

Dispelling the Monolith: Exploring the Identities of Black Immigrant Students in Graduate-level Engineering

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INTRODUCTION

On U.S. university campuses, international students in higher education are often portrayed as a homogeneous group where all are labeled as 'foreign' and individual identities, diversity within cultures, and intersectionality goes ignored (Lee & Rice, 2007; Mwangi et al., 2019). As research begins to bring light to the disaggregated experiences of groups within the higher education international community, there seems to be a gap regarding the experiences of Black immigrant students in engineering. Black immigrant students pursuing higher education in the United States hold a unique duality in their racial, ethnic and/or national identities based on an often-presumed identity of Blackness, despite their formative experiences taking place in a different environment of socialization. Given this, the experiences of identity as well as the challenges one faces as a Black immigrant student in engineering are important topics worthy of deeper exploration.

LITERATURE REVIEW

The STEM glass ceiling, an invisible barrier held in place by the bolts of capitalism, imperialism, xenophobia, and structural racism (Rahming, 2022), is one that is incredibly hard to shatter and break through. In the United States, Black students in STEM face a range of challenges, from academic to social, that often relate to a key part of their identity; being Black. Research highlights the fact that in U.S. society, the social construction of Blackness is one that creates a one-dimensional view of Black people, a view that allows the majority to lump all Black people together in a monolithic oneness, ignoring differences such as ethnicity

and nationality (Fries-Britt et al., 2014; Mwangi et al., 2019). This aggregated approach to understanding Black people's experiences demonstrates the lack of exploration of other key facets of Black identity. While several studies identify the challenges that Black students have in the U.S. education system, limited research addresses how Blackness at the intersection of those facets of a student's identity such as their ethnicity and/or nationality, field of study, immigration status, gender, economic background, etc., might be associated with a unique set of challenges to face while trying to crack the STEM glass ceiling.

Recent scholarship has shown race, or 'being Black', to have different positions of centrality when it comes to the plethora of Black people's identities (Mobley et al., 2021). Therefore, it is problematic to reduce the conceptualization of Black student experiences to only consider the lens of race. The importance of an experience and how it affects individuals is often a function of how the experience relates to central parts of their identity. The purpose of this study was to examine the experiences of Black immigrant students in graduate-level engineering in the U.S. The following research question guided this exploration: What do the stories of Black Immigrant graduate students reveal about how they their racial and ethnic identities are experienced in their engineering pursuits?

THEORETICAL FRAMEWORK

A Black immigrant, for this study, was defined as an individual who spent most of their formative years/childhood education in a predominantly Black country (Nigeria, etc.). This specific definition was used to identify students who would view the U.S educational system and way of life as new and unfamiliar, and particularly, when gaining their primary introduction at the graduate level. While the experiences of Black immigrant students are unique, they are

often not explicitly distinguished in studies that research the topics of 'identity' or 'Black identity in engineering or STEM'. This is due to the difference in racial and ethnic socialization between Black immigrants and their native Black peers. The concept of racial socialization can be described as the process in which both implicit and explicit racialized experiences prepare individuals for their racialized place in society (Pamplin & Bates, 2021). For Black Americans, Black people that have been socialized to a sociopolitical context rooted in the United States, its formation and evolution, these racialized experiences range from microaggressions in school and/or the workplace to brutal and unjust police killings in plain sight on the street. Black immigrants, however, are not socialized in this way. Black immigrants are more commonly socialized in environments where race is not salient to their sense of self, but rather their ethnicity. Ethnic socialization refers to the process in which individuals are developed to see themselves as part of an ethnic group, therefore acquiring the behaviors, perceptions, values, and attitudes of said group (Rotheram & Phinney, 1987). For many Black Immigrants, and specifically those from Black countries, race is not a conscious factor in their life until introduction and exposure to the United States. This is opposite their native Black peers, who from young ages, are socialized in context to the United States, anchored in white supremacy, where race has yet to be disentangled from efforts to define their personal and/or professional identities. We apply ethnic socialization to explore how they navigate their identities in engineering.

