

Chapter 9: A Critique of Disability and Accessibility Research in Technical Communication Through the Models of Emancipatory Disability Research Paradigm and Participatory Scholarship

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Abstract: The last two decades have seen an increase in articles about disability and accessibility within technical and professional communication (TPC) scholarship. As disabled users make up a sizeable portion of all users that our field aims to serve, this development is certainly a welcome change. However, as this chapter points out, disability and accessibility scholarship within the field has fallen short of keeping up with recent developments in the field of disability studies. Through a critique of three articles within the TPC field, the first half of this chapter highlights areas in our scholarship that need improvement in order to not only keep up with developments in other fields but also to better address the needs of this specific group of users. The second half of the chapter then introduces participatory design and participatory action research from the perspective of emancipatory research paradigm as two approaches to interface and product design, research, and pedagogy and shows how these approaches have the potential to propel TPC scholarship towards being more inclusive and mindful of users with disability. The chapter concludes with two substantive examples that foster participatory design and participatory action research as a way to illustrate the practical application of these approaches in research and pedagogy. The seven-point heuristics introduced in this chapter can be employed as an independent tool for assessing the value of disability studies-centered research and pedagogy in a variety of settings.

Keywords: accessibility, critical social model of disability, emancipatory research paradigm, participatory design, participatory action research

As technical communication experts are primarily focused on facilitating communication in complex environments among people, the frameworks that in-

form this work have to incorporate theories that not only illuminate the needs of people with all abilities but also influence the design process of new technology and research for all users. Ten years after the Americans with Disabilities Act became law, an awareness emerged in the early 2000s that discussions of disability need to be incorporated into research and pedagogical considerations in the field with special attention to how disability studies might inform the teaching of medical and scientific writing (Wilson, 2000). In the same timeframe, following the publication of the Web Content Accessibility Guidelines (WCAG) in 1999, concerns of website accessibility moved to the foreground of practitioner and academic discourse in technical communication, with a clear purpose of bridging the gap between usability and accessibility (Slatin & Rush, 2002; Theofanos & Redish, 2003). John Slatin and Sharron Rush focused on the instrumental aspects of making webpages accessible, whereas Mary Frances Theofanos and Janice Redish's study was one of the earliest efforts in TPC at examining the accessibility problems faced by blind and low-vision users when visiting websites. While Slatin had first-hand experience of web accessibility issues as a blind user, Theofanos and Redish drew on observations of blind users as practitioners in the field. Similarly, Jeff Carter and Mike Markel (2001) introduced the problems faced by disabled users and offered some practical advice to web developers when creating websites.

These initial articles were followed by an increasing number of publications in the last two decades about incorporating disability and accessibility into our professional discourse (Knight & Oswal, 2018; Konrad, 2018; Melonçon, 2014; Melonçon, 2018; Moeller, 2014; Oswal, 2014, 2018; Oswal & Melonçon, 2014; Walters, 2010). The earliest of these articles (Walters, 2010) discusses the introduction of the concept of universal design and accessibility into the author's technical communication classroom. The approach described in this article made the students aware of accessibility issues and assistive technology pitting accessibility against multimodality without the involvement of disabled users. While disability studies theory is introduced in this article, the classroom activities included in this course did not specifically engage the basic tenets of disability studies particularly through any direct involvement with disabled users. Sushil Oswal (2014) wrote a position paper that argues for participatory design by expounding its benefits to designers and technical communicators. As the title of Marie Moeller's (2014) piece indicates, this article engages critical disability studies for the purpose of deconstructing the concept of normalcy on medical advocacy websites.

Working from the disappointing results of a national survey of online instructors, Sushil Oswal and Lisa Melonçon (2014) advocate for a greater attention to accessibility in the ever-increasing number of online technical communication courses. This article also includes practical suggestions for technical communication instructors on how to design accessible online courses. The guest editorial by Oswal (2018) offered a detailed overview of disability studies literature and explained the relevance to the teaching of business and professional commu-

nication. An example application of these concepts is presented by Melonçon (2018), where she describes how instructors can orient themselves to disability and accessibility in a professional communication classroom. A second editorial by Melinda Knight and Sushil Oswal (2018) emphasizes the need for accessibility research to move beyond the classroom to business and professional communication workplaces from the perspective of disability studies. An example of such research is Annika Konrad's (2018) study of several blind professionals' practices in the workplace.

While many of these articles have aimed to make technical and professional communication pedagogy more inclusive, several other publications are based on now outdated models of disability even though they might have served an instrumental purpose (Theofanos & Redish, 2003, 2005; Wilferth & Hart, 2005). In addition, some publications fail to go beyond the illustration of accessibility issues, only focus on the technical aspect of remediation, and separate the author's own pedagogical practices and disabled users' experiences from general directions outlined for others to follow (Dolmage, 2009; Palmeri, 2006).

The purpose of this chapter is to assess the current state of disability/accessibility research in technical and professional communication in comparison with the theoretical advances in disability studies research. Through the detailed analysis of three often-cited research- and pedagogy-oriented articles related to disability and accessibility in our field, this chapter will provide a deeper understanding of where technical communication research stands in relation to the most up-to-date theories in disability studies. This analysis will establish where our field makes meaningful contributions to equity and inclusion for all users, and where it falls short and needs to adopt a different approach to research and pedagogy. The chapter then will propose our approach to disability and accessibility research employing participatory design and participatory action research approaches which give disabled users a key role in the research and design processes. While our first example will offer our vision of participatory design, our second example will be based on our own classrooms and will show how participatory action research approach can be combined with inclusive pedagogy.

