

The Emotional Journey of Graduate Adjustment: A Collaborative Autoethnographic

Maria Camila Herrera Palacio , University of florida

Maria Camila Herrera Palacio is a Ph.D. student in Engineering Education at the University of Florida and a member of the ECoPac Lab (Engineering Communities of Practice and Change) led by Dr. Sindia Rivera-Jiménez. Her research examines how graduate students navigate institutional expectations through socio-emotional and relational dimensions of learning, with a focus on mentoring, identity formation, and self-adjustment in doctoral transitions. At UF, she also mentors undergraduate researchers. Before her doctoral studies, Maria Camila served as an adjunct engineering professor at EAFIT University in Medellín, Colombia, and led educational programs for vulnerable communities promoting innovative pedagogical methods. She also worked as a logistics director in the pharmaceutical industry and is the co-founder of TONGO, an educational initiative integrating socio-emotional and disciplinary skills through experiential learning. Her work bridges engineering education, industry experience, and social impact.

Dr. Sindia M. Rivera-Jiménez, University of Florida

Dr. Rivera-Jiménez is an Assistant Professor at the Department of Engineering Education (EED) and an affiliate faculty to the Department of Chemical Engineering at the University of Florida. Her research focuses on understanding the role of engineering communities while enacting their agency in participatory and transformational change. She is particularly interested in broadening the participation of minoritized communities by studying the role of professional development in shaping organizational cultures. As an education practitioner, she also looks at evidence-based practices to incorporate social responsibility skills and collaborative and inclusive teams into the curriculum. Dr. Rivera-Jiménez graduated from the University of Puerto Rico at Mayagüez with a B.S. and Ph.D. in Chemical Engineering. She earned an NSF RIEF award recognizing her effort in transitioning from a meaningful ten-year teaching faculty career into engineering education research. Before her current role, she taught STEM courses at diverse institutions such as HSI, community college, and R1 public university.

The Emotional Journey of Graduate Adjustment: A Collaborative Autoethnographic Study

Authors: Maria Camila Herrera Palacio, Sindia M Rivera-Jiménez, Ph.D.

Affiliations: UF Department of Engineering Education

Abstract

This study explores graduate self-adjustment as a relational and emotional process embedded within a mentor–mentee relationship during the first semester of doctoral study in Engineering Education. Drawing on reflexive narratives and sustained dialogue between mentor and mentee, the analysis explores how academic expectations, emotional responses, and emerging scholarly identities are interpreted and negotiated over time. Framed by the Phenomenological Variant of Ecological Systems Theory (PVEST), the study examines how stressors, coping processes, and social feedback interact in mentoring contexts to shape meaning-making and adjustment during early doctoral transitions.

The study is based on reflexive materials generated by the first author as part of her personal adjustment journey, which later became the basis for collaborative analysis through mentoring conversations grounded in trust and care. Bringing mentor and mentee perspectives into dialogue illuminates how mentoring relationships function not only as sources of academic guidance but also as developmental contexts that support emotional regulation, identity formation, and well-being. The analysis culminates in a set of relational prompts designed to support communication and responsiveness in mentoring relationships, particularly during early transition periods. By foregrounding lived experience, reflexivity, and relational sense-making, this work contributes practice-relevant insight into how mentoring can support graduate student adjustment in more intentional and human-centered ways.

Key words: Narrative inquiry; Collaborative Autoethnography; Mentoring; Qualitative; Reflection; Graduate education.

Introduction

"My weeks here are an emotional cycle. I start them very motivated, and then I face a lot of frustration. By the end of the week, I feel extremely tired. However, if I look back at this first semester, I will say that I have enjoyed it a lot."

First Author, Graduate Student

This reflection conceptualizes graduate *self-adjustment* as a dynamic process through which students interpret academic and personal demands, regulate emotions, and negotiate emerging identities within specific institutional and relational contexts [1], [2]. Early doctoral study is widely recognized as an intellectually and emotionally demanding period, requiring students to navigate new academic expectations, shifting professional identities, cultural and linguistic transitions, and evolving relationships, experiences that shape belonging, identity development, and persistence [3]–[6]. While prior research in graduate education has documented common stressors associated with doctoral transitions, much of this work has emphasized outcomes rather than processes [7], [8].

As a result, the emotional, relational, and meaning-making dimensions of graduate adjustment remain difficult to examine systematically. Understanding adjustment as a process rather than a static state highlights the importance of examining how students interpret experiences as they unfold, how they respond emotionally to overlapping demands, and how they construct meaning in relation to the people and structures around them [9]-[12].

This need is especially apparent in mentoring relationships, where power, care, identity formation, and professional development intersect [13]-[15]. Existing research has advanced the understanding of graduate mentoring by identifying sources of tension, misalignment, and dissatisfaction, as well as strategies to address these challenges [16], [17]. However, less attention has been devoted to how mentor–mentee relationships can be intentionally cultivated as relational systems that support ongoing adjustment, meaning-making, and well-being during the early stages of graduate education.

To explore these relational and emotional dimensions of graduate adjustment, this study draws on a qualitative, collaborative approach that centers lived experience, dialogue, and the reflexive sense-making within a mentor–mentee relationship. Qualitative methodologies such as interviews, focus groups, and reflective writing have been widely used to study graduate student experiences [3], [5], [7]. However, these approaches often position participants primarily as data sources rather than as co-constructors of meaning, thereby limiting attention to reflexivity and relational dynamics that shape interpretation and development over time [11], [12], [18], [19]. In response to these limitations, autoethnographic approaches have gained traction as a means of centering lived experience, emotion, and reflexivity within scholarly inquiry [20], [21], [22]. Collaborative Autoethnography (CAE) is well-suited to studying graduate experience because it foregrounds dialogue, shared reflection, and relational meaning-making, particularly within mentoring contexts and developmental transitions [23]–[29].

