

Exploring Identity Negotiation within Disabled, International Women of Color Pursuing Undergraduate Engineering Degrees

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Abstract

This Empirical Research, Work-in-Progress (WIP) paper explores intersectionality within the disabled community, utilizing narrative accounts to highlight the complex and layered experiences of these individuals who navigate multiple marginalized identities in engineering education. Diversity, equity, and inclusion efforts within engineering education often overlook the experiences of disabled students, treating them as a monolithic group. This study seeks to disrupt this narrative by foregrounding the nuanced ways in which disabled students negotiate their identities within ableist environments. The broader research study investigates how disability is often isolated as a singular aspect of identity without adequate consideration for how it intersects with other axes of identity. Through narrative inquiry, this study examines how disabled, international Women of Color in undergraduate engineering negotiate and recognize their disabilities within higher education. This WIP paper presents the narrative of Leah, a disabled, international Woman of Color enrolled in an engineering undergraduate program.

Keywords: *Disabled, Students with Disabilities, Women of Color, International Students, Undergraduate, Student Experience, Narrative Inquiry*

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Introduction

Who gets to be seen, heard, and valued in engineering education? While much attention has been given to increasing representation, representation alone does not ensure inclusion. For students who exist at the intersections of multiple identities, their experiences reveal critical gaps in how we understand access, belonging, and success in engineering spaces. Disability, in particular, remains an overlooked aspect of identity in engineering education and is frequently treated as an afterthought rather than a fundamental consideration in discussions of equity [1–4]. Existing research tends to generalize disability experiences, ignoring the complex ways in which disabled students navigate higher education [5–12]. For disabled students with intersecting marginalized identities, their disability is often minimized as a survival strategy to cope with other forms of discrimination [13].

This study seeks to expand the use of intersectionality frameworks to better understand the breadth of experiences within the disabled community. Through narrative inquiry, we investigate how disabled, international Women of Color in engineering negotiate their identities, resist intersectional erasure, and navigate systemic barriers. Our broader research question is: *How do disabled, international Women of Color in undergraduate engineering programs negotiate and recognize their disability in higher education?* This WIP paper focuses on one student, Leah, and examines how her experiences contribute to answering this research question.

Background: Intersectionality and Identity Negotiation within the Disabled Community

Disabled students with multiple marginalized identities often feel compelled to “downplay” their disabilities to navigate other forms of oppression, resulting in the erasure of disability as a component of their identities [13]. Abes and Wallace [13] describe this phenomenon as “intersectional erasure,” where disability is objectified and seen as additive, rather than as an integral, intersectional component to one’s identity. Disabled international engineering students, moreover, are simultaneously negotiating what it means to be disabled within the U.S., engineering, and higher education, where the intersections of race, gender, disability, and nationality present a distinctly complex landscape [13–20].

Intersectionality offers an avenue to center disability while critiquing ableist contexts by foregrounding intersecting systems of oppression, examining how these systems impact lived experience, and demanding social change [13, 21]. Intersectionality as a concept emerged from Black feminist scholarship to address the unique experiences of marginalization faced by Black women, recognizing that the compounded effects of racism and sexism were not being adequately addressed by focusing on single factors alone [21, 22]. The concept of intersectionality has since been broadened to encompass other traditionally marginalized identities, including disability. Although research surrounding intersectional ableism is in its infancy, there have been repeated calls for a more robust use of intersectionality when researching and working alongside the disabled community (e.g., [13, 23, 24]). Our goal in this study is to amplify Leah’s narrative and showcase how intersecting layers of her identities contribute to her experiences in engineering. This approach allows for a more comprehensive exploration of the complexities of her identities, which is crucial for developing effective policies, programs, and interventions that not only address the symptoms of systematic erasure but dismantle the structures that perpetuate them.

Methods

This study was designed using narrative inquiry and guided by Crip Theory [25] and Critical Race Feminism [26]. The findings presented in this paper are a subset of a larger project and data collection effort that focuses more broadly on the experiences of disabled students in undergraduate engineering programs.