■ An Analysis of Select Technical Communication Articles

To provide insight into the state of technical and professional communication research focusing on disability, we selected three often-cited articles from the last two decades and analyzed them through the use of a new, seven-point heuristics model. We introduce this seven-point heuristics model for analyzing disability and accessibility-related scholarship in TPC because it helps to evaluate TPC work from the perspective of disability studies. This heuristic is grounded in the basic premise of emancipatory research paradigm in disability studies that asserts that no research can represent disabled people without their

direct participation in all aspects and stages of research. In the disability studies field, when we talk about disability, the functional aspect of a person's impairments is limited to describing how this impairment keeps that person from performing a particular function within an ableist environment. On the other hand, disability is a much broader concept because it includes the physical and social environment within which a disabled person interacts with their environment on a daily basis, but it also covers such additional aspects as personal attitudes toward impairment and disability, social stigma, and a baggage of considering disability from the medical establishment's mechanical view of the disabled body. We can only gain valid insights into these aspects through participatory action research with disabled users and learning about their experiences through first-hand interactions. Just as we cannot have feminist research without a full participation of women, we cannot claim to have the right to speak for disabled users without giving their voices a predominant place in our research activity. We define this distinction between the functional aspects of impairment and the broader environment within which disabled people interact with society because approaches to teaching accessibility within technical communication still largely favor the functional approach which focuses on the disabled person's impairment and leaves out the fuller user experiences of people with disabilities. We are rethinking participatory design to help the field do participatory designs better but also to conduct better research.

The articles we take up for our analysis illustrate the present problems with TPC scholarship, particularly in how it represents disabled users, their accessibility needs, and their role in the production of TPC knowledge about disability. The purpose of our analysis was to determine how inclusive these articles were in light of recent disability studies research in order to identify the assumptions behind these articles as well as their strengths in becoming agents of social change. For this reason, we have developed these seven heuristics that guide our analysis of these illustrative samples:

1. Does the article address the functional aspect of disability only, or does it encompass the disability experience as a whole?
2. Where do the articles move the disabled users, consumers, students, workers, and educators from the margins to the center, or where do they allow the disabled to take center stage and have a literal voice in the design discourse?
3. Where do the articles simply evoke the topic of disability as a trendy topic, or where do they suggest concrete steps to counter ableism, inaccessible designs, and exclusionary pedagogies?
4. Do the articles give any meaningful examples where the authors have modified their own pedagogies, designs, and policies?
5. Is (Are) the author(s) willing to share their embodied experiences of disability directly or indirectly?

6. Does the article challenge the larger physical, social, political, cultural, economic, or institutional contexts and structures that, in the first place, create the need for the article's topic to be researched?
7. What contribution does the article make to "participatory accessibility"?

The first article analyzed is "Disability Studies, Cultural Analysis, and the Critical Practice of Technical Communication Pedagogy" by Jason Palmeri (2006). This is a commonly known and often-cited article in technical communication as it was one of the first publications that applied theories from disability studies to critically examine how the discourse and professional practices within our field contribute to a clear division between normal and deviant bodies. In this article, Palmeri takes a critical look at safety communications and usability and provides examples of texts and rhetorical moves where these subdisciplines further reinforce deep divisions in society. He shows that in many ways, discourse in safety communications and usability either subscribes to the medical model of disability that aims to rehabilitate people so that they can become like the "normate"—to borrow a term from Rosemarie Garland-Thomson—user, or it capitalizes on the charity model where the emotions of seeing people with disability are used to motivate society to take remedial action (Garland-Thomson, 1997, p. 8; Kleege, 2011; Longmore, 2015; Mattlin, 1991). While these observations were certainly effective in providing a critical view of these professional practices, a closer look at Palmeri's article shows that it does not go far enough in its criticism of the field and in its application of this critical stance to his own work.

While Palmeri's (2006) article does challenge the underlying assumptions within technical communication that further society's reinforcement of an environment and institutions favoring its able-bodied members, the strength of this article is in the act of critiquing and calling attention to an issue in the form of questions, not necessarily in providing a solution to the problem. In fact, the recommendations Palmeri includes are provided as a series of questions that instructors (in general) could incorporate into their curricula as part of their students' critical inquiry. These questions, as Palmeri states, could guide students' critical interaction with the professional discourse and could further their understanding about usability and accessibility, the functional aspect of disability, while personally experiencing assistive technology such as screen readers. Ideally, as explained in the article, this approach to teaching technical communication would allow students to arrive at a stage where they are ready to challenge the underlying norms of the whole discourse community, the norms that underpin the ideology of normalcy. However, Palmeri does not provide concrete examples of his own actual pedagogical projects, course descriptions, or lesson plans, and thus his call to action remains on the level of hypothetical suggestions as opposed to easy-to-implement and thoroughly tested pedagogical tools with an actual impact.

Our analysis of Palmeri's article has also revealed that while the author is conscious and open about his temporarily able-bodied condition and thus shows

awareness of the subjectivity and embodied nature of disability, the article discusses disability overwhelmingly as an abstract concept without incorporating the lived experiences and voices of people with disabilities. This becomes evident especially where the article suggests using participatory design for product development for the field in general, yet when student projects in this area are outlined, nowhere in the discussion is it mentioned to possibly include disabled users in the design and testing phase of accessibility classroom projects. This is one of the ways in which this article remains on the level of awareness-raising about the issues surrounding disability. It functions well as a place to start critical discussions about technical communication's role in reinforcing societal norms that favor the more powerful actors of society, but it fails to fully embrace the value that participatory design could add to academic and professional projects focusing on equal access and chipping away some of this power imbalance between designers and disabled users (Kesby et al., 2007).

