

Faculty Transformation: a Study of Professional Transition

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Introduction

In her 2009 TED talk “The Danger of a Single Story,” author Chimamanda Adichie describes the misunderstandings and missed opportunities that abound when we allow ourselves to make assumptions about an entire group or situation based on one perspective – the single story [1]. Many engineering academics enter the academy subscribing to a “single story” of success: an individual with a discipline-based PhD obtains a tenure-track faculty position where their goal is to gain tenure and promotion, all within a single field of research established during their PhD. To the detriment of our profession, that story fails to capture the experiences of many engineering faculty. Consequently, engineering academic culture perpetuates an environment that is often inhospitable to transitions and career paths that fall outside the dominant narrative of that story.

This research explores the professional transitions experienced by an engineering faculty member across role types, discipline affiliations, and institution types. Though personal and familial transitions were also occurring, the scope of the research is major professional transitions initiated by an engineering faculty member (e.g., change in institution, change in department, change in role title or type), rather than those related to tenure and promotion, administration, and retirement. Existing studies of faculty transitions tend to focus on career progression for tenure-track faculty members, transitions into the academy, transitions into the discipline of engineering education research, or transitions to and from administrative roles. Our work expands the understanding of faculty transitions to different types of transition experiences.

The long-term goal of our work in this space is to support faculty members in better navigating these types of transitions, as well as their institutions and administrators. We seek to destigmatize professional transitions that fall outside the “single story” narrative, leading to an academy that is more accessible to faculty members experiencing professional transitions.

Literature review

A number of studies in the literature focus on faculty transitions from a traditional engineering discipline into engineering education. For example, Borrego [3] explores the conceptual challenges encountered by faculty with traditional engineering research backgrounds learning to design rigorous research studies in engineering education. Gardner and Willey [4] investigate how faculty new to engineering education research develop their academic identity as an engineering education researcher. Siddiqui et al. [5] explore “the phenomenon of becoming an engineering education researcher” by connecting theoretical frameworks focused on identity, transformation, and social learning across several studies. In contrast to these studies focused specifically on transitions into the discipline of engineering education research, this research explores transitions between engineering faculty positions more broadly, including but not limited to transitions in research discipline.

Cutler and Coso Strong [6] survey the landscape of literature related to faculty impact in engineering education. The authors note that studies of faculty pathways tend to focus on starting

a faculty career and navigating tenure. Furthermore, the majority of engineering faculty-related research focuses on tenured or tenure-track faculty in research-focused positions at predominantly white institutions (PWIs) and doctoral universities with very high research activity (R1s). The authors identify gaps in the literature with respect to exploring pathways for faculty holding different roles or who entered through pathways other than grad school or post-doc positions, and for mid-career faculty transitions. They call for “additional research into the experiences, motivations, and career decisions of mid-career (and late-career) faculty” (pg. 297). Our work is situated in this gap by examining transitions that happen mid-career, involve a variety of role types, and take place across a diversity of institution types.

Reybold and Alamia [7] explore transition experiences in the early career of female education faculty. Their study focused specifically on transitions occurring after joining the academy. The authors note the lack of literature pertaining to how faculty identity changes over time and the impact of transitions on faculty identity. Using a lens of identity-based motivation, our work specifically explores the interaction of identity and professional transitions.

Research Questions and Theoretical Framework

We are interested in understanding the nature of a professional transition that is “self-imposed,” as described by the autoethnographer during an interview for this study. Prompting this interest is the lived experience of the autoethnographer navigating professional transitions that have arisen as she and her spouse have navigated dual careers in academia. One motivating observation was that her professional transitions have occurred over a prolonged period of time and are more complex than a “from – to” role change that dominates the literature. Accordingly, our first research question is:

(R1) What is the scope and complexity of professional transitions for this faculty member?

Furthermore, we wanted to better understand how identity shapes, and is shaped by, a faculty member’s professional decision-making in times of transition. Our second research question is:

(R2) What is the interaction between identity and this faculty member’s experience of professional transition?

We examine the second research question using Oyserman’s theoretical framework of identity-based motivation (IBM). The three foci of Oyserman’s theory are that (1) identities and their meanings are dynamically constructed in context, (2) individuals seek to act in identity-congruent ways, and (3) the interpretation of difficulty associated with imagining or engaging aspects of an identity influences the accessibility of the identity [8].

