

Becoming in Action: An Autoethnography of My Professional Identity Development as an Aspiring Engineering Education Faculty Member

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Becoming in Action: An Autoethnography of My Professional Identity Development During the Rising Engineering Education Faculty Experience (Research)

Abstract

On the road to obtaining a graduate degree in engineering education, graduate students have limited opportunities to develop a comprehensive toolbox required for a future career as an engineering education faculty member. The current professional development trajectory focuses on acquiring technical knowledge through required courses and research projects. However, additional professional development activities require faculty advisors and students to strategically seek opportunities that develop other skills required of faculty members like teaching, course design, assessment, proposal writing, collaboration, and more. In addition, due to programmatic requirements, there is limited time and space for graduate students to explore “who they are” and “who they want to be” as a future faculty member. This paper is an autoethnographic account of my, a current engineering education graduate student, professional identity development as an up-and-coming engineering education faculty member during a visiting scholar experience.

This paper investigates the impact of the Rising Engineering Education Faculty Experience (REEFE) during my graduate educational journey on “who I am” and “who I want to be” as an aspiring faculty member in the engineering education community. The autoethnographic study includes analysis of interviews conducted at the beginning, middle, and end of the professional development experience and weekly reflective journals to identify significant interactions that influenced my construction, negotiation, or rejection of professional identities. In addition, the paper discusses how my identity development through this experience has informed my dissertation direction for degree completion. This study intends to highlight the benefits of professional development opportunities through avenues beyond coursework and research projects to encourage graduate students to explore alternative ways to develop their professional identity as aspiring engineering education faculty members.

Introduction

On the road to obtaining a graduate degree in engineering education, graduate students have limited opportunities to develop a comprehensive toolbox required for a future career as an engineering education faculty member. The professional development trajectory focuses on acquiring technical knowledge through required courses and research projects. As a result, it becomes the responsibility of faculty advisors and students to strategically seek opportunities that develop other skills expected of future faculty members. These skills include teaching practices, course design, assessment, proposal writing, collaboration, and more. The professional development process to acquire these skills is not uniform and some graduate students may not have opportunities to develop these skills prior to becoming a faculty member. In addition, the

significant programmatic requirements for obtaining a Ph.D. often leave limited time and space for graduate students to explore “who they are” and “who they want to be” as a future faculty member.

The Rising Engineering Education Faculty Experience (REEFE)¹ intends to help graduate students address these professional development gaps through a faculty apprenticeship and partnership program [1-3]. The faculty apprenticeship program matches graduate students in engineering education from two sending schools (e.g. locations masked for blind review) with two receiving schools. The receiving schools are institution partners with traditional engineering programs (e.g. Rose-Hulman Institute of Technology and Cal Poly San Luis Obispo). The program supports the professional development of graduate students by providing participants opportunities to use their engineering education expertise while engaging in the academic culture as a faculty member [1-3]. Through engagement in the program, graduate students can experience faculty life at a different institution, build their professional network, and practice skills as a faculty change agent [1-3]. In addition, the program intends to facilitate research-to-practice exchanges of knowledge by encouraging existing faculty at the receiving institutions to build their engineering education expertise [1-3].

How it works?

As a graduate student attending one of the two sending schools in the REEFE consortium, you apply to the program in a similar way as your academic job search. The REEFE consortium post job opportunities to their website. After a review of the job opportunities, you apply to programs by completing an application and submitting your cover letter, CV, research statement, and teaching philosophy. Upon review of applications, potential participants are interviewed by the member of the consortium and the leadership oversight of the position in which you applied. Once on campus, you are hired under the title of “Part-Time Visiting Faculty”. This grants you access to the institution as a faculty member while maintaining your current assistantship and benefits through your institution of enrollment.

This paper employs autoethnography research tools to describe and systematically analyze my REEFE experience to understand the influence of the experience on my professional identity-trajectory. By highlighting my personal experiences in my self-authorship journey, I intend to demonstrate the value engaging with professional development opportunities outside of your programmatic requirements and incorporating reflective practice to shape graduate students’ career trajectory. I hope by sharing my experience, graduate students, faculty advisors, and the community of engineering educators will continue to embrace novel professional development opportunities to enhance students’ educational journey.

¹ For additional information about the Rising Engineering Education Faculty Experience (REEFE) visit the REEFE website [3] and publications by Hixson, Ingram, Williams, Matusovich, and McCord [1] and McCord, Hixson, Ingram, and McNair [2].

Theoretical Framework

This paper's theoretical foundation is in identity development. Identity development is a complex construct with a variety of conceptual understandings and application. In this paper, I discuss identity development through Baxter Magolda's [4-5] theory of *self-authorship*. In the theory of *self-authorship* where they "move from socialization to rely on external authority toward establishing their internal authority..." [5]. The ongoing transitions occur through social interactions where the individual attempts to make meaning of their personal characteristics, experiences, and background knowledge to inform their decision-making process [4-5].