Co-Creators

Guided by Crip Theory [25] and the study's critical paradigm, we use the term "co-creators" rather than "participants" to reflect the collaborative nature of this research and emphasize the active role of disabled students in shaping knowledge production.

This study draws from semi-structured interviews with 27 disabled engineering students (co-creators) across three institutions during the 2022-2023 and 2023-2024 academic years. The co-creators' shared lived experiences explicitized the important interplay between geography and their experiences of being disabled, which led us to further examine individuals' experiences in their situated contexts. This paper specifically presents the lived experiences of Leah, a disabled, Woman of Color and international student. At the time of data collection and analysis, Leah was enrolled in an undergraduate engineering degree program at a large, public, research-intensive (R1) university in the southern U.S.

Data Collection

Co-creators were recruited through emails sent by each university's disability resource office and engineering department(s) to undergraduate students. These emails outlined eligibility criteria, which required co-creators to be currently enrolled undergraduate engineering students at that university who identify as disabled or as a person with disabilities. The emails invited eligible individuals to participate in the study by reflecting on their disability-related experiences at their university. Additionally, the emails detailed the participation process and offered a \$40 gift card as compensation upon completing the interview. To ensure eligibility and gather background information, co-creators completed a screening and demographic survey. Eligible co-creators were then invited to a virtual, semi-structured interview lasting 60 to 90 minutes and facilitated by the first author.

The interview protocol was constructed using the five dimensions of narrative inquiry [27, 28]. These dimensions explore personal conditions (e.g., feelings, hopes), spatiality (e.g., environment, external conditions), sociality (e.g., relationships, cultural context), temporality (e.g., past, present, future), and plot (e.g., key events, turning points, resolution). The protocol included eight primary questions and related probes designed to examine how co-creators' intersecting identities (e.g., disability, gender, race, ethnicity, citizenship) shaped their undergraduate engineering experiences. Questions began with, "What identities do you hold?" and progressed to exploring how these identities influenced self-perception, engineering experiences, and belonging. Member checking followed the interviews, offering co-creators the opportunity to clarify statements, redact content, or provide additional reflections.

Data Analysis and Trustworthiness

Interview transcripts were de-identified prior to analysis to protect the confidentiality of co-creators. The de-identified transcripts were uploaded into Dedoose [29] for thematic analysis [30, 31], grounded in a critical paradigm. The process began with open coding to identify recurring themes across the co-creator's educational journeys. This was followed by pattern coding, which organized these themes into five key dimensions: coping strategies, contextual

supports, intersectionality within the disabled identity, the impact of identities, and institutionally driven hardships. This iterative process allowed for a detailed examination of identity negotiation within the co-creators' educational environments.

To enhance the trustworthiness of this study, multiple validation strategies were employed [31, 32]. The research team engaged in reflexive discussions throughout data collection, coding, and interpretation to mitigate biases and critically assess emerging themes. Peer debriefing sessions were conducted to incorporate diverse perspectives and validate the findings. Finally, an external audit was performed by researchers unaffiliated with the coding process to assess the coherence and credibility of the final interpretations.

Preliminary Findings: Leah's Narrative

Leah is a disabled, Middle Eastern international student in her fifth and final year of a biomedical engineering undergraduate program. She is also a sister, a fierce advocate, and a deep thinker who contemplates her place in the world. Her journey through engineering is intricately tied to her identity as an international student. "The place that I feel like I can occupy is completely defined by what my passport says," Leah explains. Despite excelling academically, her visa status has restricted her access to internships, jobs, and other professional opportunities that her peers take for granted. "It's hard to hear everyone else doing all these things that I'm legally not allowed to do. It's a constant reminder of what I'm up against."

Leah reflects on the challenges of finding community within the Middle Eastern diaspora in the U.S. She notes the heightened fear of visibility due to political tensions and the potential consequences of being associated with student organizations affiliated with her home country. "There's always this undercurrent of fear. Even if you're just gathering to eat snacks from back home, you're wondering if it's too extreme to even be there," she shares.

