in building a more equitable and representative discursive infrastructure of citational practice within their own research and to intervene in citational politics at the disciplinary level. And at a more theoretical level, we draw from Star's point mentioned in the paragraph above to argue that the MMU database is itself an infrastructure upon which the infrastructures of citational practice can be built. Consequently, beyond our focus on citational practices, we show how writing can layer itself in infrastructural terms, with pieces of writing building bases upon which later writing is supported. The concept of discursive infrastructure, as we hope to show, is expansive and productive for thinking through the hidden, layered work that writing does.

INFRASTRUCTURES ALL THE WAY DOWN

The importance of conceptualizing discursive infrastructures was developed in two recent articles by Read (2019) and Frith (2020). Read used ethnographic work at a Supercomputer lab to show how internal documents and data outputs—in other words, forms of writing we may not even think of as writing—served infrastructural functions. These documents, ranging from progress reports to functionality tests to internal memos, were a base upon which the Supercomputers were built. The documents themselves remained invisible for users of the Supercomputer, but they served—in Read's terms—"mission critical" infrastructural functions that supported and shaped the Supercomputing systems. If the documents disappeared, the higher-level products would crumble.

Frith's (2020) work also helped establish a theory of discursive infrastructure through a qualitative analysis of a technical standard. He showed how technical standards are written infrastructure that are invisible to end-users but exert significant agential roles in the development of larger systems. As he explained, standards are documents that become embedded in products and are key to how communities of practice align with one another. The standards documents, in other words, do more than support end-products: they shape them in significant ways.

Read's work and Frith's work engaged explicitly with infrastructure studies research to analyze the infrastructural functions of different types of writing. They put forward an alternative way to conceptualize how writing—defined broadly—becomes embedded in the design of larger systems. As Read asked, "What could be a more urgent or timely task for writing studies and technical communication than to make visible the boring, yet essential, things that constitute so much of organizational life, yet are largely invisible to it?" (2019, p. 262). Additionally, the two authors also adapted Star and Ruhlehder's (1996) elements of infrastructure that was initially designed on a seven-point heuristic. Read and Frith condensed that scale to five points of analysis to offer a framework for analyzing the "when" of writing as infrastructure. Their framework, which builds off each other, included five elements (the first four from Read and the fifth from Frith):

1. *Inclusiveness*: A broad definition of what we include as writing, which might include automated data outputs, spreadsheets, and so on.

2. *Relationally defined*: Writing becomes infrastructure in practice, not for clear ontological reasons. In other words, an infrastructural approach examines the work writing of various types does and how it can become infrastructural for different audiences while remaining an object of focus for others.

3. *Alliance Brokering*: Writing creates alliances amongst groups and aligns documents and objects and people in new ways.

4. *Mission Critical*: Infrastructural writing is writing that is essential to the function of the end-product it shapes and supports.

5. *Embeddedness*: Writing becomes infrastructural when the writing becomes embedded in higher-level products and systems and shapes them in often unnoticed ways.

This framework is by no means the only way of analyzing the infrastructural role of different types of writing, but it does provide a toolkit for looking at the "when" of infrastructural writing. After all, infrastructures—whether material or discursive—are relational and can do infrastructural work in some situations for some groups while being a primary object of focus for other groups (i.e., the second part of the framework: relationality). Or as Star and Ruhlehder (1996, p. 113) put it, "we ask, when—not what—is an infrastructure." And key to this article, we argue that this discursive infrastructure framework can help shed light on the infrastructural role of citational practices in research. As the next section argues, the infrastructural role of citation practices is in a moment of breakdown, and infrastructures "become visible upon breakdown" (Star, 1999, p. 380). More and more people have argued that citational practices tend to be exclusionary and unjust, over-representing white men at the expense of women and BIPOC scholars (Chang, 2009; Chakravartty et al., 2018; Delgado 1984, 1992; Itchuaqiyaq et al., 2021; Medina & Luna, 2020; Moore et al., 2021; Mott & Cockayne, 2017). Consequently, in this moment of breakdown and increased attention, the invisible has, in a sense become visible as more scholars put conscious thought into who they cite and teach as an effort to break the habit of reinscribing what Pimentel (2013) has called white European American (WEA) cultural practices.

