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Work in Progress: Culture of Productivity—Multipositional Impacts on STEM Graduate Students

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Culture of productivity: multidimensional impacts on STEM graduate students (work-in-progress)

Abstract

Those who do not conform to the ideology of the "ideal" normative human body/mind are often excluded from Science, Technology, Engineering, and Mathematics (STEM). Lacking the diversity in experience and perspectives that diverse students, staff, and faculty bring to STEM impedes our society's progress to a better world. The purpose of this work-in-progress (WIP) paper is to explore the experiences of dis/abled, queer, AFAB[1] STEM graduate students navigating a culture of productivity in their educational journey. This WIP paper offers a narrow preview of the findings in a larger exploratory study. This paper begins to untangle some of the intricacies in a short narrative excerpt through a neoliberal-critical, ableism-critical, and queer lens. This paper offers an invitation to the STEM community to collectively reflect on and engage in conversation regarding our cultural norms and assumptions.

Introduction

Academia has been shaped by a culture of productivity. Responding to the scarcity of resources, postsecondary institutions have embraced neoliberal ideals – transforming education and scholarship into market-like forms of production. Academics are forced to maximize production to be competitive. The "publish or perish" mindset in academia binds the success of academics to the ideal "worker" norms of efficiency [2]. Those who cannot or will not conform to the ideology of the ideal productive human are excluded from Science, Technology, Engineering, and Mathematics (STEM). Thus academic success is often situated in direct conflict with disability [3]–[5]. Lacking the diversity in experience, thought, and problem-solving that diverse professionals and academics bring to STEM disciplines impedes our society's progress to a better world.

Neoliberalism is a political, economic, and ideological movement that theorizes that the well-being of individuals is best advanced by institutional freedom, deregulation, privatization, and competition [6], [7]. Neoliberalism champions free market exchange. It values competition and self-interest as the ethics that should be used to guide all human actions [8]. Embracing neoliberalism, the focus of higher education has shifted from the pursuit of knowledge to the production of revenue.

A culture of productivity has been previously characterized as the pervasive attitude that engenders the result of labor as a commodity and values labor efficiency over an individual's needs, preferences, and well-being [9], [10]. The STEM academic culture of productivity prioritizes output, efficiency, and competition [11], [12]. It engenders a fear that dis/ability reduces productivity [13], uncoupled from value and quality [12], [14].

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[1] AFAB is an acronym used in the queer community to describe people who were assigned female at birth. Commonly this refers to the sex that was assigned to them on their original birth certificate. This sex may or may not represent their biological sex [13].

Dis/ability is a complex, evolving, and nuanced concept. The first author previously proposed a theoretical framework through which we can examine the experiences of dis/abled STEM students based on DisCrit, Tribal Crit, Dis/ability Justice, and Critical Dis/ability Theory [12]. It should be noted that this framework is meant to expand and grow as we, the dis/abled and engineering education communities learn together. We use this framework here to define dis/ability in a way that (1) disrupts the deficit narrative of dis/ability and the normative ideal of ability; (2) emphasizes the socio-cultural co-construction and co-dependence of disability and ability; (3) recognizes dis/ability and ability as social, political, historical, and legal constructions of ableism, racism, heterosexism, eugenics, and other systems of oppression in academia and society; (4) appreciates the uniqueness of each individual's intersectional/multidimensional[2] experience and perception; (5) acknowledges the temporary, episodic, transient, chronic, and permanent variations of disability and the often fluid levels of visibility dis/ability can have; and (6) recognizes disability as the often simultaneous oppression of body/minds deviating from the norm, the fear of dis/ability, the physical, material, and psychological pain of impairment, and the impacts of being labeled as deviating from the norm.

This work in progress paper explores the experiences of dis/abled, queer, AFAB[3], STEM graduate students navigating a culture of productivity in their educational journey. This paper offers a narrow preview of findings from a larger study. It begins to untangle the intricacies of a short narrative excerpt through a neoliberal-critical, ableism-critical, and queer lens.

Methods

The research presented in this work-in-progress paper was conducted as part of a larger study. The methods employed in the larger study are detailed in the first author's [12] doctoral dissertation. The study included two phases of data collection and analysis. Phase 1 used Harvey's [15] process to broadly explore the experiences of two dis/abled STEM graduate students through multiple rounds of interviews and analysis with participants. The first author originally did not intend to use this research in their dissertation, however, after realizing the significance of the findings of Phase 1, they decided to conduct a second phase, to further explore key areas. Phase 2 used narrative interviews, a post-interview survey, and narrative analysis to explore the experiences of five additional dis/abled STEM graduate students with regard to postsecondary education culture, policy, and interpersonal interactions. After analyzing the results of Phase 2, we have been constructing a series of narratives to present findings from both Phases related to pertinent themes.