IBM has been used as a framework in engineering education literature, primarily in the context of student identity and motivation. Godwin and Kirn [9] studied connections between identity and motivation in undergraduate engineering students; they used IBM to choose connections between identity and motivation constructs in their structural model. Tsugawa [10] proposed a conceptual framework based on IBM to model identity and motivation in engineering graduate

students; her work explored the need for student-centered programs that support career goals and professional identity development in engineering graduate students. The study in this paper extends the application of IBM to engineering faculty members; the contribution area is significant as there is limited literature available applying identity-based motivation to faculty members in general or engineering faculty members specifically. There is literature applying Schlossberg's transition theory to the study of faculty transitions (for example, see [11]); however, we were interested in better understanding the interplay of identity and motivation of faculty members who experience transition, which is why we chose the lens of IBM.

Methodology

The primary data source for this qualitative, autoethnographic case study was an hour-long interview. Guiding questions were developed collaboratively by the autoethnographer and research collaborator based on the research questions and informed by the theoretical framework of IBM. Some of the guiding questions included:

How do you define a professional transition?

What professional transitions have you experienced?

What made these transitions important?

What specific challenges or difficulties have you experienced in your professional life?

How did you respond to those challenges or difficulties?

Of the phases of your career (as denoted by the identified transitions), which felt most aligned with your professional identity? Most misaligned?

The research collaborator, who has significant experience conducting interviews for qualitative studies, conducted the interview. The research collaborator is a white, non-Hispanic cisgender female with MS and PhD degrees in a traditional engineering discipline from an urban R1 land grant institution in the southwestern region of the US. The research collaborator and autoethnographer are currently faculty members in the same engineering department but are at different stages of transition into engineering education research from their original engineering disciplines. As such, the research collaborator is currently mentoring the autoethnographer through their latest transition.

The interview was informed but not overly constrained by the guiding questions. The interview was conducted and recorded using Zoom and then transcribed using Microsoft Word's transcription feature. Finally, the autoethnographer edited the transcript for correctness by comparing the transcript to the recorded audio.

The autoethnographer primarily used descriptive coding in the first coding cycle [12], analyzing the data for relevance to the research questions. The second and third coding cycles progressed based on analyzing data for connections to the proposed theoretical framework. The resulting codebook was developed by the autoethnographer in consultation with the research collaborator for confirmation of emerging themes, sensemaking, and suggestions for additional probing.

Part of the analysis journey also included reflections on the autoethnographer's transitional experiences outside those articulated during the interview. These reflections are recorded in

analytical memos written throughout the analysis process, starting from interview transcription. This additional data allowed the researchers to explore in more depth the patterns and insights initially revealed in the interview data and early coding analysis.

Case Description

The individual studied in this case will be referred to throughout the paper as Dr. Suzy or the autoethnographer. Dr. Suzy is a white, non-Hispanic cisgender female with an undergraduate degree in a traditional engineering discipline from an R1 land grant institution in the southeastern region of the US. Her master's and PhD are in the same traditional engineering discipline and were obtained from a large urban R1 institution with top-ranked programs nationally in her discipline. While a graduate student, Dr. Suzy received an NSF Graduate Research Fellowship and her research won international recognition. Dr. Suzy secured a tenure-track position prior to graduating with her PhD.

Since this paper explores Dr. Suzy's professional transitions, it is helpful to describe her professional roles. We present them in chronological order in Table 1 and will refer to them throughout the paper according to their role label. These roles span a period of 22 years since Dr. Suzy began her PhD. Note that role 7 is an administrative role, and as such the transition from role 6 to role 7 is not a focus of this research. The role is included in the table for the sake of a complete description of Dr. Suzy's professional academic journey.

Results and Discussion

Data analysis had both inductive and deductive phases; analysis was initially inductive in that coding was descriptive in nature, looking for emerging themes generally relevant to the research questions. Later coding cycles and sensemaking were focused on specific connections to IBM. In this section, we organize our results according to our major research findings.

Transition stages and the presence of an interstitial time period

Initial descriptive coding revealed a theme of staged transitions; in the interview, Dr. Suzy clearly described leaving roles as decisions distinct from decisions to start roles. Furthermore, Dr. Suzy's professional transitions, rather than being characterized by a change from one professional role into the next professional role, take place over time with a distinct interstitial time between the onset of a transition (leaving a full-time, long-term professional role) and a transition being complete (securing a full-time, long-term professional role). As an example, we will describe Dr. Suzy's transition following her first tenure-track position.