Accordingly, this study contributes to research on graduate education by examining how a mentor–mentee relationship shapes emotional adjustment, meaning-making, and persistence during early doctoral transitions. Situated within the Graduate Studies Division’s focus on mentoring, well-being, and supportive graduate communities, the paper foregrounds the human and relational dimensions of graduate education that are often difficult to capture through more distanced forms of inquiry.

2. Theoretical Framework

2.1. Graduate Adjustment as a Relational and Emotional Process

Research highlights that early doctoral experiences are shaped by intersecting academic, cultural, and institutional demands that extend beyond academic performance alone [6], [30]-[33]. Students must navigate unfamiliar disciplinary norms and expectations while managing emotional responses to uncertainty, stress, and identity change.

Language demands, institutional norms, and access to social support further shape how students experience and interpret these challenges. Prior work demonstrates that emotional well-being, self-confidence, and persistence are linked to students’ perceptions of belonging and relational support in their academic environments [6], [34]- [39]. These experiences do not unfold linearly; rather, adjustment emerges through ongoing interpretation, negotiation, and sense-making across time and context.

2.2. Mentoring as a Relational Developmental System

Mentoring is a central relational structure in graduate education, shaping academic socialization, professional development, and students' experiences of support and belonging. In academic contexts, mentoring involves a more experienced individual guiding a less experienced individual through disciplinary norms, research practices, and professional expectations [13], [25], [40]-[45]. Beyond the transmission of knowledge and skills, mentoring relationships influence how graduate students interpret feedback, negotiate expectations, and construct emerging scholarly identities [46].

Research commonly characterizes mentoring as comprising three interdependent and interrelated dimensions: instrumental support, psychosocial support, and relationship quality [13]. Instrumental support includes guidance related to research tasks, performance, and professional opportunities, while psychosocial support encompasses encouragement, validation, role modeling, and emotional affirmation. Relationship quality reflects the level of trust, satisfaction, and mutual respect within the mentoring relationship [13],[25]. A substantial body of empirical work has documented the benefits of effective mentoring for graduate students, including gains in disciplinary knowledge, development of research and academic skills, and improved academic adjustment [25], [41]-[45]. Mentoring has also been associated with increased self-efficacy, confidence, and the ability to cope with transitional challenges encountered during doctoral study.

2.3. Collaborative Autoethnography as a Relational Research Approach

Collaborative Autoethnography (CAE) is a qualitative approach that uses dialogue and collective reflection to explore shared phenomena and analyze lived experiences [23], [47]. Building on autoethnographic traditions that connect personal experience to broader cultural and institutional contexts, CAE emphasizes collaboration, reflexivity, and multivocal interpretation as central features of the research process [22], [23], [48], [49]. In this study, CAE enables iterative cycles of individual reflection and collective sense-making, allowing participants to interrogate how meanings are co-constructed through interaction and dialogue.

Reflexivity is central to CAE and is understood as a continuous process of examining how researchers' positionalities, assumptions, and relationships shape data generation and interpretation [11], [50]. CAE also foregrounds vulnerability, as participants share personal experiences of uncertainty, discomfort, and growth. When conducted ethically, this openness supports relational trust and enhances analytic depth, particularly in studies examining identity, emotion, and relational dynamics [29]. Within engineering education research, CAE has been increasingly used to examine identity, mentoring, and professional formation across academic and professional contexts [17], [25], [51], [52].

2.4. PVEST as a sensitizing lens and analytic scaffold

PVEST integrates ecological systems perspectives with phenomenological attention to individuals' subjective experiences, offering a theoretical lens for understanding how people interpret and navigate complex social and institutional environments over time [2].

The theory conceptualizes development through five interrelated components: (1) Risk Contributors, encompassing individual and contextual factors that shape perception and engagement; (2) Net Stress Engagement, representing interactions between vulnerabilities and environmental demands; (3) Reactive Coping Mechanisms, including emotional and behavioral responses to stressors; (4) Stable Coping Mechanisms and Emergent Identity, reflecting patterns

that develop through repeated self-appraisal and social feedback; and (5) Life Outcomes, capturing the cumulative effects of coping processes on well-being, relationships, and achievement [2]. Together, these components informed the interpretation of how experiences unfolded across individual, relational, and institutional levels.

3. Methodological Design

3.1. Methodological Orientation and Research Questions

This qualitative study adopts an interpretive, relational epistemology. It uses an empirical case to examine graduate adjustment through a Collaborative Autoethnography (CAE) approach within a mentor–mentee relationship, integrating reflexive narrative inquiry with PVEST. Rather than prioritizing generalizable findings, the study focuses on generating practice-relevant insights into how emotion, identity, and relational dynamics shape graduate mentoring experiences.

Within this design, the study is guided by three research questions that function as design anchors for interpretive inquiry, shaping how experiences are examined, reflected upon, and brought into dialogue rather than serving as propositions to be tested:

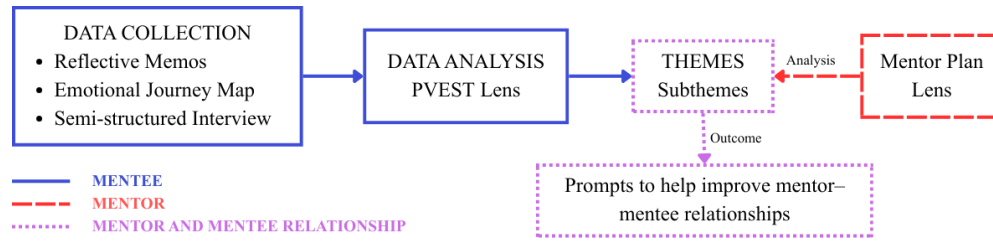
- RQ 1.** How does an international graduate student in her first semester make sense of and self-adjust to academic, social, and cultural stressors within a U.S. Engineering Education program?
- RQ 2.** How does a mentor in Engineering Education perceive, interpret, and respond to her mentee's experiences as an international graduate student during the first semester?
- RQ 3.** How can the combined narratives of mentor and mentee inform the development of relational prompts that strengthen communication, mutual understanding, and mentoring practices in graduate education?