The participants in this study included seven individuals who were enrolled in STEM programs seeking a master's and/or doctoral degree(s) at universities with varying levels of research

[2] Multidimensionality is an analytical framework for understanding how the interdependent systems of oppression and privilege interconnect, compound, conflict, and overlap in a person's experience afforded by the convergence and divergence of the individuals' socio-cultural categorizations, capital, and community cultural wealth.

[3] AFAB is an acronym used in the queer community to describe people who were assigned female at birth. Commonly this refers to the sex that was assigned to them on their original birth certificate. This sex may or may not represent their biological sex [13].

productivity. Participants were in various stages of their careers and served in various roles at their institutions as students, employees, educators, and researchers. The participants described having a variety of less apparent or invisible dis/abilities. These included anxiety, attention deficit hyperactivity disorder (ADHD), depression, dyslexia, environmental allergies, hearing loss, Irritable Bowel Syndrome (IBS), migraines, panic disorder, polycystic ovary syndrome (PCOS)[4], post-traumatic stress disorder (PTSD), scent sensitivity, temporary partial vision loss, and traumatic brain injury (TBI). Collectively, the participants used a variety of terms to describe themselves including: female and assigned female at birth; woman, nonbinary, and demi-woman; LGBTQIA, gay, lesbian, bisexual, queer, and pansexual; Latina, Hispanic and white, and white; Bilingual, not entirely fluent in Spanish, English speaking, and English and Spanish speaking; "non-traditional" and "in my 20s"; "spiritual but not religious" and atheist; and American, Mexican American, American-born Columbian, and second-generation American. They were raised in a variety of regions in the United States within varying levels of economic class.

This paper presents a single narrative that represents the experiences of multiple participants. It is fictional in that the story presented did not occur to any one person. Rather, this story is an amalgamation of the experiences shared by multiple participants. The narrative is told in the first-person perspective of the amalgamated participant. We constructed the story from clean verbatim quotes. Please note that we used the phrase "the participant" to refer to the amalgamated participant throughout our discussion.

Discussion and results

The accommodation process of many institutions of postsecondary education requires dis/abled academics to disclose their dis/ability to those who have power over them [16], [17]. Disclosure carries the risk that others will perceive them as less productive - and therefore less worthy of earning an advanced degree and/or receiving financial support as a research assistant or teaching assistant, which is common for STEM graduate students. Given the danger that is often present in disclosure, sharing one's dis/ability status can be a difficult thing to bring oneself to do [18].

Researchers are often forced to conform to ableist expectations and mask their dis/abilities in order to be seen as competent researchers [20]. Pearson and Dickens [19] note "this is traumatic and triggering, especially when multiply oppressed individuals grow up knowing they are different, knowing they are not normal, while being 'forced' (aka encouraged) to strive to be as normal as the ideal". Intersecting non-normative identities are particularly relevant, as women and minorities tend to be perceived as less productive [21], [22], although hard numbers do not support those perceptions [23], [24]. Rather than supporting dis/abled academics, the traditional accommodation process positions dis/abled academics in conflict with success in a culture of productivity.

The participant felt several of their nonnormative identities were already readily apparent to those in their department. The participant was young. They were queer. They were not a man. Yet the participant described being surrounded by "older usually conservative men" who were

[4] Polycystic Ovary Syndrome (PCOS) is a common health condition related to androgen levels and the formation of ovarian cysts [15].

often from a different (perhaps less accepting) culture. The participant found it difficult to disclose their dis/ability. The participant found it difficult to disclose yet another way they were different from those they were "surrounded" by – from those who held power over them.

> When you're in computer science and when you're in engineering you're surrounded by older, usually conservative men who may or may not be from a different country and a different culture altogether. So disclosing that information to them, like for PCOS, is very difficult to do.

The participant especially found it difficult to disclose disabilities related to the internal anatomy they likely did not share with those around them. This was further complicated by the socially conservative cultures many of the people holding power over them came from. They found that people in positions of power were often ignorant of issues impacting bodies with "women innerparts".

When the participant disclosed that they had PCOS in order to request an excused absence, their professors gaslighted them about the impact of their disability. Gaslighting refers to a covert form of emotional abuse that attempts to mislead the target of the abuse into questioning their own thoughts, perceptions, reality, and/or memories [25]–[27]. Medical gaslighting is more likely to be directed at women and people of color [27]. The professors downplayed and discredited the participant's experience. The professors likened the participant's experience to another function of many AFAB bodies – menstrual cramps; which is itself a stigmatized phenomenon with perceived productivity impacts [28].