Methods

This paper utilizes an autoethnographic approach to describe and systematically analyze my REEFE experience to understand the influence of the experience on my identity development [6-7]. Autoethnography research methods integrate aspects of autobiographical and ethnographic methods to tell a story of personal experiences while enhancing the cultural understanding of others [6-7]. The autobiographical aspects are captured through reflecting on and write about personal experience, whereas, the ethnographical aspects focuses on participating in a community [6-7]. Due to integrating the methods, autoethnographies are commonly described as "a critical self-study in which the researcher takes an active, scientific, and systematic view of personal experiences in relation to cultural groups identified by the researcher as similar to the self (i.e., us) or as others who differ from the self (i.e., them)" [6:209].

Data Collection

During experience (approximately 16 weeks), I completed two interviews conducted by a member of the REEFE programmatic staff, daily and weekly reflections, analytic memos, and engaged in three monthly debriefs with the team. During the program-level interviews and monthly debriefs, I recorded my audio responses as artifacts documenting my experience. These audio files were transcribed verbatim to ensure accuracy. In addition, I adapted the three fundamental questions of self-authorship as described by Baxter Magolda's [4-5] as follows: (1) who am I today? (2) how do I know?, and (3) how does the experience I am described influence my future as a faculty member? I answered these questions in daily reflections I documented in a personal journal. I used these daily reflections to create summarized reflections submitted to the program staff weekly.

Data Analysis

Data analysis in this project occurred continuously as I attempted to make meaning of my experiences. This analysis process was documented in interviews, daily and weekly reflections, and monthly debriefs. At the completion of this experience, I utilized multiple rounds of coding to characterize my identity-trajectory to self-authorship. To code the data, I used Baxter Magolda's categories of "uncritically following external formulas," "crossroad", "self-

authorship,” and “learning partnerships” [5]. Through each round of coding, I created analytic memos to summarize interpretations of the experience for future reference.

Participant Background

Before embarking on my Ph.D. journey in engineering education, I worked at several medical device companies as a System Engineer. With a bachelor’s degree in Biomedical Engineering and a master’s degree in Healthcare Technology Management, I began this journey with a passion to create change in the culture of engineering. As with many others, my educational and professional trajectory was marred with consistent reminders of the underrepresentation of individuals with similar social identities. As a woman who identifies as Black with mixed-raced culture from Indigenous decent, I “fit” within the stereotypes of many deficit narrative of woman of color who choose to leave the an unsupportive culture. So, I often wondered how I not only survived but achieved success. This questioning has motivated my journey and lead me to focus on the influence of cultural factors on students’ professional identity development in engineering and the impact for students from diverse backgrounds. .

So, I found it fitting that during my REEFE experience, I was actively engaging in my own professional identity formation while conducting research on the professional identity formation of others. While at the receiving school, I co-taught a freshman engineering design course, engaged in curriculum modifications, and participated in institutional meetings and activities. To accomplish the REEFE program objective to support progress to graduation, I submitted an IRB application to conduct a research project as the principal investigator to inform the study design of my dissertation proposal.

Results

In this section, I use the categories described by Baxter Magolda’s [5] journey to self-authorship as a guideline to define my identity development characterized by key findings from my analysis. I use experts of my data collected through my experience to demonstrate: uncritically following external formulas, crossroads, self-authorship, and engagement of learning partnerships [5]. As discussed previously in the theoretical underpinning of this paper, I am defining the journey to self-authorship described by Baxter Magolda [5]. As I encountered different categories at different moments in this experience, I was challenged to define who I wanted to become as a future faculty member. The implications of these discoveries will be discussed in the discussion section.

Uncritically following external formulas

Before I provide the excerpt of my experience gaining IRB approval, I need to provide some background. As with anything when you first arrive on campus you are trying to get acclimated to your surroundings. I arrived on campus approximately 10-days before classes started, so I could engage in the new faculty orientation and other institutional welcoming events. Prior to

arriving on campus, I was informed of the timeline for approval of an IRB application to support the research I wanted to conduct while on campus. So, the first days on campus, I worked on submitted my IRB application.

After the initial review process, I was informed by their IRB contact that the application would need to go for further review. This would delay the initial timeline. At first, this wasn't a big deal, but days seemed to be rapidly ticking by. I've received notifications that the IRB is under review and at this time I have made all requested modifications. Unfortunately, we are now on week 3 of this process. I've asked around internally, but I am not sure if I should contact the IRB contact directly. I mean if I was at my home institution, I would know what to do, but in this case, a third-party reviews their IRBs and I am not sure if this acceptable. I guess if I hear nothing by Friday, what can one email hurt? (Week 2)

So, that Friday, I sent a follow-up email to the head of the IRB at the third-party organization and received IRB approval a few days later. Ok, so it probably makes sense for those reading this that I should have done this earlier. And, truthfully, if I was in an industry or working in a structure I was more familiar with I would of never let a project delay this far. However, during this journey of becoming an academic, I am not always sure. At this point in my identity-trajectory, I depended a lot on others as sources of authority. Here those sources of authority were people familiar with the process at the receiving institution. In addition, I had not completed an IRB application at my home institution because when I started my programming I joined established projects with completed IRB applications. Because of this self-doubt, I wrote:

