Can There be DEI Without Accessibility?

Brianna Blaser
DO-IT
University of Washington
Seattle, USA
blaser@uw.edu

Richard E. Ladner
Paul G. Allen School of CS & Engineering
University of Washington
Seattle, USA
ladner@cs.washington.edu

***Abstract*—Disability and accessibility are often left out of policies and actions related to diversity, equity, and inclusion (DEI). Despite progress on including disability and accessibility in broadening participation in computing (BPC) efforts over the past fifteen years, the idea of including people with disabilities in the groups that are minoritized in computing is still not universal. In this article we document successes in including disability in BPC efforts and where and how improvement can be made. We will argue that without explicitly calling out disability and accessibility, DEI policies and actions replicate the ableism present in our existing institutions.**

Keywords—disability, accessibility, BPC, DEI, DEIA

I. Introduction

In June 2021, President Biden signed Executive Order 14035 to advance diversity, equity, inclusion, and accessibility (DEIA) in the federal workforce [1]. The accompanying fact sheet states, "The federal government is stronger and more successful when individuals with disabilities have equal opportunities to lead at every level." As disability advocates, we immediately noticed the inclusion of accessibility. Although you could argue that DEI must inherently include accessibility, in our experience this is often not the case. In the BPC community, accessibility is generally an afterthought. Other times, it is treated as an issue of being in compliance with legal mandates rather than related to justice and equity. Accessibility needs to be fully integrated into our community's BPC efforts to meaningfully include people with disabilities. By attending to accessibility more fully and utilizing universal design principles, computing fields can become more welcoming to the largest group possible.

BPC efforts involve work with a number of different minoritized groups including women; Black/African American, Latinx/Hispanic, and Indigenous/Native American individuals; lesbian, gay, bisexual, transgender, queer, intersex, and asexual (LGBTQIA+); and other groups. Disability intersects with all these demographics and cannot be siloed. Regardless of the particular focus of any BPC efforts, disability and accessibility must be considered, or disabled individuals will be limited in their participation in BPC activities. We begin by looking at the progress that has been made in BPC organizations, conference accessibility, and disability data.

II. DEIA Successes

Several BPC organizations have embraced disability in their missions and activities. AccessComputing was founded in 2006 as one of the earliest NSF-funded BPC Alliances with the specific goal of increasing the participation of people with disabilities in computing fields. Since its inception, AccessComputing has taken an intersectional approach through fostering partnerships with other BPC organizations in order to help them be more accessible and welcoming to people in their constituent groups who have disabilities. Founded in 2010, The Center for Minorities and People with Disabilities in Information Technology (CMD-IT) presents the annual Tapia Celebration of Diversity in Computing and integrates concerns about accessibility throughout all their activities. More recently, in 2019, the Computing Research Association rebranded its Committee on Women to the Committee on Widening Participation (CRA-WP) as to "reflect [their] broader mandate with a mission of serving a wide range of constituencies," including people with disabilities [2]. The relatively new NSF-funded INCLUDES Alliance for Identity-Inclusive Computing Education (AiiCE) has taken a broad approach to creating equitable and inclusive computing environments, including accessibility prominently in its mission and activities. The Computer Science Teachers Association (CSTA) has also taken a broad view of the teachers and students it serves with its very new CSAccess Working Group and more established Equity Fellows program [3].

With regard to conferences, several BPC conferences have taken significant steps to being accessible. In 2019, the Tapia Celebration of Diversity instituted an accessibility chair to ensure their meeting is accessible. The RESPECT conference did the same in 2022. The CRA-WP Grad Cohort Workshop for Inclusion, Diversity, Equity, Accessibility, and Leadership Skills (IDEALS), established in 2018, has been welcoming and accessible to graduate students and, as of this year, CSTA is working with the CSAccess Working Group to increase accessibility of their organization and conference.

Although most projects in the BPC community fail to collect data on disability [4], there has been progress in the past several years. Notably, in 2020 the State of CS Education Report began reporting on the participation of students with disabilities in K-12 CS education. Among the states that reported on disability data, 8% of high school students in a computing course have a disability served under Individuals with Disabilities Education Act (IDEA). This contrasts with the 14% of all students in the country who are served under IDEA [5]. In 2021, the CRA's Taulbee survey began asking participating computing departments to provide data about students with disabilities. The departments that responded to the survey indicated that less than 1% of both master's and Ph.D. students received accommodations and 4.1% of undergraduate majors received disability-related accommodations [6]. In 2022, the Kapor

Center and CSTA's CS Teacher Landscape Report considered disability in K-12 settings [7]. It was reported that 9% of K-12 CS teachers had a disability and that only 20% of CS teachers reported teaching about accessibility.

