
RESPONSE

Criticality Is Crucial: Fidelity in What We Say and What We Do

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Martin and Garza's (2020) article presented a commendable case for empowering marginalized students in engineering education research at a poignant moment in global history. Presenting the experiences of a Black woman navigating the consequences of structural educational barriers as Black Americans endured the consequences of structural injustices in health and law enforcement was quite compelling. This response extends the discussion of their work by engaging with two important questions: 1) What is autoethnography? and 2) How can White scholars support Black students without also reinforcing the benefits of White supremacy? Although these questions seem distinct—one focuses on the methodology, the other on the culture of scholarly practices—they represent a growing trend in engineering education research to use autoethnography as a way to present the voices of the marginalized. Because this trend has so much revolutionary potential, I provide some critical reflections on the culture of power in engineering education research and offer suggestions on how research practices can be healing-centered and power-shifting.

Keywords: autoethnography; critical race theory; engineering education research; Black women; White supremacy

“There is that great proverb—that until the lions have their own historians, the history of the hunt will always glorify the hunter.” – Chinua Achebe, *The Paris Review*

Black Storytelling as Scholarship

The illustrious Nigerian novelist Chinua Achebe once discussed the Nigerian version of an African proverb that elucidates the power involved with authoring of stories, which I have quoted above. This proverb suggests that the storyteller has a limited viewpoint due to their paradigmatic focus, and the hunter has a vested interest in their exploit being seen as magnificently triumphant; however, the lion's perspective goes unacknowledged, much less considered. Likewise, in U.S. history White people have long told the narrative of our nation's evolution in a manner that overemphasizes their acumen and general humanity, while simultaneously underemphasizing, and even neglecting, their anti-Black barbarity (Alexander, 2010; Kendi, 2016; Wilkerson, 2020). These lies continue to shape our society, though the rise of Black historians became an enterprise of rectification that is both humanizing and just (Bruce, 1984; Mullane, 1993).

This work continues as Black scholars dispel notions of disinterest, underpreparedness, and inability as rationalizations of Black people's exclusion from, and suffering within, engineering education (Burt et al., 2018; Cross & Paretto, 2020; Fletcher et al., 2021; McGee et al., 2016; McGee & William H. Robinson, 2020; Mondisa, 2020; Ross et al., 2017). Cross (2020) suggests the stories of Black people be told with “integrity and strength”; herein lies the revolutionary potential of Black autoethnography in engineering: its ability to build upon the counter-narrative truth telling of Black scholars who tell stories about their racial community to now include Black people telling stories about themselves. Traditional Black autoethnographies across the globe tend to focus on community and resistance as we continually struggle to receive recognition of our full humanity, and as our presence itself is act of defiance to the systemic barriers that work to suppress us, though we remain undefeated (Alabi, 2005). Situating this work in engineering education research (EER) creates possibilities to move the field from pursuits of diversity in representation to educational liberation, but for these possibilities to materialize, criticality is key. By criticality, I mean consideration of social inequities due to power differentials in U.S. culture (e.g., sexism, racism). I

will discuss my experience with autoethnography and its philosophical perspective, then I will present an analysis of Martin and Garza's (2020) article regarding their use of theory, methodology, and representation of power relationships in EER.

My exploration of autoethnographic inquiry was generated in a research group meeting during my doctoral studies when a good friend, Dr. Avneet Hira, suggested I used this method to construct my dissertation. At the time I was minimally familiar with autoethnography but was aware of both its limited potential for being considered a legitimate methodology in an engineering study, and the difficulty of articulating my thoughts and experiences for others in an educative manner. These concerns notwithstanding, after studying autoethnography I became enamored with the way it is inherently resistant, with counter-storytelling and explicit acknowledgement of subjectivity at its core. Autoethnography seemed to be a more honest and authoritative research process, so I insisted it was necessary for me, as a Black, male engineering teacher, to speak from the first-person perspective to emphasize my experience and history with structural racism and systemic oppression. With autoethnography, I was able to offer a perspective that I believed was absent yet sorely needed, not because I am unique in and of myself, but because the sociohistorical legacy of Black men who have studied and are now teaching engineering is largely unknown. There is an abundance of valuable scholarship *by* Black men *about* Black men in learning engineering (Burrell et al., 2015; Burt et al., 2018; Flowers III, 2015; Moore, 2006; Strayhorn et al., 2013; Tolbert, 2016); even so, there remains a dearth of literature highlighting the experience of a Black man teaching engineering, particularly to other Black male youth. I asserted that speaking from the first-person perspective was necessary to make the case for why acknowledging and counteracting racism and systemic oppression should be intentionally embedded in any effort to broaden participation in engineering to Black males. Furthermore, I regarded autoethnography as well-aligned with Critical Race Theory (CRT), which accentuates personal narrative as an interpretive structure to examine racism in society. Autoethnography allowed me to shed light on my attempt at using a race-conscious approach to teaching engineering to Black male youth and share the adaptations I made along the way, shortcomings included.