Together, RQ1 and RQ2 guide parallel interpretive processes that center the perspectives of the mentee and mentor, respectively. RQ3 serves as an integrative and translational question, directing the synthesis of these perspectives into relational prompts that connect reflexive analysis to mentoring practice.

3.2. Research Design Overview

Figure 1 illustrates the parallel analytic processes and the subsequent integration phase that support interpretive synthesis from reflexive analysis to mentoring practice. At the first analytical level, the mentee generated reflexive data documenting her transition into a doctoral program during her first semester. These materials were analyzed through a PVEST-informed interpretive lens. At the second analytic level, the mentor engaged in a complementary interpretive process focused on her responses to the mentee's narratives. The final phase of the design involved integrative co-analysis. Insights generated through this integrative process were used to develop relational prompts intended to support reflective mentoring practice and proactive communication during early doctoral transitions.

Figure 1. Methodological Diagram of this CAE.



3.3. Author Positionality, Relational Roles and Power Dynamics

In this CAE, the authors are also shaping participants through their roles as mentors and mentees and through knowledge construction within a doctoral program in Engineering Education at a large public research university in the United States. Making these positions and the study context explicit is essential for understanding how meaning was constructed and how analytic decisions were made throughout the study.

The *first author* is a first-year doctoral student with prior experience in industry, research, and teaching within engineering contexts. As an international graduate student transitioning to doctoral study in a new academic and cultural environment, she reflects on experiences of academic socialization, linguistic adaptation, emotional regulation, and the reconstruction of scholarly identity. The *second author* is an Assistant Professor who serves as the first author's doctoral advisor and research mentor. Her scholarly work focuses on workforce development, mentoring, and organizational change within engineering education contexts.

This mentor–mentee relationship is inherently hierarchical and involves power asymmetries related to evaluation, authority, institutional knowledge, and professional advancement. As noted in the collaborative autoethnography literature, CAE may involve “preexisting power differentials, such as collaborations between professors and students,” requiring deliberate attention to how data are generated and shared [23]. These differences can shape what is shared, how experiences are narrated, and how interpretations are negotiated. Rather than minimizing power, this study treats it as a central relational condition of mentoring that must be explicitly acknowledged and reflexively examined.

To mitigate the influence of hierarchical power on data generation and interpretation, several strategies were enacted. In line with recommendations to establish explicit rules for data sharing in unequal relationships [23], boundaries between mentoring evaluation and research activities were clearly defined. The mentor asked the mentee whether she felt comfortable sharing specific reflections, whether she wished to release particular materials, and whether she felt engaged in the collaborative inquiry. The mentee retained primary authorship and decision-making authority over what was included or excluded in the manuscript. Mentors’ interpretations were framed as reflexive rather than corrective, and analytic sequencing positioned the mentee as the initial interpreter before mentor engagement. Structured dialogic co-analysis created space for alignment and tension to surface, supporting transparency in how meaning was co-constructed within the relationship.

3.4. Data Collection Process

Mentee-Generated Reflexive Data. The mentee generated the primary data. These included three forms of reflexive data. First, reflexive memos throughout documenting critical incidents

and emotional moments related to academic expectations, mentoring interactions, and personal adjustment. Memos were written shortly after each experience and included descriptive accounts of events, emotional responses, and initial reflections on meaning-making. These memos supported temporal proximity to lived experience and served as a foundation for subsequent analysis. Second, an emotional journey map representing her adjustment process from the decision to pursue doctoral study to the midpoint of her first semester. The map traced fluctuations in emotion, perceived stressors, coping strategies, and moments of affirmation or uncertainty. This visual artifact functioned both as a narrative representation of experience and as an analytic prompt that supported deeper reflection during dialogue and interview-based data generation. Third, a semi-structured interview was conducted by a member of a separate research project within the same laboratory examining how graduate students adjust to institutional expectations. The interview protocol was developed collaboratively by three researchers from that project team, two of whom are the mentor and mentee included in this study. The interviewer was not involved in the mentoring relationship examined in this paper, which supported reflexivity and reduced the influence of the mentor–mentee dynamic during the interview process. The interview lasted approximately one hour and followed a flexible protocol designed to foreground transitions, stressors, coping responses, and relational interactions. One segment of the interview was a guided walkthrough of the emotional journey map, which prompted deeper discussion of specific moments and shifts in experience.

Mentor-Generated Reflective Data. Mentor-generated data were collected through a structured reflective process conducted after the mentee had completed initial data generation and analysis. Following the mentee’s reflexive analysis, the mentor reviewed the mentee’s narratives and emotional journey artifacts and engaged in a scheduled mentoring meeting with the mentee. Guided by her Mentoring Plan as a developmental framework, the mentor led a reflective dialogue to interpret the mentee’s experiences in relation to mentoring practices, expectations, and forms of support.

This meeting was audio-recorded and served as the primary source of mentor-generated data. During the session, the mentor articulated her interpretations, emotional responses, and reflections on how mentoring actions, assumptions, and responsibilities intersected with the mentee’s adjustment process. When aspects of the mentee’s narratives were unclear, the mentor asked clarifying questions to support shared understanding rather than to correct or evaluate the mentee’s interpretations. These recorded reflections formed a second interpretive layer, capturing how the mentor made sense of graduate adjustment through a mentoring lens and enabling subsequent integrative co-analysis. This asymmetry was intentional and aligned with the study’s focus on the mentee’s adjustment process, positioning the mentor’s reflections as relational interpretation rather than parallel autobiographical data.

Language, Transcription, and Translation. Mentee-generated data were produced in Spanish, the mentee’s first language, to support authentic emotional expression. Audio recordings and written materials were transcribed verbatim and translated into English using an AI-assisted tool. The mentee carefully reviewed these translations to ensure accuracy and meaning preservation. Mentor-generated data were produced and transcribed in English. This bilingual approach prioritized meaning-making in the participant’s primary language while supporting collaborative interpretation across authors.