To illustrate an example of this breakdown, we turn to Twitter. Technical communication scholar Sano-Franchini (2022a-f), in a response to a conference panel on inclusive citation practices, raised a powerful critique of how "inclusive" citation practices can themselves perpetuate white supremacy. She stated in her Twitter thread,

> I've been thinking a lot about how folks/we are at times quicker to address the need to cite scholars of color by citing scholars of color *outside of our discipline* to the exclusion of folks doing relevant work within our own discipline.
>
> Usually, these scholars of color outside of [our] discipline are established and widely regarded and thus folks who have been accepted by white supremacist academic structures.
>
> I think it's important to look across disciplines and cite works from outside narrow and oftentimes arbitrary disciplinary boundaries. But I also think it's super problematic if you cite only scholars of color outside of the discipline for several reasons.
>
> Maybe biggest of all is it sends the message that there are no scholars of color in the discipline doing the work and who have been doing the work for a long time. And usually this is just not the case. It's an erasure of history.
>
> Similar problems arise when folks cite the same few scholars of color in the discipline who are established, just so they can say that they did it, without really engaging w/existing work,

oftentimes by WOC, nor w/emergent work of grad students & early career scholars of color.

These are layers upon layers of institutionalized and racialized, gendered hierarchies at play that we need to contend with.

Sano-Franchini's thread demonstrated how citation practices in the field are not only being scrutinized for inclusivity, but also scrutinized for what that inclusivity is based upon. If "inclusive" citation practices can still be built upon "institutionalized and racialized, gendered hierarchies" as Sano-Franchini claimed, then citation practices themselves are an infrastructure that can support social justice aims, or white supremacy, depending on how it is used. Decolonial scholar la paperson (2017) described how universities—which create the need for academic publication and thus the need for citation—are a machine of "racial-gendered industries within the state" (p. 81). This university machine is an assemblage of other machines that can be reconfigured to create alternative modes of university that are based upon structures other than white supremacy. Scholars are themselves "scyborgs" whose agency is their embeddedness in the structure of the university machine. Scyborgs can hack and reconfigure institutional machinery, such as through modifying their citation practices to center MMU scholars, which then provides new bases to build a more equitable system upon/with. If, as Sano-Franchini described in her tweets, the hack winds up reifying white supremacy under certain conditions, then that hack can itself be broken down and reassembled anew. According to la paperson, "your newly assembled machine will break down. Some other syborgs will reassemble the busted gears to drive decolonial dreams. To dream it is to ride the ruin" (2017, p. 82).

This current moment is ideal first for understanding the infrastructural work of citation practices, and as we explore later, intervening in them. As Graham and Marvin (2001) showed, infrastructures embed inequality. They build a base often designed to benefit the powerful, whether they are bridges that connect certain areas over others, standards documents that emphasize certain language groups (Gonzales, 2022; Pargman & Palme, 2009), or health infrastructures built for certain types of bodies (Anglesey & Hubrig, 2021; Lengwiler, 2009). And key to our broader point about thinking infrastructurally, many scholars in technical communication and design have made similar points, though without framing the writing as infrastructure. For example, Bartolotta (2019) argued that the invisible (and we argue infrastructural) work of usability testing can "perpetuate injustice and marginalize users" (p.1); Alexander and Edenfield (2021) examined how health infrastructures (though they do not use that term) are designed for cisgendered white bodies and often mark marginalized people, such as Black transwomen, as "noncompliant" to normative care. Infrastructures embed inequality, and the infrastructures of citation are no different.

So, what kind of infrastructural work does citational practices do? We argue citational practices are infrastructural because they are the base upon which research is built; they are the layers or work that becomes buried at the ends of articles and sentences and shape the arguments that are the more typical primary object of analysis. The practices involved in citation remain mostly invisible, just as the reference page itself might not attract much attention unless it is missing something a reader expects or provides a reader with resources for citation mining. In other words, when functioning properly for the end-reader, the citational framework often fades

into the background of a larger article. And as we discuss in the next section, the discursive infrastructure built through citational practices are built upon the pedagogies we are taught, reproducing limited types of knowledge across generations of scholars.