I share my experiences with learning and using autoethnography because that is what autoethnography is: "an approach to research and writing that seeks to describe and systematically analyze (graphy) personal experience (auto) in order to understand cultural experience (ethno)" (Ellis et al., 2011, p. 273). Personal narrative can be a powerful way to critique cultural experiences, disrupt dishonest and exploitative research practices, and repurpose vulnerability as a tool to uncovering the complexity of truth. However, the transformative potential of personal narrative as an autoethnographic methodology rests in its ability to extend sociological understanding through systematic analysis of the author's reflexive storytelling. In autoethnographic research, personal narratives are the foundation of systematic inquiry into one's self-consciousness to provide an informative account of the dynamic, and often latent, cultural processes at work in one's relations to others. Therefore, autoethnographies are not only self-focused; they are multilayered and interdisciplinary because the author/researcher must have some familiarity with what is already known regarding the phenomenon under study in order to provide their unique perspective building upon prior scholarship. Hughes & Pennington (2017) offer a typical research question in autoethnographic inquiry, "What am I learning by examining my identities, power, privileges, and penalties within one or more cultural contexts?" (p. 4). This exemplar question emphasizes the *auto* in autoethnography, and it asserts the presence of power and privilege that significantly shape the *ethno*, which lays the foundation for transformative praxis (reflection and action).

Constructive Critique

Given this framework, when I read Martin & Garza's (2020) article my immediate reaction was that it would not be considered an autoethnography because self-authorship is essential (Reed-Danahay, 1997). Even in collaborative autoethnography each collaborator is telling their own story in relation to others' stories (Hernandez et al., 2017). Nonetheless, Martin and Garza admirably exhort the EER community to reconstruct the power dynamics between researchers and their participants. Despite this appropriate encouragement, it is important to examine the fidelity between the proclamation and the project itself. Firstly, although the article does present Chavone's story in first-person [or in her own words], the overall structure and methodology of the article does not embody traditional characterizations of autoethnography. Hughes and Pennington (2017) propose autoethnography as a pathway to engagement with critical social research, which is "a broad range of social science studies that purposefully challenge existing understandings and foundations of knowledge" (p. 15); thus the autoethnographer inherently declares authority in both positionality and epistemology (Muncey, 2005). Considering the ways Black people have been positioned historically in storytelling, in addition to the hyper-marginalization of Black women, the voice of a Black woman telling us what she has experienced and why it matters is exactly what we need to make EER a more just space for all people (Collins, 1986, 2003; Crenshaw, 1989). The sociopolitical positionality of Black women necessitates sole authorship as a socially just act in accordance with the principles of this methodology; thus, the inclusion of another voice when telling Chavone's story altered the process and product of the research method. This response seeks to intervene to prevent further replication of this misunderstanding as autoethnography is already marginalized within the broader research community (Ellis, 2004; Holt, 2003).

