Board 361: Reframing Racial Equity Year 2: Examining Script of Whiteness

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Overview

This EHR Racial Equity project, sponsored by National Science Foundation's Directorate for STEM Education (EDU)/ Division of Undergraduate Education (DUE), aims to shift the way faculty understand racial equity in engineering education. Rather than treating "underrepresentation" as a problem that needs to be solved (representation is not the same as power, after all), the literature illustrates that the culture of engineering creates an inhospitable environment for students and faculty of color [1], [2], [3]. The invisible and normalized nature of Whiteness has led to systemic barriers that are consistently ignored, making it difficult to identify, challenge, and (re)imagine racial equity in engineering [4], [5]. In order to challenge the hegemonic discourse of Whiteness, engineering faculty must develop the ability to see and name these invisible forces. Our goals for the project include: (1) identifying scripts of Whiteness, (2) helping engineering faculty foster and develop a critical consciousness to reveal these underpinnings of engineering culture; and (3) engaging engineering faculty in critically reflecting on their own positionality, question structures of power (such as the social, cultural, historical and political effects of Whiteness in engineering), and become change agents for racial equity in engineering education.

Research Questions and Objectives

This four-year project is scaffolded by three research questions:

> RQ1. How and in what ways does Whiteness manifest in engineering education?
>
> RQ2. What strategies can be used to effectively guide engineering faculty to develop their critical consciousness?
>
> RQ3. How and in what ways does the growth of critical consciousness support faculty to identify and challenge the systemic barriers preventing racial equity in engineering?

Our research aimed to address the aforementioned questions in a dual manner. In the first year, our strategy involved delving into a collaborative autoethnography (CAE), wherein we scrutinized our own encounters with, enactments of, and challenges to the scripts of Whiteness within engineering environments. The CAE approach adopts a collaborative stance toward critical self-reflection and can manifest in diverse forms, such as gathering personal memory data (e.g., through journaling), conducting mutual interviews, fostering deliberate dialogue, or observing one another (e.g., in educational settings). It's important to note that CAE doesn't unfold in a linear fashion; rather, it necessitates an ongoing dialogue involving conversations, negotiations, or even disagreements among team members over an extended period, spanning months if not years. Leveraging our distinct positionalities and years of collective experience, our discussions were fruitful, allowing us to scrutinize how Whiteness manifests differently based on each team member's positionality.

Second, we planned to develop a transformative learning experience for engineering faculty centered around the role Whiteness plays in engineering education to co-construct ways to develop critical consciousness. Critical consciousness allows an individual to understand their own world more deeply while enabling them to intervene in their own reality and take action against oppressive elements [6]. Originally, the development, implementation, and assessment of this learning experience (Years 2-4) took the form of a faculty development program in which we recruited and grouped engineering faculty from all over the nation. Data collected from this faculty development program would have included participants' reflections and interviews, journaling, and our observations of the participants' own CAE. Additionally, we would measure the growth in participants' critical consciousness by using the Contemporary Critical Consciousness Measure I and II surveys [7], [8]. After sharing the goals of the project with different ASEE 2023 Annual Conference attendees [1] and talking to potentially interested participants, we decided to shift the project to first collect a baseline on how Whiteness is being conceptualized in engineering spaces. Following Cabrera's [9] call to challenge the social amnesia that calls into question effort and merit in higher education, we came to the conclusion that amnesia regarding racialization and systemic racism in engineering is prevalent particularly because Whiteness has not been a central part of the conversation in engineering and instead it has focused on the promotion of meritocracy. If Whiteness has never come into question in engineering, how would it be possible to frame it and understand it? We were able to gauge from audience interest at our accompanying poster how different groups of people reacted to our research topic -- ranging from disbelief to excitement for our upcoming faculty development program -- including the difficulty attendees had in identifying how Whiteness impacts engineering. Engaging with potential participants was an important step for us in determining the next steps for how to best recruit and work with interested engineering faculty. This reframing of the issues this project is intended to address are described in more detail below.

Project Progress

In our first year, we focused on disseminating the idea behind the project: that our collective understanding of how to understand and tackle racial equity can and should be reframed to interrogate Whiteness. We presented three invited talks, published an editorial for the European Society for Engineering Education [10] , and produced three conference publications around the first stage of our work [1], [2], [11]. In terms of new work, we began a collaborative autoethnography within the PI team. The CAE produced mostly internal works (essays, journal entries, reflections, etc.), which will serve as the data we will mine for the creation of the transformative learning experience we will develop in the next stage.

