

Work in Progress: A Trio-Ethnography on Professional Identity Development of Internationally-Trained Minoritized Women Early-Career Researchers in Canada

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A Trio-Ethnography on Professional Identity Development of Internationally Trained Minoritized Women Early Career Researchers (ECR) in Canada: A Work in Progress

Abstract

The experiences of internationally trained minoritized academic researchers in engineering and education tend to deviate from the dominant developmental model of the doctoral program and faculty preparation. Our research extended the use of duoethnography methods to trio-ethnography and adapted Carlson and team's conceptual model of professional identity development [1] to investigate how internationally trained minoritized women early career researchers (ECR) build their professional identity construction throughout their doctoral study. Our preliminary findings highlighted three themes namely 1) Perception of Professional Identity, 2) Intersection of Race and Gender, and 3) Learning and Research Communities. The research findings provide approaches for mentoring international minoritized graduate students while improving developmental outcomes for historically racialized groups and other women in similar positions. Our study will contribute to the literature on the professional identity development of international minoritized learners in engineering and education.

Introduction and Motivation

Internationally trained minoritized women (IMW) in engineering and education, like many students, possess varying life experiences prior to and during the pursuit of their doctoral degree programs. We define IMW as foreign-trained minoritized women who completed their degrees in a different country from their host country. Studies indicate that these diverse lived experiences of minoritized women early career researchers (ECR), extended to include doctoral and postdoctoral researchers [2], can influence how they form relationships, navigate educational frameworks, navigate systems, and shape their professional identities [3]. Professional identity development is seen as the socialization process of internalizing the norms of a particular profession into one's self-image and the associated attainment of the required knowledge, skills, competencies, judgment, responsibilities, and commitment of that profession [4] [5]. This study was initiated by three minority ECR, who were originally from Nigeria and China, that embarked on an academic journey in engineering education, teacher education, and K-12 education at two universities in Canada (two of whom are doing their doctorates and one is presently an assistant professor of education). Our research investigates how the professional identity development of IMW ECR is more complicated than traditional models of doctoral development indicate. Specifically, it asks: how do IMW ECR in engineering and education construct their professional identity throughout their doctoral program in Canada?

Review of Literature

There have been a growing number of studies that explore different aspects of graduate engineering students' professional identity. In their study of new professionals transitioning from graduate preparation programs to full-time work, [6] highlighted professional identity development as a major challenge [5]. Recently, other studies have explored different aspects of graduate engineering students' professional identity development such as academic identity development [7] [8], doctoral engineering attrition and persistence [9], doctoral advisor matching process [10],

and doctoral engineering education [11] [12]. While there are some studies that examine the impact of intersectional identities on graduate students' experiences [13] [14], most are situated in the US context [15], with few located in the Canadian context [16]. In addition, few studies have focused on women engineering faculty of color [17] and on internationally trained minoritized women. Our study will expand the ongoing conversation into the Canadian landscape.

Theoretical Perspectives

Our study adapted Carlson and team's [1] conceptual model of professional identity development which include: 1) Program Expectations; 2) Teaching and Supervision; 3) Research; 4) Publication; 5) Grants and Funding; 6) Service; and 7) Conferences, Networking, and Professional Development. We chose this model because it was suited for examining the professional identity development of doctoral programs, was extendable to include ECR and allowed specific elements of the model to be woven into our interview questions and narratives. We choose duoethnography [18] because of its collaborative, reflective, dialogic, and transformative nature [19]. We employed four tenets of duoethnography – currere, polyvocal and dialogic, difference, and ethical stance. Currere, our lives and lived experience are the lens with which we use to self-interrogate the meanings we each hold [18] with regards to negotiating educational structures, navigating systems, and developing our professional identities. With polyvocal and dialogic, our stories are specific, and our individual voices, dialogues and opinions are made explicit so that the reader can make connections of meaning and understand the context of the conversation [18][20]. Difference highlights the difference in our journeys and career stages, articulating each person's unique life history [21] [22] [18] Finally, ethical stance enables us to conduct research "with" and not "on" another, situating the Other as equals not to change the other but to change self [18].