The second article, "Accessibility Scans and Institutional Activity: An Activity Theory Analysis" by Clay Spinuzzi (2007), is a great example of approaching the topic of accessibility from a functional point of view. Several screenshots of automated accessibility scan results demonstrate the practical aspect of website accessibility. These screenshots are accompanied by a detailed explanation of the additional need for interpretative scans by human actors to catch accessibility violations that are not detectable by machines. But Spinuzzi's article goes further; it argues that "accessibility is a rhetorical enterprise" (p.190) because a consensus is necessary among all the different stakeholders to achieve it. Understanding the interplay between the division of labor, actors, tools, community, rules, and objectives can help us discern just how complex of a process it is whereby a website can be declared accessible. According to the article, the complexity resulting from the interaction within and between activity systems makes the outcome of website accessibility difficult to achieve. Why is website accessibility still a goal that needs to be achieved? The article cites two main reasons for this: compliance with regulations and improving the user experience of disabled users. Though each of these reasons makes the work of creating access worthwhile, the article's main conclusion emphasizes that accessibility is a "moving target" (p. 198) not only because regulations and technologies change but also because it is difficult to prepare for individual variation in the training and application of adaptive technologies at the level of the end user.

While this article exemplifies great care and significant investment of the author's time to make a large collection of websites accessible, declaring accessibility a moving target sends a somewhat different message than the activities described. Accessibility regulations and adaptive technologies certainly change, but so do other types of regulations and technologies used by the "normate" user. In fact, many social and technological factors influence just how much any individual is able to benefit from digital technologies. Accessing information from different types of devices, geographical areas, and networks can significantly im-

pact the user experience in ways that cannot always be assessed ahead of time. In addition, technology and digital literacy skills of users are also factors that affect the user experience and cannot always be anticipated. Thus, by singling out accessibility as a moving target because of the lack of information on how exactly each disabled user will interact with a website, the article implicitly suggests that it is more difficult to ensure a positive user experience for this specific group of users. In this sense, while disabled users are a central concern in this article, they are marginalized from mainstream because their knowledge and application of adaptive tools cannot be anticipated. The idea of incorporating users with disabilities into the design process, thus arriving at a more nuanced understanding of their interactions with websites, does not get mentioned as a solution for this issue.

Further, Spinuzzi's (2007) article, with its truly descriptive focus on activities and regulations as they exist in our society, does not allow for any type of critique of the status quo. Accessibility regulations and institutional policies are fully accepted at face value; none of the activities described go beyond compliance with these rules. As for the user experience, the relationship between adaptive tools and mainstream technologies is never questioned; in fact, examples of website design trends that make the use of adaptive technologies difficult are mentioned, but not critiqued. Overall, while the article provides a detailed view of all the factors involved in making a website accessible on a functional level, no tangible improvements for the disabled user result from such an approach. As men—both colonial and native—speak on behalf of the Sati woman in Gayatri Chakravorty Spivak's (1988) "Can the Subaltern Speak?" throughout this article, Spinuzzi and activity theory speak for the disabled users. Despite all the focus on the activity scans in this article—whose images, by the way, are altogether inaccessible to blind users—the disabled users themselves remain absent from Spinuzzi's article.

The third article, "A Version of Access" (2016), written by Casey Boyle and Nathaniel A. Rivers, approaches accessibility from a philosophical point of view. Accessibility, in the article, is posed as a type of motivation for creating different versions of texts and thus is described as a way to encourage difference. The premise of the article is an occasion when the authors created an audio version of their article for online publication in order to make this article accessible. While creating this audio version, the authors started to add features to it, such as music to signal the beginning and the end of segments that did not have equivalencies in the written text. The article then explores the value of these versions and argues that the differences between the original and nonequal versions open up new avenues for accessible design.

In order to establish versioning as a neutral process, the authors include architectural drawings of a building and argue that the various entrances to the same building, among these, doors at the top of wheelchair ramps, expose the entrants through each door to a different version of the building. While this analogy works well in theory, it does not take into account that wheelchair ramps are often added as afterthoughts to the sides or backs of older buildings and thus

many times lead to obscure parts of buildings before they connect to the main area. A person entering a building through the back door certainly does not get the same impression of the space inside as someone who goes into the building through the main entrance. Thus, arguing for the validity of nonequal versions or compositions, some that are created to make information accessible, to a certain extent promotes the creation of nonequal versions and thus denies the right of people with disabilities to equal embodied experiences.

After setting the scene with the building analogy, the article unpacks this new approach of accessibility the authors call nonequal design through framing it around the binary of consumptive access versus rhetorical access. It makes a similar argument to Spinuzzi's (2007) article as it recites how the constantly changing rules, abilities, and technologies impact the task of creating accessibility and thus transform it into a rhetorical concern. Here, Boyle and Rivers (2016) argue that understanding accessibility from this rhetorical perspective will result in "prioritizing multiplicity as standard" (p. 36) and thus will not privilege any version as original. This would eventually lead to, the authors state, transforming the environment so that disability is not erased but valued. Further, this type of approach will lead to accessibility serving as a motivator to create generative difference. The article concludes by describing three main principles for nonequal design: synecopation, medium specificity, and versioning.

Our analysis questions to evaluate this article helped us to reveal that its strength lies in the authors' following of their own advice. While the article does not reveal the disability status of either of these authors, it suggests the creation of a different social order where everything would be multi-versioned. This vision grew out of an attempt to make texts accessible, and the article suggests several ways in which approaching this work with the nonequal design perspective might bring about social change where texts no longer need to be made accessible but will already evolve as several versions with their own specific rhetorical strengths and affordances. While the nonequal design approach seems to share the same principles as AccessFirst design (Hendren, 2014), which promotes creating products already accessible, it differs from this approach by supporting the creation of different versions as opposed to a specific version that is born accessible.