Dr. Suzy left her tenure-track role at the business-focused college (TT-Business) due to family considerations. She had been enjoying professional success in a role that was a good fit (as she described in the interview), but she was the mother of an infant and the wife of an aspiring member of the academy who had been admitted to a prestigious graduate program in his field. While preparing for a move across the country, Dr. Suzy did not seek a full-time position where the family was moving. Instead, she sought and successfully secured a position as a part-time

Role #	Role Label	Position Title	Institution ID and Description	Department Description	Duration
1	Grad student	Graduate Research Assistant (GRA) / Graduate Research Fellow (GRF)	U1: large urban R1 in southeastern US	traditional engineering discipline	GRA 2 years / GRF 3 years
2	TT-Business	Assistant Professor (tenure-track)	C1: business college in northeast US	multi-discipline, non-engineering	3 years
3	Adjunct-Online	Adjunct Online Faculty	U2: regional university in southwestern US with primarily online presence	business discipline	3 years
4	Adjunct-R1	Adjunct Faculty	U1: large urban R1 in southeastern US. (PhD alma mater)	traditional engineering discipline	1 semester
5	Adjunct-Regional	Adjunct Faculty	U3: regional university in southwestern US	multi-discipline including engineering	1 semester
6	TT-Regional	Assistant Professor (tenure-track, later tenured)	U3: regional university in southwestern US	multi-discipline including engineering	4.5 years
7	Assoc Dean	Associate Dean	U3: regional university in southwestern US	College of Arts and Sciences	3 years
8	Visiting-R1	Visiting Associate Professor	U4: R1 HSI in southwestern US	traditional engineering discipline	1 semester
9	TT-R1	Assistant Professor (tenure-track)	U4: R1 HSI in southwestern US	innovative engineering department with focus outside a traditional discipline	2 semesters, ongoing

Table 1: Description of Dr. Suzy's academic roles

online instructor, knowing it would provide some income while offering flexibility in work hours and location. A strong influence on the decision to not pursue another tenure-track position at that time was knowing that another family move would be necessary at the end of her spouse's program. Indeed, there would be two more moves, each one year apart, and two more roles (Adjunct-R1 and Adjunct-Regional) before Dr. Suzy found herself suitably positioned to seek long-term, full-time faculty employment.

Rather than a transition simply being defined as the change from one role to another, our analysis of codes related to transition chronology clarified that for Dr. Suzy, transitions proceed in stages. *"Many of my transitions have taken place in stages, in that I knew I needed to leave [TT-Regional]...Before I knew what the next thing needed to look like."* Furthermore, between some roles there is distinct interstitial time that is both literal (filling space between roles) and psychological in nature. Analytical memos helped clarify that, retrospectively, Dr. Suzy

identifies the three tenure-track roles as being transition-completing; they were roles that, once secured, she was no longer seeking the “next thing.” Considering the three tenure-track positions as ending points of transition, the roles in between (with the exception of the administrative role) are roles that were undertaken intentionally to fill an interstitial time, rather than being perceived as roles that would complete a professional transition. For example, during the interview Dr. Suzy said “*So I transitioned out of that and I was doing some online teaching, but that was always a holding pattern. I never... that was something I was doing just to be doing something. I was home for a few years. I really think about my next major transition was into [TT-regional role]. I had in between things, but I never thought of those as really the next step in my career, like my next real position.*”

The interaction of identity and professional transition

We know these interstitial periods are significant in Dr. Suzy’s professional journey; describing the transition out of the TT-Business role, Dr. Suzy states “*Because I wasn't leaving it for a specific thing, I didn't have a specific vision of what my next thing needed to be. In fact, I worked really hard to not define that because I knew if I was going to get back into academia I needed to be open minded to what that entry would look like.*” Knowing from IBM that accessible identity is constructed in context and that individuals seek to act in identity-congruent ways, **we can see in these interstitial times where Dr. Suzy’s professional decision-making is influenced by her salient identity.** Leaving the TT-Business role, Dr. Suzy’s identities as a wife and mother were more salient than any of her professional identities, and pursuing a part-time online role was more identity-congruent for Dr. Suzy than seeking another tenure-track position. Throughout several more family moves and professional transitions, Dr. Suzy’s salient identities remained mother and wife, and Dr. Suzy restricted her consideration of professional opportunities during this time in response to identifying as a mother and wife. It was while Dr. Suzy was in the Adjunct-Regional role, having had another child, and with her spouse having secured a long-term position (and thus no impending move on the horizon), that Dr. Suzy was able to again cultivate professional goals and start seeking a full-time role offering opportunities for professional stability, growth, and advancement.