Citation practices can work as discursive infrastructure for more than just their pseudo invisibility and placement at the ends of documents and sentences. Returning to the introduction, we understand citational practices as the many layers of hidden work embedded in final articles, including searching for research, drawing from the "cannon," managing references, and finally, including references in an end-document. Consequently, citation practices as discursive infrastructure

- *embrace an inclusive idea of what counts as writing.* With reference management software, reference pages are often automatically produced, resulting in a semi-automated form of writing that could complicate some of the intentionality often ascribed to writing and research practices.

- *are relationally defined*. They are buried at the ends of documents and sentences and the product of conscious choices invisible to the reader. They work as an often-ignored base for many readers. However, that pseudo-invisibility depends on the "when" of the document. For a reviewer making a decision about an article, the reference page might be the first place they check, moving what often remains in the background to the foreground in that situation. They only become infrastructural in certain situations for certain audiences.

- *broker alliances.* Citations align authors with other authors. They are a network that connects bodies of research and brokers alliances between an author and the sources they have chosen to align themselves with.

- *are mission critical*. Citations are the base upon which academic (and in many cases, industry as well) arguments are built. They serve a critical role, and if they were removed or significantly changed, the body of an argument would change as well. They are key to developing and showing the research process.

- *are embedded in documents*. Parenthetical citations are an obvious example of how citations become embedded within broader arguments. But citations and the theoretical frameworks people build also influence argumentation in more subtle ways as a form of discursive embedding. The alliances brokered through the embedding of citational practices shape how arguments are positioned and received even outside of the more obvious in-text embedding.

CITATION AS A SITE OF RESISTANCE AND RADICAL PEDAGOGY

Citation practices are currently in a moment of breakdown as more and more people critically reflect upon how the infrastructural bases traditionally built through citation can be exclusionary and silence marginalized voices. And, most importantly, this moment of breakdown and increased attention provides opportunities to radically rethink our pedagogies and citational practices.

Our conceptualization of citational practices as infrastructure raises necessary questions about citation practices in technical communication and communication design, especially as our fields have become more diverse and calls to make our field more inclusive

have become more common. To review, diversity simply indicates a number of MMU scholars present in an institution, but it does not indicate whether MMU scholars are being included meaningfully in that institution (Ahmed, 2012). Because of this often-conflicting reality, it is important to consider how the underlying machinery at work in the most minute academic practices (la paperson, 2017)— the mechanisms of marginalization (Delgado, 1984, 1992)— function to uphold or thwart diversity initiatives and inclusionary action. One site of potential resistance to the mechanisms that keep marginalized scholars at the margins is intentionally diversifying scholarly citation practices because our publications are how members of our field communicate with one another about our concerns, ideas, perspectives, activities, questions, and research. It is within our publications that our identity as a field takes form and our values are enacted (Rude, 2009).

Walton et al. (2019) argued that for technical communicators to understand "our role in systems of domination and injustice, we must first understand the various manifestations of oppression, recognize the ways they have worked, and develop sensitivities to them" (p. 19). One key element in this process of recognition of injustices and coalition building is creating opportunities for cross-cultural understanding to take place in meaningful ways and drive innovation. Collins (2009) discussed the need to recognize the knowledge sharing of members from marginalized communities (particularly Black women) as vital theoretical contributions in socio-cultural research. Itchuaqiyaq (in press) argued for the inclusion of everyday observations from Inuit communities as vital scientific contributions in climate change research. In other words, innovations in research across the disciplines requires an expansion in whose voices are included as cannon via mechanisms like socially just citation practices and pedagogy.

As many scholars cited throughout this section have argued, academic structures often work as systems of oppression, but within these academic structures, scholars can work together to combat oppression in bold ways. As la paperson argued, academic structures (including citational structures undergirding both research and teaching practices): "are never perfect loyalists to colonialism—in fact, they are quite disloyal. They break down and produce and travel in unexpected lines of flight—flights that are at once enabled by the university yet irreverent of that mothership of a machine" (2017, p. 55). That breakdown la paperson discussed harkens back to the idea of infrastructural breakdown discussed before. It is by breaking down our existing, and often unnoticed, structures and practices that we can then begin to reshape them piece by piece into something more equitable. And as la paperson has argued, to resist and break down the oppressive infrastructures undergirding the university system, one must understand the technologies that drive it.