3.5. Analytic Process

Analysis proceeded through iterative, reflexive, and theory-informed processes consistent with CAE and interpretive qualitative inquiry. The analytic approach emphasized reflexivity, relational sense-making, and transparency in interpretive decision-making. Analytic work unfolded across three interconnected phases: (1) mentee-led reflexive thematic analysis, (2) mentor-led interpretive reflection, and (3) integrative co-analysis.

Phase 1: Mentee Reflexive Thematic Analysis. The mentee conducted an initial analysis of her data using reflexive thematic analysis, following Braun and Clarke's six recursive phases: familiarization, coding, theme development, review, definition, and writing [53]. This approach emphasizes the researcher's active role in constructing meaning and aligns with the study's interpretive epistemological orientation. Coding was conducted at both semantic and latent levels, attending explicit experiences as well as underlying meanings related to stressors, coping responses, social feedback, and identity-related sense-making. PVEST informed analytic focus by foregrounding interactions among contextual demands, emotional responses, coping strategies, and emerging identities across time.

Phase 2: Mentor Interpretive Analysis. The mentor engaged in a complementary interpretive process focused on her recorded reflections and responses to the mentee's narratives. This analysis was guided by the mentor's Mentoring Plan, which uses evidence-based practices [54], [55], and served as a developmental framework for examining how mentoring practices, expectations, communication strategies, and supports intersected with the mentee's adjustment experiences.

Phase 3: Integrative Co-Analysis. Through dialogic engagement, the authors examined how meanings were co-constructed, negotiated, and occasionally contested within the mentoring relationship. During these sessions, themes from the mentee's analysis were discussed alongside insights from the mentor's reflections, with attention to alignment, tension, and developmental implications. Insights generated through this integrative process informed the development of relational prompts intended to support reflective mentoring practice and proactive communication during early doctoral transitions. These prompts represent an analytic translation rather than a prescriptive outcome, illustrating how reflexive qualitative analysis can inform relational mentoring practices during early doctoral transitions.

3.6. Ethical and Relational Considerations

As the authors were also participants in an active mentor–mentee relationship, ethical considerations were embedded throughout all stages of the study. The inquiry emerged collaboratively, with mutual consent to co-authorship and explicit discussions of authorship, representation, and interpretive authority before and during the research process. This study was determined to be exempt from formal IRB review due to its collaborative autoethnographic design involving the authors as participants under the number ET00049721.

Attention to power, care, and responsibility was central to ethical decision-making. Importantly, the first author generated her initial reflexive materials before any intention of using them for collaborative autoethnographic research. These reflections were produced as part of a personal, mentoring-oriented, reflexive journey aimed at making sense of her transition into doctoral study, rather than as data generated for research purposes. Over time, elements of these reflections were shared during regular mentoring conversations focused on well-being, expectations, and adjustment challenges. Only after these materials had been created, and as relational trust

developed, did the mentor and mentee engage in dialogue and mutually decide to situate them within a collaborative autoethnographic inquiry.

The mentor's dual role as advisor and co-analyst, therefore, required ongoing reflexive attention to how authority, evaluation, and institutional positioning could shape the mentee's willingness to share experiences or challenge interpretations. To address this, boundaries between mentoring, evaluation, and research were made explicit, and participation in reflexive dialogue was framed as voluntary, revisable, and subject to ongoing consent. These practices were intended to support ethical integrity, relational care, and transparency in how power dynamics shaped interpretation, rather than to eliminate hierarchy.

Consistent with this orientation, the mentor's analytic role was not to validate or correct the mentee's interpretations. Instead, mentor reflections were intended to surface relational dynamics, assumptions, and points of convergence or divergence within the mentoring relationship, contributing a complementary interpretive perspective rather than an evaluative one. Given the emotional nature of the narratives, attention to well-being was maintained throughout data generation and analysis. Ongoing reflexive documentation by both authors supported transparency in how relational roles, power, and care shaped meaning-making over time.

4. Results and Analytic Insights

The sections that follow present analytical illustrations that illuminate how emotion, identity, and relational dynamics unfolded within a mentor–mentee relationship during an early transition in doctoral studies. The focus is on how reflexive and relational analysis supported sense-making for both mentor and mentee, and how these insights informed the development of relational prompts intended to strengthen communication and mentoring practice.

4.1. Overview of Thematic Clusters and Subthemes

Reflexive thematic analysis generated eight interrelated themes that capture the mentee's and the mentor's parallel reflections. These themes are analytically distinct but conceptually related, and cluster around three broader domains: (1) identity and belonging, (2) emotional regulation and coping, and (3) meaning-making and persistence.

Each thematic cluster provides a foundation for developing relational prompts that enhance communication and mentoring strategies. Anticipating the practical payoff, these clusters serve as anchors, translating the complex dynamics of academic and emotional adjustment into actionable insights. Table 1 summarizes the thematic clusters and their associated subthemes.

Table 1. Summary of Thematic Clusters and Illustrative Analytic Insights

Thematic Cluster	Subthemes	Illustrative Analytic Insights
Identity and Belonging	(1) Academic Identity; (2) Cultural Adaptation and Belonging; (3) Linguistic and Communicative Challenges	Adjustment involved renegotiating professional identity, authority, and belonging across unfamiliar contexts.
Emotional Regulation and Coping	(4) Cognitive and Emotional Regulation; (5) Coping, Resilience, and Self-Regulation	Emotional regulation and coping developed through iterative responses to overlapping academic and personal stressors during early transitions.

Meaning-Making and Persistence	(6) Social and Community Support as a Protective Factor; (7) Spiritual and Ethical Meaning-Making; (8) Growth, Motivation, and Persistence	Persistence was sustained through relational, ethical, and motivational frameworks that supported meaning-making over time.
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4.2. Thematic Cluster 1: Identity and Belonging

This thematic cluster captures how identity formation and belonging emerged as intertwined, relational processes during the mentee's first semester of doctoral study. The following subthemes collectively illustrate how entering a new disciplinary, institutional, and cultural environment requires ongoing negotiation of self-concept, legitimacy, and participation.