Further, Boyle and Rivers (2016) explain their theory to the reader without including any voices of people with disabilities. The reader is left wondering what people with their embodied experience of disability might think about versioning, and whether this approach would satisfy them. The only way to really know if this theory has any practical relevance and thus would make a difference in people's lives would be to include people with disabilities in the nonequal design process and then research whether it results in better outcomes. If it does not, the theory, however eloquent, will remain at the theory level without any real potential to bring about real social change that improves the embodied experience of disabled people. In closing this section, we invite the scholarly community to use our seven-point heuristic model as an open-ended analytical tool for evalu-

ating disability studies-focused accessibility scholarship from the perspective of emancipatory and participatory research paradigms. This heuristic model is not only a practical tool for assessing disability scholarship in TPC, but it also can be employed as a pedagogical approach in graduate courses as a framework for teaching the underlying, fundamental tenets of disability studies.

In the second half of this chapter, we first introduce participatory design and participatory action research theories as ways to give a central place to disabled users in the TPC research and pedagogy. We frame these participatory research models within the disability studies research paradigm, which dictates that all research about disability should be emancipatory and applicable to the lived experiences of disabled people. We then incorporate two examples that show how these theoretical frameworks have great potential for making TPC research and pedagogy far more inclusive and participatory of disabled people. These two examples show how extending the definition of participatory design to be participatory action research solves some of the problems we pointed out in our critique of TPC literature above.

■ Proposing Participatory Design and Action Research for the 21st Century

Participatory design refers to design processes that involve users as co-designers and co-creators of product and design concepts. This methodology is rooted in the belief that users possess unique knowledge about their bodies and contexts of use which designers might not share, as it integrates the “genuine decision-making power of the co-designers and the incorporation of their values in the design process and its outcome” (Van der Velden & Mörtberg, 2015, p. 42). Through the involvement of users, participatory design engages the dialectics of “tradition and transcendence” to narrow the distance between what is and what could be (Ehn, 1989; Oswal, 2014). While participatory design methods have deep roots in the Scandinavian work methods research, these design methods have been developed for specific situations in different parts of the world, and vary in purposes and outcomes (Ehn, 2017). The maturation of these methods in the design field over the past four decades has led researchers to define the basic understandings of the field. According to Jesper Simonsen and Toni Robertson (2012), participatory design is “a process of investigating, understanding, reflecting upon, establishing, developing, and supporting mutual learning between multiple participants in collective ‘reflection-in-action’” (p. 2). Besides establishing participatory design as a set of practices that aims to equalize power between designers and users, Finn Kensing and Joan Greenbaum (2012) propound four other principles to guide participatory design: 1) situation-based actions, 2) mutual learning among designers and users, 3) sharing of knowledge about tools and techniques, and 4) openness to alternative visions about technology. Since participatory design practices can entail work among designers, researchers, and participants with signifi-

cant power differential, researchers and theorists in this field have more recently tried to address the questions of ethics to protect vulnerable participants and participant interests (Christiansen, 2014; Frauenberger et al., 2015; Kelly, 2019) and under the label of user-centered design in technical communication (Salvo, 2001).

We endorse participatory design activity between designers and disabled users as a viable proposition for conceptualizing accessible and useable products, processes, and spaces because participatory design research is not about, or on behalf of, disabled users; it is disabled users taking the front seat on the drafting board with professional designers to employ their distinct know-how about disability which originates from their bodily differences and diverse contexts of purpose and use. In the case of “context of use,” design work with disabled users differs significantly from design work with other users because most participatory studies do not focus on this aspect of design. Disabled people bring viewpoints of their own of being in and with the material and social world which shape, at least in part, their human desires, needs, and expectations. Disabled bodies traverse through these worlds at a different pace, in diverse ways, and for succinct purposes to fulfill these needs, desires, and worldly goals which might appear odd, out of place, or even undesirable to a nondisabled eye and a presumably fit body. But participatory design as a process does not have to only apply to product or interface design; it can also be applied to research designs as it has been applied in the contexts of participatory action research (Priestley et al., 2010). We see research designs involving disabled participants and experts to explore scholarly questions relating to disability, or nondisability, as a far more robust model of scholarly inquiry than the research conducted by nondisabled academics. Projects not using a participatory research design model result in products and processes emerging out of only second-hand knowledge of disability—and heavily ridden with ableist assumptions about materiality and presumptions about the disabled body. Most importantly, discounting participatory action research will also lead to ableist research foci which are often devoid of an interest in the value of disabled life and of disability being a way of being in the normate, socio-material worlds.

Because disability in most parts remains invisible in human societies—despite its presence everywhere—and because disabled people’s lived experiences are incomparable sources of knowledge about the human body, we as TPC professionals, researchers, and pedagogues with our own lived experiences of disability believe that participatory research designs are essential for our field to remove its veil of disability ignorance and experience the value of disability first hand. Our ableist academic values have so far denied a place to disability in the university beyond the disability service offices and testing rooms. Even after half a century of Section 504—which gave disabled children a right to secondary school education in the United States—and more than a quarter century of the Americans with Disabilities Act—which allowed disabled students to be considered for college admission—our programmatic and curricular designs are awash

with ableist notions of knowledge, bodies, and human life while disability waits at our classroom doors yet to be admitted to the scholarly spaces. Even when we let disabled students into our classrooms, our exclusionary curricular designs and content—both pedagogically and physically—treat them as occasional guests and expect them to leave their disability outside because we have not yet learned to create a place for disability in our highbrowed academic disciplines. Worse yet, our research paradigms cling on to the pretense that everybody has been carved out to map perfectly on Galton’s bell curve and only these bodies are a fit subject for our scholarly inquiries (Cowan, 1972; Devlin et al., 1995; Fendler & Muzaffar, 2008). In the next section, we present an example of a participatory research design that situates disability in the center while critiquing the status quo in the design of the U.S. academy. Our example also introduces a research method that makes a focal space available to a junior, disabled researcher to articulate her agenda in her own voice.