These professors had never experienced cramps let alone the potentially life-threatening condition of an ovarian cyst. While the level of pain associated with an ovarian cyst can vary, some people find it to be more excruciating than childbirth [29]. The professors made inappropriate demands based on grossly unqualified assumptions in response to such requests for accommodation. In line with the "productivity" culture and the "pull yourself up by the bootstraps mentality", they told the participant to "power through" the pain. Further, they gave the patient unsolicited medical advice such as taking over-the-counter nonsteroidal anti-inflammatory drugs.

> I think I only disclosed my PCOS to one particular professor but I was not comfortable disclosing to any of the other professors in the slightest. Because you get a measured response when you tell them you're having period cramps or whatever. That's the extent to which they were willing to think about PCOS, like Oh, you know "it's just that time of the month, this is cramps that can you just power through if you just take an ibuprofen". No, I'm literally laid out on my bed, I cannot get up.

The participant went on to describe how their gender further complicated the ways in which people responded to their dis/ability. They described how their fluid and often masculine gender presentation did not align in the minds of others with a "very feminine dis/ability". They described how disclosing their dis/ability would throw "people through a fucking wild loop". Moreover, they described their fatigue and frustration in having to navigate the emotion and

confusion of others. They described how having to “deal” with “it” has prevented them from talking about or disclosing their dis/ability to most people.

> PCOS has been the biggest pain in my ass because I am... The context is so weird right, I mean I have my own hangups about it but also I'm in an environment of primarily male faculty and staff. Talking about this is a little bit weird especially like in the context of me being queer. I present in a different way, all the time. Usually, I present a very masculine image of myself. And so having PCOS and having women innerparts and going up to people and being like “yeah I have this very feminine dis/ability” throws people through a fucking wild loop. And I'm just tired of dealing with it most days. I don't want to talk about it to most people.

Disclosing differences is especially difficult in how dis/ability and gender relate to the neoliberal construction of normalcy in STEM disciplines. The participant described how people assumed they couldn’t exist. Such people assumed that people who deviated from the neoliberal ideal of the productive academic, especially those with dis/abilities would be incapable of succeeding without extra help.

> People out there assume if you have a disability you're broken or incapable of being where you are. They assume you are incapable of succeeding without extra help. I think those people will always be there…

Dis/ability representation, especially that of multiply marginalized dis/abled academics, has the potential to raise awareness regarding the exclusionary tenure requirements embraced in a culture of productivity [30]. The participant believed some people would always assume that people with dis/abilities could not exist in academia. Yet the participant also described hope that representation could shift the cultural attitudes toward diversity in STEM academia.

> The last few years of my graduate career my lab really filled out with a lot of different individuals. And they were like “if you didn’t say anything I wouldn’t have the strength to also be upfront and disclose my problems.” Having that visible component (being open and out about my disabilities), I think, really helped a lot of my peers. Being the one to say to my advisor “I have a huge” -pardon my french- “ a huge fucking headache. I cannot be here today. And I will not be here today”. It was really good to show that some days you just can't. I think pushing through it sometimes gives people a false sense that maybe things aren't so bad, and you can just power through them. That's just not possible. So, especially later on in my graduate career, I became a little bit more willing to be like “I just can't today. I'm so sorry. Bye.”

Awareness of the diverse journeys that people can have in their lives and academia is an important building block of empathy. The participant described how important representation can be in breaking down the oppressive standards of productivity. They described how representation could make people feel less alone. They described how it helped them advocate for themself. It helped them be open about the impacts of their dis/ability on their productivity rather than downplaying them. It helped them prioritize their health rather than trying to “push through” it. Knowing others were going through something similar and that their own representation could

impact change helped them say no. Representation played a major role in their journey of acceptance, disclosure, and self-advocacy.

Concluding remarks

The words of the participants demonstrate how some of the demands and expectations under a culture of productivity conflict with dis/ability and other non-normative identities. This narrative invites those of us in the STEM academic community to consider the potential of representation in overcoming some of the barriers present in our culture. However, to create an environment that encourages diverse representation, we must first enact cultural change. We must explore the embedded bias, assumptions, and expectations within ourselves and our culture. We must acknowledge the role of oppression in the formation of our culturally homogenous assumptions. We must challenge the often unacknowledged oppression in our norms, requirements, and expectations.

The authors present this work-in-progress paper to encourage educators, researchers, practitioners, and students to reflect on the culture of productivity. This paper echoes the larger study in its invitation to the reader to ask "What significant and impactful work is sacrificed to the narrow focus on standard metrics of academic productivity?" [11]. This narrative represents the multidimensional voices of individuals who are believed by some to not exist in STEM academia. We hope to invite the STEM community into reflection and conversation regarding our cultural norms and assumptions. The narrative presented here offers a narrow glimpse into the experiences of a limited pool of participants. We hope it motivates further inquiry into the lived experience of diverse voices to further inform our community's journey toward social justice.

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