One of the main technologies of academia is citation practices, which are a technology that often reproduces certain knowledges over others. And of course, like with breaking down and then rebuilding any type of infrastructure—whether discursive or material—people must consciously think about how to rebuild in better ways. After all, as we discussed earlier, the bases we build shape higher level practices. We can see an example of the conscious effort involved in rethinking the infrastructural role of citational practices in our discipline in the passage below:

> I remember presenting with Qwo-Li [Driskill] on a MLA panel called "Aristotle is Not Our Father." The room

was full, and we each trembled at the podium when it was our turn to speak. Qwo-Li told a story about hir decision not to include any Kenneth Burke[1] texts in hir Histories of Rhetoric course. Other faculty members could not understand this decision. As Qwo-Li spoke, hir frustration with hir colleagues and the discipline was palpable: Why do we tell only one history of the discipline? Why do we claim some ancestors and not others? In that moment, I remembered that I was part of a movement. In that moment, I felt like a contributing member of a community of cultural rhetorics scholars. In that moment, I felt an increased investment to play a part in defining and making the discipline. In that moment, I knew and I continue to know, more than ever, that our work matters. (Powell et al., 2014, p. 11).

The passage above does not use the word infrastructure, but we argue that Driskill's move is, at its core, an infrastructural one. After all, as we discussed earlier, infrastructures are not a steady ontological category. Instead, it is the "when" not what of infrastructure. The "when" in this case is the enactment of a feminist pedagogical stance in creating course reading lists. Moves like this, we argue, impact our field in tangible, generational ways that only become visible well down the line in publication practices.

To extend Driskill's argument to create alternate histories of disciplines, we ask: What if we reconceptualized the classroom to include what we (as authors and as the field in general) teach through our academic publication practices? Published academic scholarship is first and foremost a teaching tool, and scholars from all levels are its students. Academic scholarship teaches in many expected and unexpected ways. It teaches about synthesis through contextualizing relevant scholarship and putting ideas in conversation with one another in literature review sections. It teaches about genres through organization and academic writing tactics, such as citation. If scholars are more likely to cite literature that they've read in their coursework (and at least the two of us certainly are, even though one of us finished his PhD almost a decade ago), then they are similarly more likely to cite literature that they've encountered within the scholarship they read. For example, in researching feminist pedagogy, one might encounter bell hook's *Teaching to transgress: Education as a practice of freedom* (1994). In this book she discussed the importance of resistance to the cultural norms of knowledge dominance in one's pedagogical practice. According to hooks (1994),

> Progressive professors working to transform the curriculum so that it does not reflect biases or reinforce systems of domination are most often the individuals willing to take the risks that engaged pedagogy requires and to make their teaching practices a site of resistance. In her essay, "On Race and Voice: Challenges for Liberation Education in the 1990s," Chandra Mohanty writes that "resistance lies in self-conscious engagement with dominant, normative discourses and representations and in the active creation of oppositional analytic and cultural spaces. Resistance that is random and isolated is clearly not as effective as that which is mobilized through systemic politicized practices of teaching and learning."

(p. 23)

This passage not only reinforces the concept of teaching as a site of resistance, it also introduces the scholar Chandra Mohanty. After encountering Mohanty's quote cited in hooks, one may continue on to read the cited article and Mohanty's subsequent publications. As a result of a similar pathway, Mohanty is now cited in the article you are reading now. Academic scholarship is a site of peer-to-peer instruction as well as a site of resistance to colonial and hegemonic forces in education. Scholars have a choice in whom we cite and how, and we have a choice to resist the reproduction of past WEA-focused citation practices through generation after generation of reading lists and coursework. If scholars mobilize together to resist hegemonic norms of citation and knowledge (re)production, then we have an achievable way to make our field more equitable and innovative. As scholars, we have the opportunity to build a base of more just citational practices that then shapes the citation practices of scholars across our field.