■ An Example of Participatory Design of a Research Project

According to the critical social model, disability is not simply a condition defined by an impairment or an individual’s functioning level but is also the product of the interaction between individuals and their physical surroundings, institutional structures, and social environments (Kruse & Oswal, 2018; O’Day & Killeen, 2002). Emancipatory research designs have “proven their power to describe and clarify the interdependence of human interaction, cultural attitudes, institutional processes, and public policies” (O’Day & Killeen, 2002, p.9). On the other hand, lived interactions of disability with technology, spaces, and people are complex, and disability-focused user experience (UX) studies can encapsulate fresh insights into how disabled users adapt human bodies, senses, and minds and how they can develop novel, and often individualized, techniques to perform mundane, as well as complex, tasks. These types of studies can also teach us how our widespread, ableist actions and attitudes limit human potential to participate in the everyday life of the academy and of this world.

Emancipatory research guided by the critical social model of disability and participatory design also affects the nature of questions researchers ask and the analysis they perform on the data. For instance, a traditional researcher would ask, “How does your bipolar illness keep you from participating in your classes?” and hold the mental disability of the student responsible for their learning difficulties. The same question framed within the emancipatory research paradigm might ask, “How do your professors’ attitudes about disability, their approach to the delivery of course content, the classroom structure, and the level of accommodations affect your learning?” thus shifting the burden of blame away from the student’s mental or physical impairment and pointing it back toward the societal and environmental factors—the design of the institutional physical and social infrastructure, the ableist university policies, the

exclusionary curriculum that perceives human difference as deviant, and the deeply-entrenched, normate pedagogies.

All of these societal and environmental factors in academia do not take into consideration a variety of bodies as the members of their learning community in the overall conceptualization and planning of the higher education enterprise. The research activity—which in contemporary societies predominantly takes place in the university—is also steeped in these exclusions and views disabled bodies as aberrant. For these reasons, the proponents of emancipatory research from the critical social model of disability assert that “Disabled people have come to see research as a violation of their experience, as irrelevant to their needs and as failing to improve their material circumstances and quality of life” (Oliver, 1992, p. 105).

Academics conducting research studies with disabled people often disassociate themselves from their participants once they have gathered data, and any later contact is generally for the formality of validating their results. The multiple steps of data analysis, the writing of the study, and the dissemination process are fully controlled by the academic and professional needs of the researcher. The voices of the disabled participants at the writing stage not only become subservient to the demands of the conventions of the genre chosen for dissemination, publication venue, and the dissemination process itself but also get removed from the original context and purposes for which the participants might have invested their time and energy. The claim from almost three decades ago—“research has been and essentially still is, an activity carried out by those who have power upon those who do not”—still holds water for most research designs in the academy (Oliver, 1992, p. 110).

The research design by Allison Kruse and Sushil Oswal (2018) described here is an example of participatory research design which focuses on the lived experiences of an undergraduate technical communication student with a bipolar disorder diagnosis and a professor with a sensory disability. In this participatorily designed scholarly work, Kruse not only presents an account of an ableist university campus through an autoethnography, but also goes on to subtly bracket the ableisms disabled students often internalize in the elite environment of the university. Such internalization by disabled students refrains them from questioning the problematics of their existence in a space especially reserved for learning and critique.

The basics of this participatory study design are ordinary. Kruse is exposed to a minor discussion of disability and accessibility in one of the four courses she studies with Oswal, a professor with a sensory disability. Toward her senior year, Kruse expresses interest in conducting a term-long independent research project relating to disability and accessibility under Oswal's direction. The research project is defined by Kruse's academic interests and soon moves in the direction of more emphasis on disability studies and the access conditions in the academy. This study of published research also begins the process of disability disclosure for Kruse with her professor, and this is the point when the student becomes the informed participant and expert of lived experiences with bipolar disorder. The

research project at this point takes a turn toward an additional component of Kruse's composing of an autoethnography of the academic accommodations of a person with bipolar disorder diagnosis, and this project now becomes the focus of a joint research project for publication where Kruse becomes the lead author due to her expertise with the lived experiences of a mental disability in the academy. Equally significant is the role she begins to play in the design of the manuscript for publication, which by no means resembles the shape of a typical scholarly article as the readers of this chapter might discover in their perusal of the end result (Kruse & Oswal, 2018) of this participatory collaboration.

We selected this research article published in an open-access, European journal as an example of participatory research design to highlight the productive potential of this type of research where an established researcher co-designs a study of academic ableism with a disabled student, walks her through the research and publication process, and participates in analyzing and reporting the results. At some point in this process, the two become co-authors in the professional sense of the word and, through Kruse's participatory autoethnography, construct a visionary design of university which not only performs its fiduciary duty under The Americans with Disabilities Act to educate all students that enter through its gates but also sees it as an inseparable component of the educational ethics.