Subtheme 1: Academic Identity. This subtheme foregrounds the mentee's efforts to construct and legitimize herself as a doctoral student in Engineering Education while navigating tensions between prior professional expertise and emerging scholarly expectations. The mentee brought extensive experience across industry, academia, and entrepreneurship. However, the transition into doctoral study required a shift in epistemic orientation, from practical problem-solving to sustained inquiry and analytical depth, which she experienced as both disorienting and emotionally taxing.

"When I started the Ph.D., this was a shock because at first, I tended to answer everything in a very practical way, and I noticed that my classmates approached things with much more depth. I understood that I needed to shift from that practical mindset to a more investigative and analytical one."

This identity tension was further compounded by perceptions of disciplinary misrecognition. She encountered assumptions from technical communities that devalued Engineering Education as a legitimate scholarly field, leading her to feel undervalued despite her clear professional goals.

"In the technical community, I often feel that people don't fully understand what a Ph.D. in Engineering Education really is... they assume my technical background is minimal. That makes me feel a bit undervalued."

From the mentor's perspective, these struggles aligned with what she understood as expected developmental challenges during early doctoral socialization. Drawing from her mentoring plan, she emphasized intentional support structures aimed at fostering competence, belonging, and scholarly confidence in a field that may initially feel unfamiliar to engineers. She articulated a mentoring philosophy grounded in collaboration and shared purpose:

"I see the student as my teammate right in the lab, but also the cultural context where they're coming from."

The mentor also explicitly acknowledged broader disciplinary stigma surrounding engineering education research, recognizing how such narratives can shape students' self-perception and legitimacy. Rather than framing these tensions as individual deficits, she interpreted them as structural and cultural features of the field that require intentional mentoring responses.

These perspectives illustrate academic identity formation as a relational process shaped by prior experience, disciplinary norms, linguistic mediation, and mentoring practices.

Subtheme 2: Cultural Adaptation and Belonging. This subtheme examines how adapting to new academic, professional, and sociocultural norms shaped the mentee's sense of belonging during her first semester. From the mentee's perspective, adaptation involved recalibrating professional roles and power dynamics that differed markedly from her prior experiences. Having

previously occupied leadership positions in industry and academia, she described adjusting to more formal academic hierarchies as both subtle and disorienting:

“When I worked as a professor back home, I used to call my colleagues by their first names. When I got here, I realized that hierarchies are more pronounced... Back home, I was the one defining expectations for my team, and here I had to understand that I was now in the role of meeting the expectations set for me”

These shifts extended beyond formality to deeper questions of identity and legitimacy. Moving from decision-maker to novice requires renegotiating authority, autonomy, and self-concept. At the same time, the mentee actively sought belonging by engaging with local communities and sustaining transnational relationships, framing cultural learning as a deliberate and relational process rather than a passive adjustment.

Shared linguistic and cultural background with her mentor emerged as a particularly meaningful source of comfort. The mentee noted that having a Latina advisor contributed to feeling understood and supported within the research environment, easing the emotional labor of cultural transition during the early stages of doctoral study.

From the mentor’s perspective, cultural adaptation involved two parallel but distinct processes: socialization into U.S. culture and integration into the cultures of engineering and engineering education. She articulated greater confidence in supporting disciplinary adaptation through research participation, collaborative authorship, and lab practices:

“One is the cultural adaptation in terms of the engineering culture and the engineering education culture, which I think that I can convey to them in my dual role as the mentor and Principal Investigator.”

At the same time, the mentor reflected critically on the implications of shared cultural identity. While recognizing its value for fostering belonging, she also questioned how cultural affinity might shape mentoring dynamics and equity across her lab:

“What type of level of mentorship I’m giving to her because we share cultural similarities that are not maybe given to my other students?”

This reflection prompted intentional efforts toward transparency, shared expectations, and collective communication practices that support belonging across diverse mentoring relationships within the lab.

Together, these perspectives illustrate cultural adaptation as a relational and reflexive process shaped by hierarchy, identity, and mentoring awareness.

Subtheme 3: Linguistic and Communicative Challenges This subtheme explores how functioning academically in a second language shaped the mentee’s cognitive load, emotional energy, and participation during the first semester. The mentee described a persistent gap between conceptual understanding and communicative fluency. Although she had previously been regarded as highly proficient in English, she experienced difficulty articulating ideas in real time, leading to frustration, fatigue, and moments of withdrawal:

“It’s like I think one thing but end up saying something different... after a whole day in English, I get very tired, so sometimes I prefer not to talk.”

Despite these barriers, the mentee actively developed strategies to strengthen her communicative confidence. She sought immersive language environments, participated intentionally in class

discussions, and reframed communicative setbacks as opportunities for growth. A particularly challenging presentation experience became a turning point, reinforcing the value of preparation and persistence.

From the mentor's perspective, linguistic challenges were deeply intertwined with broader processes of identity formation and scholarly participation. Drawing from her own experiences as a multilingual scholar, she expressed empathy and normalization:

"After almost 14 years in the mainland USA, I still struggle... I'm still thinking and feeling in Spanish."

Rather than framing language as a deficit, the mentor emphasized adaptability, curiosity, and resilience as indicators of scholarly strength. She also reflected on the lab's multilingual environment as a protective context that disrupts narrow associations between English proficiency and academic competence. This prompted critical questioning of how communication practices might inadvertently privilege fluency over substance:

"How do we divide the fact that it's more about the English than just communicating the science that we're doing in the lab?"

The mentor's reflections signal an emerging awareness of the need to differentiate linguistic barriers from intellectual ability and to foster inclusive communicative norms within research environments.

Together, these perspectives show that linguistic and communicative challenges are not peripheral to doctoral adjustment but central to how students experience participation, confidence, and belonging.