Consequently, pedagogy and rethinking a radical university (as argued by la paperson) obviously has direct impacts on students and professors, but we argue that it also works infrastructurally in often invisible ways. To repeat a Star (2000) quote from earlier, "it's infrastructure all the way down" (p.1), and these pedagogical examples shows how that can work in practice. The types of pedagogies we embrace, the names in our "cannons," the doctoral seminars we teach, and the readings lists our students trudge through are ultimately infrastructural. When an article is published, no one sees any of that work. The pedagogical base remains invisible; but much of that pedagogy makes its way into reference pages. Our pedagogical structures, in other words, play an infrastructural role in shaping the later infrastructural citation practices that reproduce certain types of knowledge, which is why we consciously define citational practices so broadly to include all of the infrastructural layering that becomes embedded in published research. Consequently, the next section transitions to our case study of an infrastructural project that explicitly surfaces often marginalized voices and provides resources for people to radically rethink their citational (and relatedly, pedagogical) practices: the MMU scholar database.

MMU SCHOLAR DATABASE AS INFRASTRUCTURE

The "MMU scholar list" (see Figure 1) and "MMU scholar bibliography"—AKA the MMU scholar database—was created by Itchuaqiyaq (2022) as a way to intentionally insert MMU scholars' work into mainstream reading, writing, and teaching practices. This database was born from the list of 86 scholars listed in Walton et al.'s (2019) book—a list of scholars that directly combatted what Walton et al. called the fictionalized, but common, statement "I'd love to read and cite more work by marginalized scholars in the field, but there are just not enough Black, Indigenous, minority, transgender, scholars with disabilities, etc. in our field" (p. 169). The MMU scholar database expanded Walton et al.'s list through field-wide survey responses[2] (Itchuaqiyaq et al., 2019) where individuals could self-identify as a MMU scholar and self-select to be included in the database. The database also includes a bibliography of scholarship written by MMU scholars. The MMU scholar database has been updated on semesterly basis (in time.

MMU Scholar List (Self-Identified)   Updated March 15, 2022

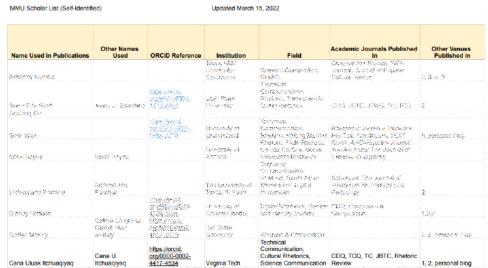| Name Used in Publications	Other Names Used	ORCiD Reference	Institution	Field	Academic Journals Published in	Other Venues Published in
Cana Uluak Itchuaqiyaq	Cana U. Itchuaqiyaq	https://orcid.org/0000-0002-4417-4534	Virginia Tech	Technical Communication, Cultural Rhetorics, Science Communication	CDQ, TCQ, TC, JBTC, Rhetoric Review	1, 2, personal blog

Figure 1. Cana Uluak Itchuaqiyaq's entry on the MMU Scholar List. The other entries are blurred out to avoid including other MMU scholars without their consent.

for course preps) since 2020 using submitted information via a Google Form. In these next sections, we will demonstrate the MMU scholar database's infrastructural nature as a basis for future knowledge production in our field and describe its design using Read and Frith's framework of discursive infrastructure as a guide.

The MMU scholar database is infrastructural writing

As Walton et al.'s book (2019) and McKoy et al.'s (2021) CFP for the Black in Technical Communication special issue in Technical Communication Quarterly indicated, the field of technical communication is facing a breakdown of status quo (read: WEA) conceptualizations of the field. The MMU scholar database is a set of collaboratively written documents that serve as a base for building a more inclusive field. Although the database itself is not something that was designed to be cited or taught in courses, it is writing that affects future citations and teaching.

The MMU scholar database's design reflects citational practices' contribution to the structure of academia. Calls for more inclusive citation practices have existed in academia since the 1980s (refer to Delgado, 1984 for his groundbreaking work on problematic citation practices in civil rights scholarship as well as those that cite his work for more recent discussions). However, identifying marginalized and underrepresented scholars has remained nebulous. Until this database was published[3], scholars wishing to intentionally shift their citational and pedagogical practices to center MMU voices had to rely on assumptions, personal knowledge, ocular information (e.g., a scholar with a visible marginalized identity), or marginalized identity factors disclosed in scholarship or on scholarly profiles, etc. The MMU scholar database was designed to assist individuals in locating self-identified MMU scholars and provide some professional context. Though the MMU scholar database lists information about the *professional* identities of scholars, *personal* information, such as which marginalize identities the scholars emboy, are not listed (see Figure 1).