Kruse and Oswal (2018) categorically avoid making a legal claim—as stated in their abstract and again stressed in their introduction and analysis later in the article. As the synopsis of the circumstances of this collaboration narrated above reveals, the two co-authors, who recruited each other in different ways for becoming participants in this project and collaboratively compiling the implications of this autoethnographic study by the primary author, flip-flopped in determining whether or not their position statement should emphasize the legal over the ethical. The two authors deliberated over the issue together and weighed the purpose of their project again. The legal aspect was eventually pushed back because they determined that their goal was not to ask for more legal accommodations but to make the academy less ableist. The nature of mental disabilities required acceptance, not legal redress. Thus, at the point where Kruse began to rewrite her analysis of the autoethnography for a journal audience, Oswal's role as an expert in this independent research study had fallen by the wayside because Kruse's expertise of writing about the lived experiences of a mental disability had come to occupy that space.

By the time Kruse and Oswal finished deciding how to write the implications of the study and make a proposal to design the academic environments for a more disabled-friendly mental and physical space, they were two disability activists taking scholarly decisions and applying their individual expertise in the lived experiences of disability for a shared task. The social relations of research production also had moved to another space, and the professor was now a co-activist of sorts against the barriers for students with mental disabilities. Their joint article—which began as an autoethnography of a student with a bipolar disorder

diagnosis—moved closer to the theme of “changers for change” (Lather, 1987; Oliver, 1992). The emancipatory paradigm of research and the participant design methodologies had built “trust and respect” among the collaborators, and the resulting “reciprocity” facilitated “a politics of the possible” between the two members of the academy to confront social oppression (Oliver, 1992, p. 107 & p. 110).

On the research design side, this study tries to bridge the researcher-participant gap in conceiving, conducting, and writing up this scholarly project. We see that by making the Kruse autoethnography a centerpiece of this scholarly article, Kruse and Oswal foreground what would otherwise have been a marginalized “participant voice” in a more traditionally structured scholarly article in the form of third-person descriptions and scattered quotations from the participant narrative. By conceptualizing, designing, and composing the article as co-authors, they try to dismantle the researcher-participant and instructor-student hierarchy and present an alternative research design for studying the academy. In fact, for the purposes of our chapter, their relationship is strictly that of two scholars collaborating on a project where Kruse is the lead author and her narrative voice defines the purpose and structure of this study. Had there been an opportunity available, they might have disseminated their results through other means—a conference paper or a website blog—before publishing this work in the *Social Inclusion* journal. Further on, as we worked on this chapter, Kruse reviewed this section about the article development process to provide her feedback.

While we do not want to construct another hierarchy by indulging in the discourse of empowerment in this context, the outcome of the Kruse and Oswal collaboration is an activist experience of two disabled members of the academy—one as the user of its services and the other as an employee—who have participated in a collaborative act of social action employing the emancipatory, participatory research design and the scholarly genre of an article. Just as a visual artist with little knowledge of web design might become a participant in the development of a website with a web art designer to get their work recognized but might end up becoming a web art designer themselves, Kruse and Oswal participated in this project and participatorily designed this research study to realize the potential of their different expertise about disability, disability studies, and scholarly work (Alexander, 2010). Further on, Kruse had used her autoethnography as a form of narrative inquiry meant for reflection, analysis, and interpretation from a personal and local context to a wider institutional or socio-cultural frame and gained a voice to critique the academy (Berger & Quinney, 2005; Chang, 2008; Ellis et al., 2011).

Defining Participatory Action Research for the Technical Communication Classroom

Before turning to the discussion of our second example, we also want to define and differentiate participatory design research concepts from participatory ac-

tion research—the latter being quite relevant for our TPC pedagogy to prepare students in the basics of accessible design through action research with disabled users (Foth & Axup, 2006). Here, we will highlight the most important aspects of participatory action research, which has been successfully employed in the global south for health, socioeconomic, and pedagogical purposes (Etmanski & Pant, 2007; Tanabe et al., 2018; Wallerstein et al., 2017).

Participatory approaches have also been employed by grassroots groups for community-based action research, particularly in the majority world, as a response to the university-based researchers who tend to look down upon underprivileged participants and small-scale non-governmental organizations (NGOs) of this nature (Brown & Tandon, 1983; Hall, 1982/2002; Kothari, 2001; Parpart, 1995). Disabled people in the global north share many of the characteristics and exclusions with these majority world groups of the global south, and participatory action research is an attractive option for them to advance their socioeconomic agenda because the disabled are among the poorest of the poor amidst an ocean of middle-class consumerism and the wasteful opulence of the rich. Instead of all the talk about social justice, TPC classes can employ participatory action research to work with and to learn from disabled participants. Often when we talk about social justice, we are talking about someone delivering social justice to someone else—in this context, a disabled person—thus creating the giver/recipient binary. Social justice approaches help their advocates accrue social capital for themselves, build careers, and practice professional and social power through their words in an arena of activity where they are, in fact, perpetuating structural inequities at the cost of further marginalizing the recipient. Disabled people rejected this position many decades ago and hence the slogans “Nothing about us without us” and, more recently, “Nothing without us” (Charlton, 1998; Crowther, 2007).