We initiated our work by meeting biweekly throughout the year to initiate dialogue toward the development of our collaborative autoethnography. During these sessions, we discussed significant events and experiences in engineering as a form of collecting data for analysis (see [11] for details). The team also engaged in writing reflections about our interactions and

conducted check-ins with an advisory board member to receive feedback on how to improve the team dynamics. Finally, we created a list of selected literature to help with the development of the autoethnographies, understanding scripts and behaviors, and analyzing Whiteness. We selected reading materials from CAE literature, critical race studies, and critical Whiteness studies for discussion, which helped the team discuss and think about how scripts of Whiteness may emerge in engineering spaces, including in our own meetings.

One of our major successes for the first year was our hiring of a postdoctoral scholar, Assistant Research Scientist Dr. R. Jamaal Downey, to work closely with the PIs on the grant. Dr. Downey, an expert in race studies with a background in education and experience with Intergroup Dialogue methods, brings a fresh lens to examining engineering culture. Shortly after his addition to the team, Dr. Downey also suggested that we re-examine our proposed methods. As our format for performing our CAE was still fluid, we integrated elements of intergroup dialogue [12] and group interviewing into our data collection.

Next Steps

In Year 2, we plan to analyze and publish the data we generated during the collaborative autoethnographic process in Year 1 to begin revealing the scripts of Whiteness at play in engineering spaces. To expand beyond our own experiences, we are moving forward with interviews with a diverse set of engineering faculty to collect a broader perspective on how Whiteness manifests itself and is framed across different identities and contexts.

Through the course of our own CAE, we identified several reasons why a faculty development program may not be the best mechanism for our transformative learning experience. Not only were questions about participants' emotional and psychological safety raised by our proposal's reviewers, but additional questions about the learning experience arose from speaking with potential participants at our first poster session. Moreover, as we delved into the literature on Whiteness, we contemplated the challenges in how we might engage white faculty in collaboratively developing the racial literacy that is necessary to challenge Whiteness [13]. Additionally, our Assistant Research Scientist raised concerns about the challenging nature of pairing strangers together in discussions about race, particularly those at mismatched levels of critical consciousness, based on his experience with Intergroup Dialogue methods for conflict resolution [14]. We decided to step back and reconsider our originally prescribed approach to instead ground it in dialogical practices by drawing upon the results of the interviews with participants to inform our next steps. Paulo Friere describes the five dialogical principles to be: humility, hope, faith, love, and critical thinking [15]. By using a dialogical approach, our interviews not only will provide us a baseline understanding of some individuals' conceptualizations of Whiteness and begin to identify scripts of Whiteness in engineering spaces, but also provide us with a way to initiate conversations with those same participants later to help them better understand their own experiences with Whiteness. In order to challenge Whiteness,

we see these scripts as entry points for dialogue with participants to start building their foundation in racial literacy.

While the new form of the transformative learning experience is yet to be finalized, we plan to lean more heavily on methods that we know and do well -- that is, interviewing, qualitative data collection, and analysis. Scaling down the scope of the learning experience (i.e., how many voices are in the room simultaneously, rather than the total number of participants impacted by the project) reduces risks for the project and for its participants, and we believe that interviews or focus groups to more directly target many individuals (rather than large cohorts) will better help participants develop their critical consciousness. In addition, we plan to use data collected from the first objective (i.e., identifying scripts of Whiteness) to inform the transformative learning experience to work collaboratively with engineering faculty to recognize Whiteness around them. We believe this modification to our data collection and dissemination plan has more potential for success and will be more impactful.

By the end of this project, our participants will have gained some tools to help them engage in self-reflexivity to continue developing their own critical consciousness. While our focus is to instigate change within the academic world, once you have awoken your critical consciousness, there is no going back [16], [17]. It becomes impossible to stop seeing the ways in which Whiteness (or masculinity, or wealth, or many other forms of privilege) influence the institutions, organizations, and structural practices that we live within. We hope these faculty participants emerge as change agents not only in engineering education spaces but become activists in their own communities to move our society forward towards racial equity.

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