For example, one cannot look up all the Black women scholars in technical communication using this database. Nor can one look up all the LGBTQIA+ scholars on the database. This omission was an intentional component of the design of the MMU scholar database because, frankly, doing so could cause unintentional harms related to identity politics and bias.

Returning to the discursive infrastructure framework discussed above, we argued that the MMU scholar database fits withing discursive infrastructures' broad scope of what counts as writing. And as this section has discussed, the infrastructural work the database does was consciously planned in specific ways, not merely a grouping of contact information on a spreadsheet. Consequently, the database itself is a form of writing that can then shape the later writing influenced by the entries in the database.

The MMU scholar database's infrastructural effects are relationally defined

As we discussed earlier, in identifying writing as infrastructure it is important to critically evaluate when that writing has an effect. The MMU scholar database is just a series of documents about MMU scholars while people are reading it. However, the MMU scholar database becomes infrastructural when it affects whose scholarship we teach and whose scholarship we cite. When the database becomes part of the practice of the field, then it is an infrastructure that shapes how the field is built.

The MMU scholar database's design also reflects the when of disclosing personal identity factors. Not everyone who has a marginalized identity factor chooses to identify as a MMU scholar. The design of list and bibliography intentionally allowed individuals to decide whether they wanted to be publicly identified as a MMU scholar. As the list of MMU scholars has grown, individuals on the list have both opted in and opted out. When individuals have requested to have their name removed or have otherwise declined to have their name added (and have provided information about why), they have consistently stated something along the lines of not wanting to extend their relative privilege.[4] For example, though

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3 *Though there are few examples of public self-identified minority scholar databases, the NCTE/CCCC Latinx Caucus created an in-community Latinx bibliography in 2014, as described in Cruz & Luna (2020), that was shared internally on their listserv as a Google Doc.*

4 *Comments came from both the IRB-approved survey and personal communication with individuals outside of the scope of the survey.*

an individual embodied one or more marginalizing identity factors, they also embodied dominant-culture identity factors that allowed them to consistently navigate the world in ways that were relatively unaffected by oppression. This ability to opt in or out at any time is an intentional design feature of the MMU scholar database, and to build upon Star (1999), shows how infrastructures—whether material or discursive—must be actively maintained and "fixed in modular increments" (p. 382) to remain viable.

The MMU scholar database brokers alliances across the discipline

The MMU scholar database is an infrastructure that connects scholars together. The database provides the necessary information for scholars seeking to enact inclusion in their scholarly practice to do so through future actions inspired by the information in the database. In other words, just reading the information in the database itself does not make a scholar's practice more inclusive, nor does it make the database a discursive infrastructure upon which a base is built. It is up to the scholars reading the database to use this information to build a different base that shapes future practices, such as downloading, reading, and then citing or teaching a MMU scholars' written work, or prioritizing attending MMU scholars' presentations at conferences.

The MMU scholar database's design is meant to help scholars from all backgrounds connect with MMU scholars. However, one might notice that although the scholars' institutions are listed, their specific contact information is not. Beyond basic security considerations, this exclusion was meant to force scholars to put in some effort in connecting with MMU scholars directly. For example, since the database was published, several scholars have inquired about sending job ads or other such information to the listing of MMU scholars. This database was not designed to give simple "one click" access to MMU scholars for on-demand Diversity, Equity, and Inclusion (DEI) needs. Excluding easy-access features helps to mitigate potential tokenization of MMU scholars because although the MMU scholar list provides the necessary first steps towards identifying MMU scholars (e.g., their names, their institutions, their ORCiD ID, and their research interests), engaging with MMU scholarship actually requires a small degree of work. To be painfully clear: the service that the MMU scholar database provides was designed to amplify, not tokenize, MMU scholars. The series of steps that might happen after reading the MMU scholar database (step 1) include engaging with an MMU scholar's work (step 2) and then reaching out to them to build relationships (step 3) for potential collaborations and opportunities (step 4). Do not use the database to skip to step 4. After all, the MMU database is designed to be a base that shapes the research and teaching practices we build; not a surface-level listserv interface.