Secondly, the project does not use research literature to contextualize Chavone's story. Any autoethnographic inquiry is measured by the extent to which it serves an educative function, meaning not merely that the reader learns something new but that the narrative contributes to existing literature (Jones et al., 2016; Starr, 2010). Ellis et al. (2011) explain autoethnographers "must use personal experience to illustrate facets of cultural experience, and, in so doing, make characteristics of a culture familiar for insiders and outsiders. To accomplish this might require comparing and contrasting personal experience against existing research" (Doing Autoethnography section, para. 5). The way Chavone's narrative is presented in her co-authored article does more to expose her tremendous vulnerability for the White gaze (Goitom, 2019; Yancy, 2008) than enhance the literature on Black women in America (Angelou, 1997; Berry & Gross, 2020; Hine, 1974; Truth, 1951), in higher education (Banks, 2009; Benjamin, 1997; Evans, 2008; Patton & Croom, 2017), or the growing scholarship on Black women in undergraduate engineering programs (Bush, 2013; Gibson & Espino, 2016; Stitt & Happel-Parkins, 2019). We can consider it widely known that Black women embody tremendous fortitude and social agility to get into, and through, engineering, and we can look across disciplines to observe research methodologies that are truly empowering for participants like participatory action research (Kemmis et al., 2013; McIntyre, 2007) or CRiT walking (Giles & Hughes, 2014), among others (Denzin et al., 2017; Ross, 2017; Solórzano & Yosso, 2002).

To address this concern, a more focused and situated research question would have guided consideration of prior literature and assisted a systematic analysis of the data to determine what ought to be included and what could have been omitted, thereby guarding against critiques of telling one's story as narcissistic and ensuring the narrative effectiveness in "explicating tacit knowledge and improving practice" (Wall, 2006, p. 155). The emotionality of the article is sincere and perhaps not fully resolved as Chavone shares "I have not talked about these things ever—EVER" (p. 14); even so, absent an interrogation of Whiteness, the result is a co-constructed narrative of a Black woman led by a White woman who does not have to deal with the ramifications of the hypersensitive details being shared. My purpose in problematizing this article is not to evaluate the intentions of either author; instead, I aim to prompt reckoning with the embedded hierarchies of our social arrangement that go beyond researcher(s) and participant(s). The publication of their article does not necessarily assist Chavone in pursuit of her bachelor's degree as the currency of undergraduate study is course grades, whereas publications are the currency of the professoriate providing much benefit to Julie, so the gains are unequal in material value. During the project, Chavone was an undergraduate student and had traversed many obstacles in pursuit of becoming an engineer, a journey she may still be on. She has taken a great risk by sharing intimate details of the trauma and triumphs of her life to stimulate engineering to value Blackness with no guarantee those within this community will adhere to her call; thus, we must take greater care in considering who benefits most from such an arrangement as this.

Thirdly, CRT could have been leveraged more fully to expose and problematize structural racism. The use of CRT as a theoretical framework in educational research allows for comprehensive analysis of the interrelationship between racial identity and citizenship, as our nation alleges widespread equitable schooling and preparation for full citizenry (Ladson-Billings, 1998). Ladson-Billings & Tate (1995) pioneered the use of CRT in education, understanding that the schooling landscape, particularly within public schools, is a microcosm of our nation and maintains its social relations (Lynn et al., 2013). An opportunity to interrogate structural racism is missed when discussing Chavone's early childhood schooling experiences, much of which was due to the 1954 *Brown v. Board of Education* ruling. Derrick Bell, Jr. (2005), often referred to as the father of CRT, offers the following assessment of the *Brown v. Board of Education* decision:

Brown was not a revolutionary decision. Rather, it is the definitive example that the interest of blacks in achieving racial justice is accommodated only when and for so long as policymakers find that the interest of blacks converges with the political and economic interests of whites. Black people have been challenging segregation in the public schools since 1850—for the most part without success. (p. 1056)

This perspective is critical to understanding the failure of schools to become racially integrated even today (Billingham & Hunt, 2016; Reardon et al., 2012), and the window dressing the Kansas City, Missouri District did to attract White students, all the while implying Black students and their school leaders were inferior. Such historic analyses are often chronicled as evaluations of political efficacy, rather than centering the actions of White people, individually and structurally, who viewed Black people as a contagion (Moran, 2005). Moreover, a more expansive use of CRT could provoke increased scrutiny of how the power dynamics that shaped Chavone's schooling also shaped Chavone's housing circumstances (Gruenewald, 2003; Tate IV, 1997). The anti-Black racism, masked as urban renewal, that created the Holy Temple Homes is in lockstep with the development of disenfranchised communities across the nation that comprise an overrepresentation of Black people (Gotham, 2001; Hyra, 2012; Logan et al., 2015). Altogether, magnifying the lens of CRT would have amplified the contributions of this work by compelling engineering education scholars to grapple with the remarkable fortitude of Chavone, and the wretched oppression that fomented such resilience.