4.3. Thematic Cluster 2: Emotional Regulation and Coping

This thematic cluster captures how emotional regulation and coping emerged as dynamic, developmental processes during the mentee's first semester. The following subthemes illustrate how the mentee navigated overlapping academic, personal, and environmental stressors while developing strategies to sustain engagement and well-being.

Subtheme 4: Cognitive and Emotional Regulation. This subtheme centers on how the mentee managed cognitive load and emotional intensity in response to simultaneous academic transitions and personal life events. Emotional regulation emerged not as a stable capacity, but as an evolving practice shaped by cumulative stress, uncertainty, and the need to maintain functionality in demanding contexts.

The mentee traced the beginning of her doctoral journey to a period of significant emotional vulnerability. The decision to pursue a Ph.D. coincided with an unsuccessful in vitro fertilization (IVF) attempt, followed immediately by relocation to a new country and immersion in an unfamiliar academic system. These overlapping transitions produced emotional strain that carried into the early weeks of graduate study:

"It was very difficult to leave everything behind and come here, and when I arrived, the amount of information in those first days was overwhelming."

Orientation activities, administrative requirements, ongoing professional commitments, and academic expectations quickly accumulated, leading to feelings of overload and disorganization. The mentee described procrastination not as a lack of motivation, but as a response to cognitive

saturation. Over time, she became more aware of her emotional patterns and began experimenting with strategies to regain focus and emotional balance:

“Many times, the workload feels too much. That’s when I started to procrastinate... Over time, I realized I needed a time-management strategy.”

From the mentor’s perspective, emotional regulation represented a challenging dimension of mentoring practice. She reflected on her tendency to focus on research processes as a domain where she felt most equipped to provide guidance, while recognizing uncertainty about how to engage effectively with students’ emotional experiences:

“It’s a very hard topic for me to manage... I don’t feel equipped to talk about emotions.”

Through the CAE process, the mentor became aware of emotional contexts that had not previously surfaced in routine mentoring interactions. This expanded her understanding of how personal histories and emotional labor intersect with academic performance, prompting reflection on how mentoring practices might better acknowledge emotional dimensions without overstepping personal boundaries.

Together, these perspectives demonstrate that cognitive and emotional regulation during doctoral transitions is shaped by both internal awareness and relational visibility.

Subtheme 5: Coping, Resilience, and Self-Regulation. Building on emotional awareness, this subtheme examines how the mentee developed coping strategies and routines that supported resilience and self-regulation over time. The mentee described regaining stability by re-establishing routines that supported physical, emotional, and cognitive well-being. Drawing on self-knowledge and discipline, she implemented practices such as consistent sleep schedules, meditation, exercise, time management techniques, and intentional exposure to English-language environments:

“After three weeks of my arrival, I decided to restart my routine... I feel that all these strategies have helped me a lot.”

These strategies were not framed as solutions that eliminated stress, but as tools that enabled sustained engagement despite ongoing challenges. Coping, in this sense, involved learning how to function productively within constraint rather than seeking to remove difficulty.

From the mentor’s perspective, resilience and self-regulation were valued outcomes shaped by both personal agency and environmental support. Drawing from her own graduate experience, she emphasized perseverance and intrinsic motivation as central to success:

“At the end of the day, in a Ph.D., it is the individual that wants to be a Ph.D... there has to be a process where they intrinsically decide to cope, be resilient, and self-regulate.”

At the same time, the mentor recognized her role in providing access to resources, communities, and opportunities that enable students to exercise that agency. She described intentionally connecting the mentee to support networks and observing her willingness to engage with unfamiliar spaces as indicators of emerging resilience:

“She just jumped in [to do a pilot study] ... it gives you inspiration for tackling the day.”

The mentor also acknowledged variability in how students respond to similar structures, noting that while mentoring plans can scaffold development, resilience ultimately emerges through individual interpretation and choice.

Taken together, these perspectives illustrate coping and resilience as co-constructed processes that require both internal commitment and external support.

4.4. Thematic Cluster 3: Meaning-Making and Persistence

This thematic cluster captures how meaning-making and persistence emerged as sustaining forces across the mentee's first semester. The following subthemes illustrate how the mentee interpreted challenges through relational, ethical, and motivational lenses that supported continued engagement.

Subtheme 6: Social and Community Support as a Protective Factor. This subtheme foregrounds the role of interpersonal and communal relationships in buffering stress and reinforcing belonging. Social support emerged as both an emotional anchor and a developmental resource, enabling the mentee to sustain engagement during periods of uncertainty and fatigue.

The mentee described maintaining strong connections with family and friends in her home country while intentionally rebuilding community in her new environment. These relationships provided continuity, emotional grounding, and a sense of home amid transition:

"I still depend on them a lot... I try to call my family every day... At the same time, I am also creating my own community here."

Within the academic context, participation in lab activities, shared office spaces, and informal peer interactions contributed to a growing sense of belonging. The mentee emphasized the importance of feeling part of a team and intentionally shaping her living and working environments to foster stability and comfort.

From the mentor's perspective, community was described as a foundational value rooted in her own developmental experiences. She framed mentoring as inherently relational and emphasized creating environments where students feel safe to ask questions, make mistakes, and navigate new roles:

"Community is key... we grow better when we're in community."

At the same time, the mentor reflected on the limits of her institutional knowledge as a faculty member who had not experienced graduate education at the same university. This awareness motivated her to engage more intentionally with graduate student experiences and to view mentoring as an evolving practice shaped by each new mentoring relationship.

Together, these perspectives show community as a protective factor that supports emotional stability, identity development, and persistence. Belonging, in this context, is not incidental but actively cultivated through relational presence, shared experiences, and mutual care.