The MMU scholar database supports mission critical DEI initiatives

The MMU scholar database is an infrastructure that can be essential to the function of DEI initiatives in our discipline through the ways it shapes and supports this work. Though the MMU scholar database itself does not act to make academia more inclusive, it provides a necessary base from which individuals can build a more inclusive scholarly practice in their own work and help foster it in those they teach through their writing (citations) and their pedagogy (course readings).

The MMU scholar database's design prioritizes helping the

discipline become more inclusive. As this database grows and more scholars enrich their academic practice through engaging with the work of MMU scholars on the database, its impact should become apparent in the references section of publications. There is no guarantee that if a scholar reads another scholar's work that they will cite it in their future manuscripts. However, the probability of that citation occurring is much greater than if the piece was never read in the first place. How MMU scholarship is engaged with as a citation (e.g., citation occurring as part of a string citation or quoted or paraphrased) is whole other DEI conversation (see Itchuaqiyaq et al., 2021 for more), but it begins with encountering scholarship from diverse voices in the first place. The MMU scholar list on the database, as was described above, was designed to force its users to look up the scholars on the list so that a modicum of investment in MMU scholars had to occur to actually use the information on the list. However, the MMU scholar bibliography could be used as a potential citation extraction site (i.e., people just copying citations and plopping them into string citations for broad, general claims instead of actually reading the scholarship) for upping "diverse" citations. Is this what was intended? No. Is this an ethical way to practice scholarship in general? No. Are the potential risks of tokenizing citation practices worth the potential long-term gains toward inclusive citation and pedagogical practices in our discipline? We hope so. What we do know is that databases like this one serve a mission critical infrastructural function for surfacing these voices and pushing back on the claims that people just do not know MMU scholars they can cite.

The MMU scholar database embeds inclusion into our discipline

The MMU scholar database, if used to inform inclusive scholarly practice, shifts the dominance of WEA scholarship by embedding MMU scholarship as an alternate base from which to build arguments (citation) and courses (readings). Further, the database can serve as a new base from which to build new conceptualizations of the discipline (comprehensive exam reading lists).

The MMU scholar database was originally designed to provide an alternative view of the discipline stemming from Itchuaqiyaq's experience creating her PhD comprehensive exam reading list. As a scholar researching inclusivity within the citation practices of technical communication, she recognized the irony of using "traditional" reading lists that are dominated by WEA authors as the basis of how she proved familiarity of the field. Giblin and Schafer (2008) discussed how consistent author inclusion on comps reading lists provides a strong indicator of their relative prominence in their fields. Itchuaqiyaq wanted her scholarly understanding of the field to reflect the voices she was straining to hear: MMU scholars. She knew it was from these voices that she wanted to build her future scholarship. Typical practice of creating comps reading lists base them on readings encountered in coursework. Although her coursework included diverse authors, there were not nearly enough of them to fill a list of 100 works. Itchuaqiyaq used the list of MMU scholars listed in Walton et al.'s (2019) book and began looking each of them up on databases like Google Scholar to find their publications. When Google Scholar results weren't clear (i.e., multiple people with the same last name and initial had publications in what seemed multiple fields), she looked up their university affiliation to find a CV or listings of their publications. It was pain-staking work but yielded a bibliography of over 100 scholarly works authored by MMU scholars in the field. Itchuaqiyaq was able to complete her comps exam using a

view of the field of technical communication and rhetoric as told by MMU scholars. It was this initial comps reading list that she posted as the MMU scholar bibliography and shared with others online.

The embedding happens when the MMU database then influences other people's research practices. The database itself might not be cited or referred to explicitly in research articles, but it becomes invisibly embedded as discursive infrastructure as people who access the database alter who they cite and who they assign. Like with much embedded infrastructure, the impacts may not be immediate, nor will they necessarily be explicitly apparent. But the impacts become embedded, in infrastructural terms, when they shape the end products (e.g., articles and syllabi) that people do engage with directly.