In addition to the identities of mother and wife, recurring identity-related themes in the data through discussions of multiple professional transitions were that Dr. Suzy identifies as a follower in a two-body problem, struggles with identifying as a scholar, and often feels like an imposter. Representative examples of how these identities present in the data are found in Table 2.

Knowing from IBM that the accessibility of an identity and its meaning is dynamically constructed in context, and that whether an identity feels accessible in the future is impacted by how we are interpreting challenges, we hypothesize that there is a relationship between the identities Dr. Suzy accesses over time, where she is relative to a transition (out of, into, or interstitial), and her perceived options for her next professional role.

To analyze data specifically for connection to IBM, the autoethnographer coded the data using a timeline, articulating the transition stage and professional role (for example, during role 2, transition out of Role 2, into Role 3, etc.), and looked for meaningful interactions between the

Code description	Examples
Mother and wife	<i>You know, it's hard to move somewhere, but all the other things I know how to figure out. I know how to transition my kids' schools. I know how to find the dentists and the doctors...it's hard, but those are pieces I have control over.</i>
	<i>When I left [TT-business role] it was entirely family reasons...needed to relocate for a spouse and I was a new mother and was not going to try to do that [long distance]</i>
Follower in 2 Body Problem	<i>Because I tend to be the trailing part of the two body problem, and I try to fit into something where it makes sense, to not disrupt something. For some reason, I feel like if we're straightforward about the ask...they will not think as highly of my spouse as a candidate.</i>
	<i>And so because I'm married to an academic partner...I'm always thinking about: If we need to relocate, am I setting myself up for success? ...what am I doing now that's meeting expectations and setting me up for the future?</i>
Scholar	<i>I don't think being a scholar is necessarily a requirement for me to have continued success and contentment as a faculty member, but it is still something I want for myself.</i>
	<i>I did high quality research with faculty members who were high quality researchers...I got NSF funding. I wrote a paper that won a major award. I was succeeding in that way.</i>
Imposter	<i>I feel like I'm a burden...."Look, I'm here. Now you need to figure out what to do with me."</i>
	<i>Because I haven't done it, I lack confidence, and I worry that "Do I have a contribution to make?"</i>

Table 2: Identity-themed codes and representative data

timeline of Dr. Suzy's professional journey and the previously coded identities articulated in the data. We found that **transitions may provide an opportunity to reconsider future identities previously considered to be unattainable**. Examine how Dr. Suzy articulates her identity as a scholar, in chronological order according to a timeline of her professional journey:

Grad school:

I did high quality research with faculty members who were high quality researchers. Like they got career awards. I got NSF funding. I wrote a paper that won a major award. I was succeeding in that way.

TT-Business:

I didn't have that built in network of people I was collaborating with and it all kind of disintegrated around me. I just didn't spend the time to keep it up.

TT-Regional:

At [Regional University in Southwest], it was even less of an expectation and the teaching load was so high and we were program building. So, for myself and my colleagues, any research we did was, I would say light, and it was directly tied to the

teaching we were doing. So, we were basically publishing and presenting about program building.

Visiting-R1:

I was not a good fit for a tenure track position in that department because I hadn't been doing active research in that area.

TT-R1:

I have not been a scholar. I have not, ever since I left grad school, not ever would I define myself as a scholar. And I just want to know what that feels like.

(discussing her evolving relationship with scholarship in the context of how she negotiated for a tenure-track position as opposed to an instructional faculty position) I could have just very easily gone a different path. In the same department, right? Same environment, but a different role that didn't have that expectation. So I brought this on myself because I wanted it and...it showed me a lot that the people in various leadership positions at [R1 HSI] were willing to open that position for me. Like that showed me the trust and the value they're placing in me, and gives me motivation to work hard to make good on that.

It is evident that Dr. Suzy recognizes she was succeeding as a scholar in graduate school, but as she moved through her different professional roles that identity started feeling less accessible. In transitioning into the TT-R1 role, she begins talking about her identity as a scholar more positively, indicating that she is still seeking (or is seeking again) to identify professionally as a scholar.