Subtheme 7: Spiritual and Ethical Meaning-Making. This subtheme examines how spiritual and ethical frameworks supported the mentee's meaning-making during periods of uncertainty and emotional strain. In this context, meaning-making refers to the process through which the mentee interprets academic challenges in relation to personal values, purpose, and broader ethical commitments that guide her persistence in doctoral study. The mentee described faith as a grounding presence throughout her doctoral journey, particularly during moments of loss, transition, and decision-making. Spiritual practices functioned as mechanisms of emotional regulation and resilience, allowing her to move forward with a sense of peace even amid unresolved uncertainty:

“Whenever I face a difficulty, I say, ‘Father, I surrender myself to You,’ and I breathe in peace and calm so I can continue.”

From the mentor’s perspective, spirituality was not an explicit part of her identity, yet ethical commitments and community-oriented values served a similar meaning-making function. Drawing on principles of care, respect, and shared humanity, she described cultivating a lab culture grounded in kindness, mutual support, and ethical responsibility:

“You’re more than just Ph.D. student researchers... we can meet in the middle and maybe do something that helps you feel that you belong.”

The mentor also reflected on how lab traditions and shared rituals (i.e., lab meetings, lab parties, social media posts) functioned as communal practices that reinforced belonging, even when personal belief systems differed.

These perspectives illustrate meaning-making as a relational process that can draw on diverse sources, such as spiritual, ethical, and communal ones, while serving a shared purpose.

Subtheme 8: Growth, Motivation, and Persistence. This subtheme focuses on how motivation and persistence were sustained through cycles of effort, frustration, and accomplishment. The mentee described her experience as an emotional cycle characterized by motivation, frustration, particularly related to language, and gradual satisfaction through small achievements:

“I try to turn that frustration into curiosity... and whenever I have a small moment of success, I hold on to those little achievements.”

Rather than viewing exhaustion or difficulty as indicators of failure, she framed them as expected features of meaningful engagement, contributing to an overall sense of fulfillment despite fatigue.

From the mentor’s perspective, fostering motivation and self-efficacy was a central mentoring goal. She emphasized creating lab environments that normalize not knowing, encourage curiosity, and support incremental growth:

“Everybody understands that when you join the lab, you don’t know anything... the idea is what goals do you want to accomplish at the end of the semester?”

The mentor also recognized the mentee’s rapid engagement in scholarly activities, such as writing, mentoring others, and initiating projects, as evidence of emerging scholarly identity and long-term persistence. Looking ahead, she framed the mentoring relationship as a foundation for future collaboration, reinforcing a forward-looking orientation toward growth beyond the first semester.

These perspectives show persistence as neither purely individual nor externally imposed. Instead, motivation and growth are sustained through a relational ecology that includes internal drive, communal affirmation, ethical grounding, and structured mentoring support.

5. Discussion

This study extends prior research by integrating collaborative autoethnography within an active mentor–mentee relationship to generate practice-oriented relational prompts grounded in lived adjustment experiences. While mentoring and graduate adjustment have been widely studied, fewer investigations examine these processes through dialogic, co-constructed reflection that makes relational dynamics analytically visible.

5.1. Interpreting Graduate Self-Adjustment as a Relational Process (RQ1)

This study shows that first-semester doctoral self-adjustment is not a linear response to isolated stressors, but a relational and meaning-making process that unfolds over time. Consistent with prior research, the mentee's experiences reflect well-documented challenges related to academic socialization, cultural transition, and language use in U.S. graduate education [6], [32], [33]. The CAE analysis adds visibility into how these challenges were interpreted, negotiated, and emotionally regulated through ongoing interaction, rather than experienced as discrete difficulties.

Navigating new academic hierarchies, norms of address, and institutional expectations required a reorientation of professional identity, particularly given the mentee's prior leadership roles in industry and academia. These experiences align with literature on academic acculturation and early-stage vulnerability among international graduate students [6], [32], [33], while extending it by showing how identity negotiation is shaped relationally through mentoring interactions, lab culture, and opportunities for belonging.

Language emerged as a central stressor shaping both emotional and academic adjustment. The gap between perceived English proficiency prior to arrival and the communicative demands of doctoral study contributed to frustration, fatigue, and periods of disengagement. These patterns are consistent with research identifying language proficiency as a key predictor of academic and social adjustment difficulties [6], [34], [35]. This study shows that linguistic challenges were not merely technical barriers, but rather identity-laden processes influencing confidence, participation, and perceived legitimacy within academic spaces.

Emotional regulation and coping were central to navigating overlapping demands, with cycles of stress, reflective awareness, and intentional strategy development supporting balance and agency. Social and community connections, spiritual grounding, routines, and intrinsic curiosity functioned as key resources for persistence, aligning with prior work on coping, social support, and personal values in graduate and international student persistence [6], [30]– [38]. Interpreted through PVEST, these processes reflect the gradual stabilization of coping mechanisms and emergent identity development.

5.2. Mentor Interpretation and Relational Responsiveness (RQ2)

The mentor's reflections reveal mentoring as a relational and developmental practice shaped by instrumental support, psychosocial engagement, and relationship quality components widely identified in mentoring literature [13], [25]. These dimensions interacted dynamically as the mentor interpreted and responded to the mentee's experiences through both her mentoring plan and the collaborative analytic process.

Instrumental support emerged as the most clearly articulated dimension of the mentor's practice. Consistent with prior research, the mentor interpreted the mentee's early transition as a period requiring intentional scaffolding of research skills, disciplinary socialization, and academic identity development [41]– [45]. Early engagement in research tasks, collaborative authorship, and regular meetings supported the mentee's integration into engineering education as a scholarly field and reflected mentoring approaches that prioritize early competence development as a foundation for confidence and persistence.

Psychosocial support, while acknowledged as essential in the literature [13], [25], emerged as a more complex and reflexive dimension of the mentor's interpretation. The mentor explicitly recognized uncertainty about how to engage with students' emotional experiences, particularly

when those experiences extended beyond academic performance. Through the CAE process, previously unarticulated emotional contexts became visible, prompting reflection on how emotional awareness intersects with mentoring responsibility. This shift illustrates how mentoring practices can evolve through dialogue and reflexive analysis rather than reliance on predefined support structures alone.