DATA COLLECTION/METHOD

The data in this study was collected as a part of a broader, national research project focusing on the identity-related experiences of Black engineering graduate students. The aim

of this study was to learn from Black immigrant students in graduate level engineering how they experience their racial and/or ethnic identities in their engineering pursuits. As part of the broader reach of this project, we have established a rapport with those engaging in this work with us through our participatory action design. Participatory research co-creates the knowledge and centers the perspective of the community under study with the overall effort to create actionable outcomes for the advancement of their community (Baum et al., 2006). Based on our centering of the voices in this work, and our development of a community of solidarity, rather than participants, we refer to those who have engaged in this work with us as members. Five members ($n = 3$ women; $n = 2$ men) all meeting our definition of Black immigrant completed this study. The members were from Nigeria, Cameroon, and Ethiopia. All members were enrolled in an accredited doctoral engineering program representing the Chemical Engineering, Industrial Engineering, Robotics Engineering, Electrical Engineering and Civil Engineering disciplines. Semi-structured interviews, where members were initially prompted to openly describe their experiences in engineering leading to up the present moment, lasted 60 - 90-minutes in duration. Follow-up questions detailing specific aspects of their stories (i.e., what identity related challenges did they experience, if at all?) were asked by research team. Interviews were video and audio recorded and then transcribed via Rev, a professional transcription service.

To initiate the data analysis process, each researcher reviewed the transcripts of two members to develop a set of inductive codes that categorized specific identity-related experiences for the participants (Chandra & Shang, 2019). The research team then met and condensed each of their emergent codes through pattern coding to yield three primary codes:

(1) Immigrant Capital (*descriptions of resources, positioning, and/or advantages of holding immigrant status*); (2) Minority Status (*descriptions from students involving experiences related to the racial/ethnic identities in navigating their engineering environments*); (3) Immigration/International Experiences (*descriptions of experiences that are directly related to immigrant/international status*) (Saldaña, 2021). These pattern codes informed development of a code book that was then used to analyze all member transcripts.

FINDINGS

From an analysis of all the transcripts, we were able to identify three key themes that represent the thoughts and experiences of the members: forced identity, unexpected armor and partial access.

A Forced Identity

Several of the members spoke about the fact that before coming to the United States, their race or 'being Black' was never something that they thought about. They did not consciously identify as Black in their home countries. As everybody around them was Black, immigrant students were never socialized in a way where Blackness was an important factor. Carole said when describing her experience in high school in Ethiopia and comparing it to the U.S. that "you don't feel like a minority, as everybody looks like you." However, in a racialized society, such as in the US context, the members were forced to accept an identity that they never considered to be central to describing who they were. Thus, immigrant students described feeling like the identity of Blackness was forced upon them. In fact, for Marie, she felt as if it was her and other international students' only option:

Actually, really, America just forces you to, forces us together, for better, for worse. The system makes it in such a way that, you know, especially African and internationals, and Caribbeans. You come into this space where they've already boxed and labeled you and forced you into this thing. Thankfully, the Black community is very dynamic, interesting, and nice, but for better, for worse we are part of it when we're in America, whether or not we want to be part of it. It's almost not a choice.

Christian also echoed the same sentiment of having to deal with this forced acceptance, "It's not even that. I don't think it's tough. It's just people don't give me a choice. Most times on applications it just says Black/African American, so I just go with that." Members also felt as if they were the "representation of Black people" when in predominantly white spaces and couldn't fully be themselves in fear of misrepresenting Black people. For students that had been socialized to a different reality, moving to pursue graduate education in the United States placed them in the position to take on an oppressed identity in a way they were unprepared for. For many of the Black Immigrant students, it was only once they began their graduate education in the United States that they came to know about racism and the ways that Black people are perceived and treated.