Methods

Anuli and Glory discovered that they had similar interests at an online conference and thereafter the idea of writing a duoethnography emerged, they then invited Kelly to join the team, and we became a trio-ethnography. Our research process started in July 2022 when we participated in a 5-week workshop where we worked with mentors to refine our research plan. Thereafter, we met every Monday for an hour over 6 months to execute our study. Collaboration tools utilized were Zoom, Google Drive, WhatsApp, and emails. After our interview questions were drafted to guide our dialogue, we emailed them to a faculty member for feedback and subsequently revised them. Next, we took turns conducting 2-hour interviews individually (with one person interviewing the other) over a 3-day period in December 2022. The recorded dialogues were transcribed using Otter.ai software. We individually coded our transcripts separately then we collectively reviewed each other's codes and categorized them by patterns [24]. Next, we collaboratively interrogated our experiences across the patterns to identify several emerging themes. As data analysis is still ongoing, we present three themes that have emerged so far in this WIP paper namely, 1) Perception of Professional Identity, 2) intersection of Race and Gender, and 3) Learning and Research Communities. They are presented in the form of personal narratives from the collected data thereby enabling us to highlight each participant's voice. We start our first-person narratives with our positionality, and we hope that as readers read our stories, they will become immersed in them and resonate with them.

Positionality - Who we are.

Anuli: I am a doctoral candidate in curriculum pedagogy at University X specializing in engineering education. I have an engineering background, a Master's in business administration, and over 16 years of experience in the energy industry. I self-identify as a Black female engineer, educator, researcher, mother, and Christian. During my professional career, I found that I enjoyed coaching, mentoring, and facilitating training sessions for project team members at various global sites. This inspired me to relocate to Canada from Nigeria about 4 years ago to pursue a Ph.D. degree and to situate my research within global engineering education.

Kelly: I am a second-year Ph.D. student in curriculum and pedagogy at University X. During my undergraduate study in China, I initially wanted to enroll in a Political Science, Public Relations, Journalism, and Folk Music Singing fields program, but I chose Education due to family pressure. In 2014, I came to Canada to complete my master's degree in the Curriculum Studies and Teacher Development program at University X.

Glory: I am an assistant professor of Education at University Y. I identify as a Black female woman, a mom, an educator, and a Christian. I relocated to Canada in 2016 to complete my doctoral studies. My teaching background is in K-12. I have held different leadership positions throughout the course of my career. After completing my Ph.D., I contemplated teaching in postsecondary or choosing a different career path. I felt that my options were limited because I have always taught. I eventually decided to stay on the familiar path which was teaching.

Perception of Professional Identity

Anuli: Embarking on a doctoral degree in engineering education enabled me to integrate my professional engineering experience and my passion for education into my academic career. However, I have found that engineering education is still a growing program in Canada as most universities do not have a separate department for the program. Thus, I initially struggled with building a sense of identity in both domains and how to merge the two professional identities.

Kelly: The first year of my Ph.D. focused on educational technology and mathematics. Thereafter, I realized that my strength was in leadership and education policy, so I changed my research focus to curriculum policy and governance to match my original intent for undergraduate studies. I am also the first University X student who is a classical voice musician at the Soprano/Alto Chorus at the Faculty of Music at the University X. I have already gained lots of support and encouragement on my academic journey from my teachers, colleagues, and friends at University X.

Glory: My identity, which is a dynamic construct, has been influenced by my personal, social, professional, and racial contexts [25] [26]. I think about my professional identity in the context of my teaching and research roles [25], however, I struggle with my identity in both areas. I oscillate between the two identities. I would rather identify as an education researcher, but as an early career professional, my teaching load is so heavy that by the time I get to do the research I am burnt out.

The development of our professional identities seems to be influenced by our various experiences navigating a blend of engineering and education studies, a blend of leadership, music, and education studies, and a blend of teaching and research in an academic setting. A more balanced workload between teaching research and service requirements could minimize burnout and the exodus of female educators.

The intersection of Race and Gender

Anuli: Maintaining a school-work-life balance has been one of my biggest challenges since I was studying full-time, working part-time as a research or teaching assistant, and being a mother to four children. This has been challenging. In addition, as accommodation near the university for a large family is expensive, my commute to the university typically takes away almost three hours of my time each day! This has impacted how much time I could spend within the university grounds and participate in extracurricular activities outside of classes.