Leah's experiences as a disabled woman add another layer to her multifaceted identity. Her health challenges have been both physical and mental. These conditions have significantly shaped her academic trajectory, necessitating accommodations such as flexible deadlines, attendance leniency, and priority registration. Yet, Leah's journey to secure these accommodations has not been easy. "It took me years to convince the right people that I needed help," she recalls, emphasizing the emotional labor required to navigate a bureaucracy that often dismissed her needs.

Her determination to succeed in an engineering program is deeply tied to her sense of survival. "For me, it wasn't just about getting through school. It was about staying in the country," she explains. The stakes of maintaining full-time enrollment and a high GPA while managing her health created immense pressure. "You're expected to work at 110%, knowing you'll fail to meet that. And when you do, the system isn't there to catch you."

Leah's cultural upbringing further complicated her relationship with disability. Growing up in a society where mental health was stigmatized, she often internalized messages to "brush it off and persist." These beliefs initially shaped her approach to seeking help in the U.S., where she viewed accommodations as a means to survive academically rather than as a form of self-care. "It started as a survival tactic," she admits. "But over time, I realized I needed to allow myself to rest and be unwell."

Still, she describes the strength she's gained from navigating the systemic barriers related to her identity as a "superpower." "The intersectionality of my identity is the most interesting and valuable thing about me," Leah shares. "Now that I have the diversity of the experience that I do, the resilience that I do, and then also at the same time being able to be an engineer and keep all

of that up, I feel like I have a superpower, honestly.” These experiences have also fueled her passion for solving problems in engineering. “The only reason I pursued STEM or a discipline that’s about problem-solving is because my life was filled with problems,” she reflects. “And so the way I could be closest to it, is to solve problems for a living. And what better way to do that than to solve medical problems to help people?”

Leah’s story is a testament to the complexities of navigating engineering education as someone with multiple marginalized identities. Yet, her journey is one of transformation and self-discovery. Through her educational journey, she has developed a deep understanding of her capabilities and a commitment to creating a more inclusive and equitable future in engineering. “It’s unfathomable to many, the idea of navigating survival with immigration issues and disabilities. But I think I wouldn’t have been able to get into engineering, stay in engineering, and pursue engineering if I didn’t have all of the things that I did.”

Discussion, Limitations, and Future Work

Leah’s narrative demonstrates the multifaceted ways in which disabled, international Women of Color navigate engineering education. Her experiences illustrate how structural barriers, cultural expectations, and institutional policies shape identity recognition and negotiation. While previous research has documented the challenges faced by disabled students, Leah’s story highlights the additional complexities introduced by race, gender, and nationality. However, beyond these challenges, her journey also reflects the joy and empowerment that emerge from embracing disability as an integral part of identity. Her perception of disability as both a challenge and a source of strength not only challenges deficit-oriented narratives that frequently dominate disability discourse but also underscores the power of disabled joy and self-acceptance in fostering community, self-advocacy, and success.

While Leah’s experiences provide valuable insight into intersectional identity negotiation, her story represents one perspective among many. Future work will expand the dataset to include additional narratives from disabled, international Women of Color in engineering, allowing for a broader exploration of identity, access, and systemic challenges. Additionally, this study primarily draws from qualitative data collected at three institutions, which may not capture the full scope of experiences across diverse engineering programs. Further research should consider cross-institutional comparisons to examine how institutional policies, cultural contexts, and geographic locations influence disabled students’ experiences in engineering education. Finally, future work will explore how these narratives can inform policy changes and institutional interventions aimed at creating more inclusive and accessible learning environments for disabled students in engineering.

Concluding Thoughts

Leah’s narrative reveals the multifaceted challenges encountered by disabled students, amplified by structural and cultural norms embedded within engineering education. These findings emphasize how intersecting marginalized identities further contextualize what it means to navigate higher education as a disabled student. Although the use of intersectional approaches in engineering education research is growing, disability is still largely excluded from such conversations. This paper emphasizes the need to raise awareness around intersectionality within the disabled community in order to holistically support this student population.

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