Unexpected Armor

Participants also spoke of instances where it was apparent that there was a difference between them and their Native Black peers. Raised outside of American society, members did not face certain obstacles that are common for Black Americans. When they moved here, most expressed being confused as to what was blocking Black Americans from achieving more in

their engineering education. These barriers, from which Black immigrant students had been shielded, as a function of their detachment from the United States context and socialization. This upbringing failed to foster a resonance with certain common experiences of Black Americans. Christian described not understanding the attitudes of his Native Black peers until he learned more about America's history:

Until later on I learnt that, well slavery just ended ... It's not that long ago that it ended, so some of these people are still living in the after effect. The after effect of the slavery is still very strong in their minds. I was never a slave. My parents were never slaves.

Vic speaks about never having experiences in which he felt he was in competition with others that was solely based on his race:

I interacted with other Black students, and I discovered that they had this thing where they always felt some sort of way in comparison to their white counterparts, in comparison to other races, I think, and it felt like an insecurity to me, like why? Because I didn't grow up with it, so I didn't really have it.

Participants came to the United States with a form of armor that unknowingly shielded them in a way that not privileged to Black Americans. Their formative socialization experiences in their home countries equipped them with a 'blissful unawareness' of the trials of being a minority in the United States context.

Partial Access

The findings also reveal that the members go through an entirely different set of challenges than their Native Black peers when it comes to being an immigrant student in the U.S. One thing members spoke about is not being able to take advantage of the full realm of

opportunities available for students of color as impacted by their citizenship status. Specifically, they were not permitted exploration of career opportunities to the fullest extent. Christian believed that to be where the difference between him and Black Americans could be observed, “There are opportunities that I couldn't pursue because I'm an international student. It has to be a citizen or permanent resident. In that case, there's a clear distinction between African American and someone that's international.”

Another thing the findings revealed about the members' experiences was that moving to the United States was the first time many of them had experienced minority experiences in engineering/STEM. As Black Immigrant students, it was the first time that their race affected their access to quality education. Marie found that, “There was just nobody that [she] felt comfortable asking in [her] department, because there was just no one like [her]”. The members found that they were in a new environment where they had not been socialized growing up to develop the skills to navigate it. As an example, Vic recalled how when he first came to the U.S., it was a totally new experience:

“Anyways, fast forward to when I came to the United States for my master's program, that is when I really probably figured out that being a Black student in a white majority could be challenging, I guess.”

Overall, the obstacles the members faced as Black students were new and unexpected. They described feeling they had little control over their experiences and being associated with a racialized experience of Blackness while studying in the United States.

DISCUSSION AND FUTURE WORK

The findings of this study provide evidence of the unique experience of Black Immigrant students in context to their racial and ethnic identities in engineering. Specifically, Black immigrant students prioritized their ethnic identities and only after being ascribed as Black in their graduate studies were they exposed to the conceptualizations of race. This differs significantly from the experience of their Native peers, as Black America students become socialized to these ideologies at early ages.

For many Black Immigrants, and specifically those from Black countries, race is not a conscious factor in their life until introduction and exposure to the United States. Yet, for Black Americans, racial socializations begin to occur as early as primary education. As an example, a United States history curriculum that omits major contributions from Black, Brown and Indigenous individuals across history, is one demonstrative mechanism of how students can become socialized to an inferiority of their race in society. These omissions demonstrate a lack of value for those accomplishments, innovations, and contributions, and it further represents the aspects of white supremacy that underpin the racial socialization experience of Blacks in the United States. This finding necessitates a need for institutions to truly recognize the continuum of Black identities rather than ascribing an assumed identity due to the color of one's skin.