From the perspective of disabled users, participatory design practices have room for defining and redefining the fundamental concepts of designs; processes; products; the imagined and real contexts of use; and relationships among designers, researchers, and disabled participants, the last being of utmost relevance to bodies with a difference. We find participatory action research well-suited for usability and accessibility-centered pedagogy in the human-centered design and technical communication courses to immerse our students in work with a rarely explored customer category. As compared to other “do good” approaches like service learning and social justice, participant action research does not only engage disabled users in the technical communication activity, it lets them occupy a central space in all aspects of the inquiry whether it is aimed at theory building or is tackling a practical problem. Bob Dick and Davydd J. Greenwood (2015) stress that “for action researchers a key concept is a dual commitment to both participation and action. Action research is done with, rather than on, the participants” (p. 194). Participatory action research cracks the binary of theory and method due to its firm commitment to a cycle of research and reflection aimed at refining methods and building theory that could help participants solve their

problems. Quoting Dick and Greenwood again, “the core of action research is the constant confrontation of reflection and action, theory and method, theory and practice aimed at producing understanding and effective action” (2015, p. 195). Participatory action research is particularly relevant for the disabled participants because they have been marginalized in the academy since time immemorial and academic research—whether it is Galton’s scientific ideas of normalcy or the medical establishment’s castigation of the disabled body—has played a key role in this marginalization (Fendler & Muzaffar, 2008; Oliver, 1996; Priestley, 1999).

■ An Example of Participatory Action Research in the Classroom

For implementing the inclusive pedagogy agenda in the TPC classroom, we advocate for participatory action research-oriented curriculum that engages undergraduate students in inclusive data gathering, data analysis, writing up of results, and presentation of results to a live audience of peers or clients. The projects in such a curriculum would directly involve disabled consumers’ and employees’ day-to-day user experiences with technology, information designs, websites, and, of course, print documents (Davis, 2000; McFarlane & Hansen, 2007). We describe this pedagogical approach through an example from our own classes. Both of us teach accessibility concepts in our TPC web design assignments, and we usually assign readings from published research and “how-to” articles by practitioners to familiarize students with the accessibility problems as well as to instruct them to design accessible pages. We share an instance of the participation action research that, in fact, happened on the initiative of a student and which went beyond traditional involvement of disabled users as cursory testers. While we cannot share direct excerpts from the work of this student group because a member of this group took this participatory action research initiative rather spontaneously, we provide a detailed description of how the pedagogy of such participatory action research can be orchestrated. We might also disclose that our course under discussion was covered by an Institutional Review Board (IRB) approval for an international teaching collaboration among three instructors—two of whom are the authors of this chapter—but our application did not specifically include interactions with disabled participants—a protected class under the U.S. federal government’s guidelines for research with such “subjects” as well as those of our universities. Consequently, our research approval at this time allows somewhat limited use of student work in our publications. (For more details about the purpose and nature of this international, intercultural collaboration, see Koris et al., 2019; Oswal & Palmer, 2018; Palmer et al., 2020). We, nevertheless, chose this example of participatory action research pedagogy because it was successful in achieving the desired results, required limited planning on behalf of the group, and affected the whole class’ overall understanding about disabled user experience, accessibility issues, and the value of participatory design research itself.

■ Disabled Users as Experts and Equals

In the aforementioned teaching project, our students work in groups on web design and web accessibility projects in a client-provider relationship using low-tech tools, such as email and the Moodle learning management system, for their collaboration. The purpose of this assignment unit is to help students learn:

- what accessibility barriers web users with diverse disabilities face;
- what disability laws exist to ensure accessibility and their inherent limitations;
- what WCAG 2.0 and Section 508 accessibility guidelines are and how they are often implemented;
- how to conduct a website accessibility test employing an automated checker or a screen reader and collect pertinent data;
- how to interpret the data from these test results, including the skills for reading the reports produced by the automated checker software;
- and, of course, how to package the results from the data analysis for a live presentation as well as a written report.

In Sushil's program's gateway course, "Technical Communication in the Workplace," which is generally populated by information technology, computer science, and technical communication majors, students evaluate the website drafts designed by Zsuzsanna's business communication students earlier in the same semester. Then, Zsuzsanna's student groups revise their websites' designs using the accessibility test reports composed by Sushil's groups. Sushil's students write these reports after having conducted machine tests on these website drafts employing automated tools like *WAVE* and *AChecker* along with a variety of color contrast checkers of the group's choice to evaluate how well the websites meet the WCAG standards, WCAG AA being the desired level of accessibility. These groups' testing procedures can also involve testing of the web pages with Microsoft's Narrator or Freedom Scientific's JAWS-for-Windows screen reader by student teams. The students informally interviewed their instructor—who is an experienced screen reader user—to learn how he employed assistive technology to interact with web pages and what personal preferences he had for various features of a web page.

Although students are interacting with an experienced, disabled web user and have the opportunity to see the context of use from a technologically literate instructor's perspective, these interactions are happening within the unseen boundary of instructor-student relationship in a classroom setting. In a recent iteration of this course collaboration, however, a member of one of the student groups decided to observe and interview a fellow employee with cerebral palsy who not only used a screen reader but also used it differently. The employee under discussion had some residual sight but was dependent on the screen reader for reading and writing online. Their additional disabilities mixed with their residual

sight—which gave them a good sense of the sort of ease and comfort sighted web users experience when online—made this user a highly vocal critic of the web design community.

Not only did this participant's comments give this group some powerful insights into screen reader use and web accessibility problems, but they also made students conscious of how this employee spoke about the poor quality of online designs with a sense of privilege and entitlement. The students' interest and trust in this participant's knowledge and the suggestions they received for improving the design of the website this group was testing markedly benefited this group's report. Later, this group leveraged this participant knowledge to support their recommendations when they video-conferenced with their web designer partner group to brief them on their report. During the class presentation of their group's website evaluation, the group included slides about this disabled tester's feedback. Amidst their presentation, the lead student interjected an aside: "I wish that we had Jim [a pseudonym] participating in this presentation to help us understand the web accessibility barriers he confronts on a daily basis and what accessibility features he will like to see in these web pages." We agree, and, as many European researchers affirm this sentiment, disabled participants should be involved in all stages of research (Iversen & Leong, 2012; Van der Velden & Mörtberg, 2015). Whereas this student's impromptu remark during the presentation suggests that he has come to realize the purpose and meaning of self-representation, his earlier conversation with Sushil about the spontaneous steps he had taken to observe, interview, and record this participant's testing-oriented, action research on web pages expressed a sense of awe in receiving feedback from a typical disabled user. During this conversation, the student also compared the results of his own test on these web pages with Microsoft's Narrator to those of Jim and explained how he had made so many assumptions about disabled users which were not accurate at all. Not only was this experience of participatory action research transformative for this student, his discussion also affected other students' attitudes toward the learning about disability and accessibility in this course. The participatory experience also served as an additional motivation for this student to take this project further, and he later converted the accessibility guidelines he wrote for this class assignment into a short article for *Intercom* (Marquardt, 2019).