Shared cultural and linguistic background further shaped the mentor's interpretive stance. Drawing on her experiences as a multilingual scholar, the mentor demonstrated heightened sensitivity to language-related fatigue, cultural negotiation, and identity tension—patterns documented in research on culturally responsive mentoring [13], [25]. At the same time, she reflected critically on how cultural affinity might influence mentoring equity across a diverse lab, raising questions of transparency and consistency. This dual awareness underscores mentoring as an ethical and relational practice requiring ongoing self-examination.

Relationship quality emerged as a defining feature of the mentoring dynamic. Mutual trust, openness, and respect shaped how both mentor and mentee interpreted their collaboration, consistent with prior research linking relationship quality to positive graduate outcomes [41]–[45]. Relationship quality was not framed as incidental, but as actively cultivated through communication, availability, and reflective engagement. The CAE process itself functioned as a relational intervention, strengthening alignment, and deepening mutual understanding.

5.3. From Combined Narratives to Relational Prompts: Implications for Practice (RQ3).

Instead of emerging deductively from theory, the prompts were generated through iterative CAE based on lived experience, mentor interpretation, and reflexive dialogue. Framed as questions and conversational entry points, the prompts (Table 2) are organized by theme and designed for flexible use during the first semester and other key transition points to surface expectations, values, and resources.

These relational prompts represent a practice-oriented synthesis of shared reflection rather than a set of universal solutions. Each set of prompts responds to specific gaps surfaced through the analysis. The Emotional Regulation and Coping prompts address the finding that emotional dimensions of adjustment often remained invisible in routine mentoring interactions and that the mentor identified uncertainty about engaging with students' emotional experiences (Subtheme 4). The Identity and Belonging prompts respond to the finding that identity renegotiation and shifts in authority, legitimacy, and cultural positioning were not always legible through standard academic interactions (Subthemes 1–3). The Meaning-Making and Persistence prompts address the observation that the mentee drew on spiritual, ethical, and communal resources that mentors may not routinely recognize as relevant to doctoral progress (Subthemes 6–8). Collectively, these prompts respond to gaps in the mentoring literature, which has documented tensions in graduate mentoring but offered fewer tools for proactively supporting communication and alignment during early doctoral transitions.

Table 2. Relational Prompts Derived from Mentor–Mentee Combined Narratives

Prompts for the Mentee	Prompts for the Mentor
Emotional Regulation and Coping	
• What experiences are currently contributing most to my stress or emotional load? • How do I respond when I feel overwhelmed, fatigued, or uncertain? • What strategies have been helpful, and where do I feel additional support or clarity is needed?	• How do I typically notice and interpret signs of stress or overload in my mentees? • What forms of support do I feel most comfortable providing, and where do I feel less equipped? • How can I create space for emotional check-ins without overstepping boundaries or assuming needs?
Identity and Belonging	
• How am I currently understanding my role and identity as a doctoral student within this program? • What expectations, explicit or implicit, feel unclear or misaligned with my prior experiences? • Where do I feel a sense of belonging, and where do I feel uncertainty or hesitation?	• How might my expectations about doctoral identity and independence be shaping this mentee’s experience? • What assumptions might I be making about preparedness, confidence, or disciplinary familiarity? • How am I creating (or limiting) opportunities for the mentee to develop a sense of belonging?
Meaning-Making and Persistence	
• What gives meaning to my doctoral journey during challenging periods? • What communities, values, or practices help me sustain motivation and perspective? • How do I define growth and progress for myself at this stage of my program?	• How do I communicate what growth, progress, and success look like during the first year of doctoral study? • What values or principles guide my mentoring approach, even if they are not always made explicit? • How can I support long-term motivation while acknowledging short-term challenges and uncertainty?

6. Conclusion and Future Directions

This study emphasizes the significance of exploring graduate self-adjustment as a relational and emotional process within mentoring during early doctoral transitions. By analyzing mentor and mentee narratives, it shows how emotional regulation, identity, and meaning-making develop through interaction, care, and negotiation instead of as standalone processes. Recognizing these dynamics reveals how mentoring serves as both academic support and a developmental context that influences how graduate students manage uncertainty and change.

The study is intentionally bounded, focusing on a single mentor–mentee dyad during a highly transitional first semester of doctoral study. While this limits generalization, it enables close examination of relational processes that are often difficult to capture through more distanced approaches. Future research could extend this work longitudinally and across multiple mentees, mentors, and institutional contexts to examine how mentoring practices, disciplinary norms, and institutional structures shape graduate adjustment, well-being, and persistence over time.

PVEST offers a useful lens for examining stress, coping, and identity development in relation to institutional and relational contexts. Future research could include frameworks to explore motivation, self-efficacy, belonging, and mentoring influences, enhancing understanding of how individual and relational processes evolve during doctoral education.

The relational prompts show how mentoring can be more intentional and responsive, emphasizing dialogue and shared understanding rather than prescriptive solutions. They highlight how mentoring relationships support communication, alignment, and care during critical transitions.

Overall, this study contributes to graduate education research by foregrounding lived experience, reflexivity, and relational sense-making as central to understanding doctoral adjustment. By centering the human dimensions of mentoring and transition, it offers insights that may inform more supportive, reflective, and responsive mentoring practices in graduate education.

7. Author contributions

Conceptualization supervision: Herrera Palacio and Rivera-Jiménez conceptualized the study and designed the analysis plan. *Supervision:* Rivera-Jiménez supervised the student researchers involved in the Project and oversaw overall project coordination and secured funding. *Data collection:* Herrera Palacio led the data collection. *Data preparation and analysis:* Herrera Palacio and Rivera-Jiménez cleaned the data, conducted descriptive analyses, and carried out qualitative data analysis. *Manuscript preparation:* Herrera Palacio and Rivera-Jiménez co-wrote the manuscript.

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