There exist intra- and intergroup variations in what students register as strengths and/or vulnerabilities as well as resources. The unexpected armor described by immigrant students conveys a privilege afforded in their immigrant status. Being shielded from the psychological safety involved in having to constantly navigate race in environments of higher learning enables Black Immigrant students somewhat of a buffer of experience. However, because of the need

for awareness and education across the academic community, academic cultures fail to differentiate between Black Immigrant and Black American students. As a consequence of this, while the armor may be an internal shield from Black Immigrant students internalizing their race in the United States, people still interact with them prioritizing the identity they are familiar with rather than that which is espoused by the Black Immigrant student. Thus, it remains necessary to consider both aspects of socialization, the racial and ethnic. This is due to the fact that while in the United States, 'Black identity' becomes somewhat forced upon Black Immigrant students despite it not being a central part of how they define themselves and the identities most important to who they are. Mwangi et al. (2018) describe Black Immigrant students readily experienced stereotypes of Blackness resulting in negative treatment comparable to their Black Native peers (Mwangi et al., 2018). An implication of this study suggests that in centering the perspective of Black Immigrant students, a lens of ethnic socialization should be adopted as theorizing their experience through racial socialization encroaches an identity that they do not primarily espouse and further perpetuates an environment that forces a monolithic narrative of Blackness that must be disrupted.

Exploring ethnic socialization can help us comprehend and describe the dimensions of identity and how Black Immigrant students navigate spaces uniquely, and specifically, in engineering, and thus differently from their native Black peers. Understanding the differences in racial and ethnic socialization between the two groups is key to recognizing the varied identity-related experiences, which is paramount information for institutions seeking to most comprehensively support Black students. Future work will expand for a deeper analysis of racial and ethnic experiences encountered in graduate engineering across a range of students with

varying ethnic and/or nationality backgrounds. This work aligns with findings of Mwangi et al. suggesting the need to consider the temporal relationship with racial awareness of Black Immigrant students as a function of their exposure to navigating in white academic environments. We wish to advance knowledge of these experiences specific to Black students navigating in engineering academic environments, and particularly, as a large percentage of Black graduate students in engineering are of Immigrant and/or international identities.

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REFERENCES

- Baum, F., MacDougall, C., & Smith, D. (2006). Participatory action research. *Journal of epidemiology and community health, 60*(10), 854.
- Chandra, Y., & Shang, L. (2019). Inductive coding. In *Qualitative research using R: A systematic approach* (pp. 91-106). Springer, Singapore.
- Fries-Britt, S., George Mwangi, C. A., & Peralta, A. M. (2014). Learning race in a US Context: An emergent framework on the perceptions of race among foreign-born students of color. *Journal of Diversity in Higher Education, 7*(1), 1.
- Lee, J. J., & Rice, C. (2007). Welcome to America? International student perceptions of discrimination. *Higher education, 53*(3), 381-409.
- Mwangi, C. A. G., Thelamour, B., Ezeofor, I., & Carpenter, A. (2018). " Black elephant in the room ": Black students contextualizing campus racial climate within US racial climate. *Journal of College Student Development, 59*(4), 456-474.
- Mwangi, C. A. G., Daoud, N., Peralta, A., & Fries-Britt, S. (2019). Waking from the American dream: Conceptualizing racial activism and critical consciousness among Black immigrant college students. *Journal of College Student Development, 60*(4), 401-420.
- Palmer, R. T., & Williams, J. L. (2021). "Peeling back the layers": A deeper look at the diversity among Black students at historically Black colleges and universities. *Journal of Diversity in Higher Education*.
- Pamplin II, J. R., & Bates, L. M. (2021). Evaluating hypothesized explanations for the Black-white depression paradox: A critical review of the extant evidence. *Social Science & Medicine, 281*, 114085.
- Rahming, S. G. (2022). The STEM Glass Ceiling: The Influence of Immigration Status on STEM Trajectories of Afro-Caribbean Women (A Narrative Approach). *Journal of International Students, 12*(1), 156-174.
- Rotheran, M. J., & Phinney, J. (1987). *Children's ethnic socialization. Children's Ethnic Socialization: Pluralism and Development*. Beverly Hills, CA: Sage.
- Saldaña, J. (2021). *The coding manual for qualitative researchers. The coding manual for qualitative researchers, 1-440*.
- Thelamour, B., George Mwangi, C., & Ezeofor, I. (2019). "We need to stick together for survival": Black college students' racial identity, same-ethnic friendships, and campus connectedness. *Journal of Diversity in Higher Education, 12*(3), 266.