Furthermore, we found that Dr. Suzy articulated the identity of research mentor for the first time in describing her transition into the TT-R1 role, which is another indicator that the identity of scholar was accessible for Dr. Suzy. When asked to describe her ideal position, Dr. Suzy responded,

Honestly, I think I might be in it. I just need more time...it's just me knowing how to do the things I'm trying to learn now. How to successfully mentor students, you know, what that looks like.

The evolution of Dr. Suzy's identity as a scholar over time was the most well-developed example in the data of how professional transitions can facilitate the ability of a faculty member to envision future identities that previously were not considered attainable. In future research, we will seek to confirm and extend this insight.

Limitations

Initially, this research focused on transitions in discipline, and the interview questions were developed partly in alignment with that. As such, the interview was more focused on scholarship and scholarly identity to the exclusion of teaching. This is notable as a limitation of the research presented in this paper, especially since the autoethnographer identifies strongly as a teacher.

The focus on transitions related to discipline lessened as the research progressed and data did not support the hypothesis that disciplinary association was a strong motivating factor in transition for the autoethnographer.

A second limitation of this work is that the autoethnographer has transitioned into her current professional role very recently (within the past year). Hence, aspects of the current professional transition are prevalent in the interview data and influence analysis disproportionately compared to previous transitions. Analytical memoing after the interview helped probe for more depth related to prior transitions.

Third, given the small amount of data used for this study, we are limited in our ability to fully investigate how accessible identities influence decision-making in professional transitions. In future work, we will expand data collection to additional cases to better understand how identity and motivation impact professional decision-making, particularly in the distinct interstitial space between “real positions” (as Dr. Suzy described them).

Implications and future work

In this section, we discuss both research and practical implications of the work presented in this paper. First, this work confirms that Identity-Based Motivation is a meaningful lens for exploring faculty transitions. Specifically, we found a relationship between salient identity and both professional decision-making and consideration of future identities. In future work, we want to explore these relationships in additional cases, looking for ways in which IBM may help us understand additional aspects of faculty transitions.

As for practical implications, this work can contribute to improving the accessibility of academia to engineering faculty who make career transitions outside of those associated with the “single story” narrative of tenure and promotion, or other commonly recognized forms of career advancement – for example, administrative roles and retirement. Dual-career couples and individuals who are or intend to become parents and caretakers are two groups who face considerable challenges with reconciling academic career plans with personal considerations. Tenure-track faculty positions at R1 institutions are seen as particularly incompatible for those groups [13], and the impact on women is more pronounced [14]. This specific autoethnographic study revealed that the interstitial time during a transition period – **a time that would typically be seen as a resume gap by a prospective academic employer, is a time that offered the opportunity for meaningful development in professional identity toward re-engaging the tenure track, as well as building experience and skills in diverse ways.**

For faculty who have chosen to leave (or declined to pursue) a tenure-track position due to family reasons (dual career, children, or otherwise), broadening access for those faculty to re-enter the tenure-track pipeline can also be part of the solution to retaining talented graduate students who are currently at risk of shifting their career plans away from tenure-track positions towards options perceived to be more family-friendly. In a survey with responses from more than 8,000 doctoral students in the University of California system, the percentage of STEM male doctoral students intending to pursue faculty careers with research emphasis declined from 40% when they started their PhD program to 28% at the time of the survey (at least one year later).

For female STEM doctoral students, the percentage intending to pursue faculty careers with research emphases fell from 31% to 20%. Concerns related to work-life balance are prevalent among the reasons why respondents indicated a change in career goal. However, when it is perceived as more common for women faculty in their departments to have children, women doctoral students see careers at research-intensive universities as more family-friendly [13].

Conclusion

This paper described the results of an autoethnographic study of the professional transitions experienced by an engineering faculty member across role types, discipline affiliations, and institution types. Using the theoretical framework of Identity-Based Motivation (IBM), we found that transitions proceed in stages and are more complex than a transition being characterized by leaving one role to inhabit the next. Rather, there is a distinct interstitial time in which professional decision-making evolves as the landscape of identity-congruent moves changes in response to shifts in salient identity. Additionally, we found that transitions may provide an opportunity for identities to emerge or re-emerge as possible future identities. These findings support the use of IBM as a theoretical lens to understand faculty transitions, as well as in providing evidence that the development in professional identity throughout the time of transition can help faculty members persist in re-entering the tenure-track pathway. Given the challenges of sustaining a healthy pipeline of a diverse STEM faculty, broadening access to the tenure-track beyond the entry point described by the “single story” narrative of success is an important implication of continued work in understanding and supporting faculty transitions.

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