CONCLUSION

One of the core reasons we conceptualize citational practices as discursive infrastructure and call for an intervention in how those infrastructures are built is because, for all its faults, academic research does remain an avenue for freedom of expression and activism. What we have argued here is that our current citation practices are in a moment of breakdown. Prominent scholars across disciplines have argued that existing citational practices builds a base that reproduces WEA, mostly male—sometimes even Nazi[5] —knowledge at the expense of other voices. And going one step further, the discursive infrastructures built through citational practices are not just about who we cite and why; the issue goes to a deeper infrastructural level that traces back to what we teach students and what we construct as the "cannon" that must be engaged with in doctoral work. That pedagogy then does the invisible infrastructural work that shapes the discursive infrastructures that signal a publication's contributions and alliances. In true infrastructural terms, these practices are almost never apparent in the final research deliverable, but they shape the deliverable in consequently and unnoticed ways.

Consequently, while we argue for rethinking citations through infrastructural thinking, we also want to point out that it's infrastructures all the way down. We cite who we are taught; we cite who our advisors cite; we build an infrastructural base upon which we then build the discursive base of citational practice. As Mohanty (2003) argued about academia, it is a "contradictory place where knowledges are colonized but also contested … one of the few remaining spaces in a rapidly privatized world that offers some semblance of a public arena for dialogue, engagement, and visioning of democracy and justice" (p. 170). As such, breaking down and rebuilding discursive infrastructures of citational practice requires a systemic politicized academic practice that is more than just choosing certain names over others. It takes the types of radical pedagogy discussed above to lay different metaphorical bricks through which citations are built. As layer upon layer of infrastructure, so much of what we have discussed remains almost completely invisible in published articles. But these published articles are built upon and shaped by bases built far earlier. As Mott and Cockayne (2017) stated, "Careful and conscientious citation is important because the choices we make about whom to cite— and who is then left out of the conversation—directly impact the

cultivation of a rich and diverse discipline" (p. 955). To make a lasting change in our field, the fundamental shift towards a more just and representative discursive infrastructure of citation requires acts of radical pedagogy and intervention that help build different bases upon which our future conversations and knowledge making can occur.

The work we are describing in this article will not be easy. Rebuilding an infrastructure never is; it will require conscious thought of everything from the pedagogies we embrace to the practical decisions about who we cite. And at the basic level, one of the challenges many of us face is simply lack of exposure and knowledge. Many researchers and teachers have built their discursive bases in certain ways and tearing them down requires actively searching out different voices, which can be challenging and feel overwhelming. The MMU scholar database offers vital information for those who want to enrich and extend their scholarly circle to include more scholars who self-identify as MMU. It offers a path towards building an alternative infrastructural base upon which we can reshape our discipline. However, knowing who these scholars are will not make our field more inclusive. Engaging with MMU scholarship through reading, citing, and teaching it is an important component to equity in academia and hopefully helps us build an infrastructural disciplinary base that surfaces voices that have been neglected for far too long.

NOTES

This article was accepted before Jordan Frith became editor-in-chief o*f Communication Design Quarterly*

Since the article was originally written, a few new resources hae been made available or come to light that we' like to hihglight:

The Bibliorgraphy of Works by Black, Indingeous, and People of Color in Technical and Professional Commuication, created by Jennifer Sano-Franchini, Chris A. Lindgren, and Sweta Baniya. Located at: https://t.co/pi4rKtjWhj

The Contribution of Black Scholars in TPC list, sorted by subject area, created by Laura Gozales. Ann Shivers-McNair and Rebecca Walton. Located at https://docs.google.com/document/d/1trENxW uVaFLMfdReKVcOixOt1mT26pG_Ekejg3Uapk/edit?usp=sharing

The CPTSC Diversity Committee Bibligraphy: Issues of Diversity, social Justice, an Intercultural Commuication, created by Stuart Blythe, Jessica Edwards, Jim Henry, Natalia Matveeva, Lucha Morales, Eric Roberson, Jerry Savage, Brian Waddle, Danielle West and Han Yu. Located at: https://cptsc.org/wp-content/uploads/2017/06/diversitybib.pdf

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5 *For example, despite relatively common knowledge of Martin Heidegger joining the Nazi party in 1933, his work remains highly cited in rhetoric and other humanities fields. In mathematics, influential scholars Teichmüller, Kähler, Blaschke, among others, were also known Nazis and remain highly cited and have mathematical constructions and spaces named for them.*

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