I guess you can say, I am having imposter syndrome. In systems I am familiar with, like [location blinded for review] I am confident. I am not afraid to take initiative when challenges arise. But, the last couple of weeks, I am not sure who I am in this space, which is resulting in very conservative engagement approaches. Everyone here has been amazing and instantly invited me to participate as a colleague. It's now my time to give myself permission to be their colleague. (Week 2)

Crossroads

I am a firm believer that things happen for a reason. I identify as a critical scholar who engages in work around enhancing equity, diversity, and inclusion within engineering learning environments. As a graduate student this mostly takes shapes in research projects, publications, and committees I serve on within the department. I guess, I assumed this advocacy would be a natural transition when I became a faculty member. Three weeks into my REEFE experience this assumption was challenged by an incident that occurred on campus.

This week on campus tensions were high. A student group invited a speaker to campus that engaged in extremist conservative ideologies. This sparked a public outcry on campus discussed

in the hallways as the first student protest on campus in over 20 years. On a campus where the majority population is white and male, it was refreshing to see them rally around the issue. I became hopeful that addressing inclusive cultures in educational spaces was not just the work for those being discriminated against. However, in the same token, I am disappointed in my response yesterday to my students. Yes, I am well versed in the issues. Yes, I do research in the space, but I right now I feel like I failed. Two days ago, in class, my students asked me how I felt about the topic. Unfortunately, I had been in class most of the day and I had no idea what they were talking about. When I did some research that evening, I went in and talked with the other co-instructors to discuss how we would want to address this within our design studio. We came to an agreement and went about the day. By the end of the day, no one mentioned anything about the situation. I didn't either. It was like business as usual. Today, I felt like a visitor in someone else's house. And my spirit feels unearthed about it because this silence and inaction is what I write about when I talk about inclusion in learning environments. As I write this blog, I realized that I have a responsibility to myself, my students, and future colleagues to decide who I want to become within the work I do. I must speak up when no one else does. Otherwise, I am just well-intentioned recreating the status quo. (Week 3)

In this experience, I worked through who I want to become as a person, mentor, and colleague. I did not realize the complexity of the political pressure I would feel as a visiting faculty that I don't feel as a graduate student in the work I do. I realized as a graduate student, I feel free to write and explore equity concerns. In this moment as a faculty member, I felt like I was walking with my hands tied. No one said this explicitly, but from years of navigating the political landscape of the industry, I've become good at toeing the line. I realized that my words and actions are powerful examples for my students and my colleagues. And who will I be if my scholarship in practice remains this disjointed? On this day, I decided that I can speak up and I can lead transformation.

Learning Partnerships

Encounter the crossroad previously defined, I began my self-authorship by engaging with learning partners. These were individuals I felt comfortable enough to discuss this complexity of the identity negotiations I was encountering. In addition, these individuals helped to affirm my expertise and voice. I engaged in these discussions through one-on-one meetings, lunches, and eventually facilitation of an equity-centered workshop.

Looking back, it's crazy to think tomorrow I will host an equity-centered workshop. After the incident with [speaker name removed for blinded review], I questioned if I should do the work I am passionate about if I am not confident enough to lead transformational change in practice. I am thankful for those I have been able to open up with to walk me off the ledge. Instead of seeing this as an unremovable blemish, this is a great story to tell in future work about the importance of critical reflection when trying to create equitable learning spaces.

Self-authorship

Before the REEFE experience, I struggled to understand how my lengthy industry experience connected to my research agenda. In addition, I did not understand what this would mean for my role as faculty. Through the experience, I engaged in deep reflection that resulted in an understanding of how these experiences do not define different people but are interconnected and valuable.

REEFE has provided me an opportunity to explore who I am, who I want to become, and to practice classroom transformation. Through this exploration, I've realized that being away from [location removed for blinded review] has helped me connect the dots on my future. For example, prior to this experience I felt like my research direction and my industry experience told two disjointed stories and one day I would have to choose. Now, that I am away and have space to breathe and think, I see these are intricately intertwined. They are shaped by my desire to understand professional identity formation and its influence on historically marginalized communities. I need not pick within a faculty position I get to be both. I get to utilize my industry and research experience to enhance the classroom and improve the inclusionary cultures of the institution. (Week 8)

Discussion

These examples along with several others highlight the importance of exploring additional professional development opportunities beyond programmatic requirements. Professional development experiences provide lower stakes opportunities for graduate students to practice being a faculty member. I do not intend to suggest that in a single experience, I practiced all the skills outlined in the introduction. However, I began to identify who I am right now and who I want to be. Through experiences, graduate students can simultaneously prepare for the additional responsibility as a faculty member they are sheltered from by their faculty advisor. In addition, graduate students can put into practice concepts they are developing in their research or dissertation work to gain clarity and direction. In future work, I would like to further explore these anecdotes to understand how they may influence integrating into an academic culture as a junior faculty of color.

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