On the instructor end, we're trying to incorporate such a participatory action research component in this web testing unit and are running into the usual hurdles—institutional rules about not disclosing the identity of disabled students—some of which are essential to protect student privacy and disability stigmatization. Students on their own are, however, free to find contacts for such testing on and off campus. For example, in the past, in another course of ours, students found participants for such action research through their connections with the student government. Sushil is also looking for IRB-approved research models which would permit ongoing participatory action research involving student groups. If we move to such a model, it would expand the scope of this project

and further complicate the pedagogy of this testing unit, but our students would also have the opportunity to learn about the intricacies of IRB-approved research with participants from protected classes. The greatest advantage of incorporating participatory action research in this unit is that the accessible design pedagogy will give a front seat to the disabled users by including their voices directly. The students will learn how to include disabled participants in their action research as well as to value their viewpoint as experts in their area of disability and, sometimes, as assistive technology experts in their own right as long-term users. As we know from the long history of participatory design research, the participants don't only provide us with insights into user preferences but also open up a window into their economic, cultural, and aesthetic values (Iversen et al., 2010; Iversen & Leong, 2012; Schuler & Namioka, 1993; Voß et al., 2007). Participatory action research pedagogy can get along with the research models advocated by disability studies scholars under the rubric of emancipatory paradigm, and disability values-led participatory designs can serve all users a great deal better (Barnes, 2009; Morris, 1992; Oliver, 1997). If we do our due diligence to recruit participants with assistive technology experience and learn to mediate participatory design activity with humility, we might also see the emergence of novel designs that get out of the old rut of "features and more features" without delivering additional affordances for the capabilities of diverse humanity. By overcoming our ivory tower arrogance and ableism toward disability, not only can these participants become our co-creators and co-problem-solvers in conceptualizing more complete designs but we also might fill the gaping gaps in our academic training about disability. We need not remind our readers that the best of our human-centered designs at this time serve less than 80 percent of humanity, because these designs do not meet the needs of at least 20 percent of the human population with an array of disabilities. These users pay for these designs like all other consumers, invest their time in learning the use of these designs, and yet cannot achieve even their basic functional purposes due to the built-in design flaws in our technologies, web pages, and information. We iterate that these flaws exist because of our ignorance about disabled bodies, the value systems these users embody, and how they employ our design products to their purposes.

■ Conclusion

At this point, we stop to ask ourselves this rhetorical question: "Should participatory approaches be an essential aspect of the design cycle if we desire to develop accessible and usable interfaces, interactions, and products that provide disabled users with the same type of user experience that nondisabled users have come to expect?" and we answer it with a resounding "Yes." Our chapter interrogates the approaches and attitudes that posit unlimited authority in technological determinism and expert knowledge to solve disability and accessibility problems. The outcome of this interrogation is that neither our TPC pedagogy nor our research

practices appear accessible from the perspective of disabled users. Instead, we advance the participatory design and participatory action research approaches, which engage disabled users right up front, for gaining primary insights into what disabled bodies desire and how they function with people, technologies, and communication. The implication of such methodological change for the TPC field will require a paradigm shift about how we perceive disability, interact with disabled users, and conceive the concept of accessibility itself. It would mean that our field will have to make room for disabled bodies in our classrooms, research projects, and field practice because disabled people are almost invisible in these spaces. It would also mean that we will have to seek out opportunities to actively learn from the user experiences and user expertise about accessibility that these bodies will bring with themselves to our discipline (Oswal, 2019). By ceding some of our expert power to these participants, our field would become more inclusive and more complete. Considering the limited knowledge most designers, developers, and researchers possess about disability, assistive technology, and, above all, disabled people, without conducting participatory design work with active involvement from disabled users, experts, and potential users, we can't even pretend to have done a reasonable needs assessment for determining, at least, threshold-level design characteristics for accessibility.

We further advocate that TPC professionals adopt a design regime driven by a participatory and reiterative user testing cycle in a variety of user contexts and environments over the life cycle of processes and products so that the initial design features do not get lost at later stages. Additionally, we argue that we need a new framework for assessing information and communication designs which goes beyond following the WCAG 2.0 checklist and would benchmark accessibility progress relative to the autonomy and ease bestowed upon disabled users in achieving their professional and personal ends (Leuthold et al., 2008). We also ask designers, developers, and technical communicators to question the introduction of inaccessible, trendy technologies that, in fact, serve only a small percentage of even nondisabled users. We end this chapter by repeating the affirmative note: Yes, active participation by disabled users in conceptualizing, implementing, and testing designs can serve as a lynchpin to make accessible products and processes a reality at the end of the production cycle. Scholarly work relating to such design projects can also contribute novel and constructive knowledge to our field. The adoption of disabled-centered participatory action research for our pedagogy will not only prepare our students for a more just and equity-oriented practice but also lessen ableist attitudes in the academy and in their future workplaces.

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