I would be remiss not to explicitly affirm the richness of Chavone's story and acknowledge her courage in relaying her life experiences; additionally, my desire is not to suggest she had no agency in how her story was constructed and presented

in this public forum. Instead, my aspiration is the opposite; I applaud her accomplishment of a published article as an undergraduate student. But I am also suggesting ways in which Chavone's agency in telling her story could have been enlarged. One method would be to adhere more closely to autoethnography by having Chavone as the sole author of her self-analysis as she instigates critical praxis in EER. Another option would be a collaborative autoethnography where both authors co-produce examinations of their own narratives placed in association to reveal the multidimensional complexities of identity, power, and relationship dynamics within EER. Yet another option would have been for Julie to utilize narrative inquiry to tell Chavone's story with care by contextualizing the educative conceptions that can be gleaned to move our field toward new or better ways of knowing, doing, and being (Burt, 2020).

Extending the spirit of Martin & Garza's article, I implore Black people in engineering at any level to engage in the practice of autoethnography. Two statements on autoethnography summarize for me why this inquiry process is most useful to EER: i.) "Autoethnographers view research and writing as socially-just acts; rather than a preoccupation with accuracy, the goal is to produce analytical, accessible texts that change us and the world we live in for the better" (Ellis, Adams, & Bochner, 2011, p. 273), and ii.) "The process of self-exploration and interrogation aids individuals in locating themselves within their own history and culture allowing them to broaden their understanding of their own values in relation to others" (Starr, 2010, p. 1). I believe using autoethnography will result in scholarly documents that stimulate more equitable teaching, research, and service by elucidating contradictions in the culture of power in engineering that we recognize as Black people that others may not be attuned to.

For My People

Elsewhere, I have written about the need for pro-Black Engineering Education Research, essentially an asset-based and socially transformative approach to the study of Black people in engineering because EER "in its current form is largely enmeshed in a perpetual undermining of Black scholarship and life" (Holly, Jr., 2020, p. 4). As I write this article, I am ruminating the depths of anti-Blackness in the academy as the denigration of Cornel West, one of the most eminent intellectuals of modern history, plays out on a national stage via undermining his outsized influence on Black people and American life (Kelley, 2021). White scholars do not have to sit with this empathetic disgrace in quite the same way. Nevertheless, in the context of scholarship, White scholars can help Black students by gaining a keen awareness of the insidious nature of White supremacy, historically and contemporarily. Engineering has always been a predominantly White field, practically and conceptually, so research on its duplicity in calling for broadened participation while imposing assimilation would be a worthy endeavor. Still, more work is necessary for the normalization of Black intelligence over Black resilience. Emphasizing our perseverance fits well with engineering's veneration of hardness (Godfrey & Parker, 2010), though it has yet to manifest into any social capital for Black people. This elevation of hardness does even less to dignify our dexterity. Engineering education researchers must re-characterize the hard work of Black students as something more than decontextualized grit, and instead portray this undeterred will as proficiency in navigating an anti-Black society that deems us more than capable of mastering the principles of statics, dynamics, and the like. Such a posture positions all engineering stakeholders to notice and build upon the assets Black people bring to engineering, allowing engineering stakeholders to be effective in your roles as professors, mentors, colleagues, and so on.

One of the most affirming actions White scholars can take is to use your platform or skillset to elevate Black students, train them with the tools of research and teaching you possess and allow them to employ their newly developed talents in their own way. Black scholars do this to a fault, as a measure of cultural responsibility for which we receive no credit in our professional evaluations; whereas, when White scholars do this even minimally their reward far outweighs their impact (Johnson-Bailey & Cervero, 2004; McCoy et al., 2015; Mondisa & Adams, 2020; Reddick, 2011). The barriers to liberatory research are primarily issues of will for White faculty and skill for their Black students. McGee (2020) is instructive in pointing out that cross-racial mentoring "that is informed by racial or multicultural competence offers protection for [underrepresented, racially minoritized] graduate students who want to carry out non-Eurocentric centered research" (p. 107). We must ponder why such protection is imperative.

Competing Interests

The author has no competing interests to declare.

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