Kelly: I have been involved in multiple leadership roles across various students' universities and graduate associations. As a Chinese female scholar, I feel quite fortunate to be able to serve in these capacities. My experience has been contrary to early studies by [27] that highlight a lack of opportunities for ethnic minority students to participate in student activities and become student leaders in different student associations at school.

Glory: As an expert in my field, I have published and presented at conferences and even worked as a visiting professor at an international university. Yet because I am Black and female (one of the two full-time faculty employed at my institution), I face microaggressions, my expertise is questioned, I code switch (switching between accents) and I am constantly trying to prove myself and inhabit the space I am in. Efforts to reach out to other Black female educators have been impacted because most are busy trying to manage their excessive workloads. Working in a predominantly white institution, I am always conscious of everything I do as I concurrently confront the split identity phenomena [28]. This is an isolating and difficult experience.

We found that the intersection of race and gender has impacted our academic choices and experiences as we navigate school-work-life balance, leadership involvement, and split identities in academia. There is a need for more Black female educators who can serve as mentors to early career female scholars and help them navigate the unique challenges that we face such as fear of betrayal, marginalization, and invisibility [20] [29]. Furthermore, the doctoral program could explore ways to incorporate teaching and research assistant experiences into the curriculum to provide equity and access to all students and to minimize excessive workload.

Learning and Research Communities

Anuli: My supervisors' research group has been pivotal in enhancing my socialization process and navigating the doctoral journey. The group, which consists of diverse members from different parts of the world and in various stages of their graduate study formed a learning community of researchers that provided various degrees of peer support. We met once a week to work on our group research projects, share knowledge, and support each other in our individual research efforts. For example, during the first year of my program, one of the team members collaborated with me to transform a course assignment into a conference proposal. I felt safe to ask questions and reach out for guidance with course selection, research discussions, collaboration on conference proposal writing, participation in reading groups, and support with grant writing amongst others.

Kelly: My master's and doctoral supervisors not only helped cultivate my academic abilities, but they also taught me how to face challenges, deal with difficulties, overcome adversity and walk out of darkness by myself. My transition from a master's to a Ph.D. program was a difficult

experience as I faced discrimination due to my decision to leave Canada for China to gain teaching experience in an elementary school in Hangzhou. During this period, my supervisors kept in touch with me and provided regular support and encouragement. These gave me the motivation and courage to face the challenges and apply for my doctoral degree.

Glory: I have had both informal and formal communities of learning and research. From one of these communities, I developed a strong collaboration with a colleague that has spanned many years, resulting in joint publications, conference presentations, and a visiting professorship at her institution. During my postdoc, my supervisors created opportunities to be a part of a research team which provided a space for me to thrive and grow. Through that process, my research interest and curiosity broadened to include faculty and students' mental wellness from the perspective of teaching and learning. Over the years, these learning and research communities have been helpful and provided strong support as I continue to build my professional identity.

Anuli's experience showcased how learning and research communities support peer learning and collaboration, while Glory's experience reveals how communities can transcend space, distance, and time. Kelly's narrative points to the role of community, creating lasting relationships and research collaborations. It is pertinent for advisors and supervisors to intentionally build and maintain research groups that can act as learning and research communities for graduate students.

Conclusion and Next Steps

Our study highlighted how mentorship and the intersectionality of identity, race, gender, and lived experiences influenced our professional identity development. Our findings revealed how the tensions that exist amongst our multiple identities, school-work-life balance, and split identities in academia impacted our ECR experiences. It also emphasized the role that learning and research communities, both formal and informal, acted as incubating sites that encourage peer learning, mentorship, and early scholar's development of disciplinary research skills and professional identity. We recommend that post-secondary institutions consider other factors that can enhance equity, inclusion, access, and retention of internationally trained minority scholars such as transferable skills from work experiences, incorporation of teaching and research assistant experiences into the curriculum, and the intentional building of learning and research communities for graduate students. Moving forward, we will conduct more interviews to address most elements of our conceptual model of professional identity development and then complete the data analysis for additional patterns and specifically for themes more relevant to engineering education. This study is significant because the result can yield a viable path for women in similar positions to succeed while providing effective approaches to mentoring underrepresented groups and graduate students. Our research expands the ongoing conversation into the Canadian landscape around the professional identity development of internationally trained minority ECSW in engineering, and education, as they represent leaders in their fields, within and beyond academia.

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