III. Room for Growth

In spite of the progress mentioned above, the computing community has not fully embraced disability as part of the DEI efforts. One indicator of this comes from analyzing the departmental BPC plans on BPCNet.org. One major purpose of departmental BPC plans is that they can be used by individual principle investigators (PIs) in crafting their own NSF BPC plans in their NSF proposals. Unfortunately, as of this writing, there are 85 departmental plans shared via the BPCnet website, with only 20 of the plans even mentioning disability or accessibility. Some merely state that they consider students with disabilities to be a marginalized group. Others note that they do not collect data about disability. On the positive side, there are several notable efforts. Six institutions described efforts related to collecting data related to disability. Both Texas A&M's Computer Science and Engineering Department and Electrical and Computer Engineering Department have set specific quantifiable goals related to increasing the representation of students with disabilities. Cornell notes that they are "part of a coalition that aims to increase the number of disabled students who complete PhD programs." Vanderbilt aims to increase the participation of students with disabilities in mentoring programs. Although 20 of the 85 plans (23.5%) mention disability, only 8 (9.4%) commit to collecting data or taking specific steps related to accessibility. At the very least, we hold that BPC plans should mention disability.

We see a similar lack of attention to disability and accessibility if we consider the papers that have been published at RESPECT since its inception in 2015. RESPECT claims to be "the premier venue for research on equity, inclusion, and justice in computing and computing education." Among the papers published at the first seven RESPECT meetings, only 11 out of 178 (6%) focused on disability. If this is the premier venue for research on BPC, what does this say about the value this community places on accessibility and disability inclusion?

IV. Moving Forward

How can we as the BPC community embrace the disability community and more towards more accessible computing education and employment? We call for our colleagues to take these actions:

- Recognize that disability cuts across all demographics and should be considered in all BPC efforts.
- Take time to learn about disability and accessibility via books and documentaries, especially those that address disability in a demographic you are working with.
- Engage with organizations that consider accessibility in BPC efforts. Join an AccessComputing Community of Practice, attend the Tapia Celebration, or connect with one of the groups mentioned previously.
- Collect disability data when gathering other demographic information.
- Establish clear procedures for people with disabilities to request accommodations.

With respect to including disability and accessibility in BPC efforts, and more generally in DEI efforts, there has been progress, but it has been spotty. As accessibility advocates, we are distinctly excited when we meet anyone in our community engaged in accessibility because it is so rare. The federal government has taken the stance in hiring and retention of employees to explicitly call out disability and accessibility with the Executive Order 14035 on DEIA. Those of us in the BPC community are leading the way to help computing departments, organizations, and companies to become more diverse, equitable, and inclusive. By addressing accessibility, you can make sure that people with disabilities are not an afterthought. We need to be explicit and embrace DEIA.

Acknowledgment

The content of this article is based on work supported by the National Science Foundation (CNS-2137312 and 2118453). Any opinions, findings, and conclusions or recommendations are those of the author and do not necessarily reflect the policy or views of the federal government.

References

[1] The White House. (2021, June 25). FACT SHEET: President Biden signs executive order advancing diversity, equity, inclusion, and accessibility in the federal government. Executive Order 14035. *Briefing Room Statements and Releases*. https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/25/fact-sheet-president-biden-signs-executive-order-advancing-diversity-equity-inclusion-and-accessibility-in-the-federal-government/

[2] Computer Research Association - Widening Participation. (n.d.). The history of CRA-WP. https://cra.org/cra-wp/history/

[3] Hozore, E., & Ladner, R. E. (2023, Jan 9). The CSAccess working group. *Computer Science Teacher's Association Stories*. https://www.csteachers.org/Stories/the-csaccess-working-group.

[4] Blaser, B., & Ladner, R. E. (2020). Why is data on disability so hard to collect and understand? In proceedings from RESPECT '20: *The 5th international conference on Research in Equity and Sustained Participation in Engineering, Computing, and Technology*, 19-26.

[5] Code.org, CSTA, & ECEP Alliance (2022). 2022 state of computer science education: Understanding our national imperative. https://advocacy.code.org/2022_state_of_cs.pdf

[6] Zweben, S., & Bizot, B. (2022). CRA 2021 Taulbee Survey: CS Enrollment Grows at All Degree Levels, With Increased Gender Diversity. CRA *Taulbee Survey, 34*(5), 2-82. https://cra.org/crn/wp-content/uploads/sites/7/2022/05/May-22-CRN.pdf

[7] Koshy, S., Twarek, B., Bashir, D., Glass, S., Goins, R., Cruz Novohatski, L., & Scott, A. (2022). Moving towards a vision of equitable computer science: Results of a landscape survey of PreK-12 CS teachers in the United States. Retrieved from: https://landscape.csteachers.org.