

The Emotional Support Context of the Entrepreneurial Mindset: A Narrative Inquiry Exploration of Engineering Research Students

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Abstract

The Entrepreneurial Mindset (EM) is a critical area of research in engineering education due to the value of entrepreneurial skills in professional society, often contextualized through cognitive, behavioral, and emotional elements. However, little research emphasizes the emotional component, neglecting the importance of the emotions students experience throughout the EM development process and the emotional support they receive. Narrative inquiry work in the engineering discipline tends to reveal students' reliance on emotional support, such as a sense of belonging being influenced by perceptions of emotional understanding among a community of students. However, this study is the first of its kind to investigate the emotional support element of EM within a narrative inquiry context. In the precursor to this study, 17 narratives of students' experiences in a biomedical engineering research program were analyzed, revealing that a crucial part of their EM development throughout the program and their undergraduate experience included a reliance on emotional support systems and structures. The current study further explored this theme, using thematic analysis to develop sub-themes related to the context of the support described, the individuals or entities providing the support, and the outcomes of the provided support. It was found that students commonly expressed seeking/receiving support from research mentors, family, and peers across multiple contexts. This emotional support results in academic successes, research knowledge, career reflection and direction, and positive mental health outcomes. Further work in the EM development space should highlight the importance of the emotional contexts of EM and encourage students to make meaningful connections that help them through the emotional processes of risk taking and stress that come with an Entrepreneurial Mindset.

Introduction

According to various definitions and conceptualizations of the Entrepreneurial Mindset (EM), an EM consists of multiple elements, often including cognition, behaviors, and personality or emotions (Daspit et al., 2023; Kuratko et al., 2021; Naumann, 2017; Shrivastav & Rao, 2025). Most commonly, definitions emphasize skills and attitudes such as opportunity recognition, creating value, and working with others (Haynie et al., 2010; McMullen & Kier, 2016; Naumann, 2017). These skills associated with EM are often valued in the engineering workforce due to the modern push for graduates with well-rounded professional capabilities (National Academy of Engineering, 2004). However, the elements of emotions, including stress, self-reflection, and emotional support from others, are vastly understudied in the engineering context (Shrivastav & Rao, 2025).

Studies that seek to understand how students develop an EM often describe influence from interventions in and outside of the classroom (Huang-Saad et al., 2018; Liguori et al., 2018), or outside experiences like jobs or internships (Nezafati et al., 2023; Yasuhara et al., 2012), describing developing EM related skills like teamwork, communication, and leadership (Cook & Cuper, 2010; Erdil, 2021; Kim et al., 2016). In some cases, these studies describe that the development of these skills is often influenced by some element of emotional support, such as support from faculty, other students, or teammates (Bell-Huff & Morano, 2017; Brown et al., 2015; Neck & Corbett, 2018). However, this is not often explored in detail, as most studies emphasize cognitive and behavioral skills as their main outcome (Nezami et al., 2016; Shrivastav & Rao, 2025).

In modern research, emotional concepts are commonly explored using qualitative methods to highlight the importance of the individual participants' experiences with emotional situations and processes. One such qualitative method is narrative inquiry, which highlights the individual's experiences from their own perspective, allowing them to tell their stories through a personal, narratively structured lens (Fisher, 1984; Polkinghorne, 1995). It is thought to be the most authentic and direct way of capturing an individual's lived experience (Fisher, 1985), and has gained popularity in engineering education (Bond-Trittipio et al., 2024; Clements & Struck Jannini, 2024) to better understand themes of stress culture, persistence, and sense of belonging (Brobst et al., 2023; Jensen & Cross, 2021). Only a few studies have employed the narrative methodology to understand EM development, but these studies point to emotional support systems and structures as an influence in the experiences of students in engineering programs (Huerta, 2018; Jackson, 2025; Jackson et al., 2025).

This project's previous work explored the direct narratives of 17 Biomedical engineering research students, extracting EM-related themes that commonly appeared. It was found that one of the major themes that appeared in 16 out of the 17 students' narratives was the need and appreciation for an emotional support system (Jackson, 2025; Jackson et al., 2025). Given that this concept is underexplored in the engineering EM literature, this study seeks to explore the emotional support systems and structures students describe as an element of EM development in engineering students. Specifically, this study seeks to answer the following research question: *How do students describe their emotional support systems and structures as related to their EM development, and how does it influence their perceptions of their experiences?*

Background

The Emotional Support Element of the Entrepreneurial Mindset

Though EM doesn't have an agreed upon theory in engineering education, research uses many different conceptualizations to frame their explorations. In a recent systematic review, Shrivastav and Rao (2025) analyze EM conceptualizations for four aspects: cognitive, behavioral, emotional, and personality. Out of the 13 definitions they analyzed, only two included the emotional aspect. One comes from Kuratko et al.'s (2021) Triad of EM, who developed their definition from literature across business, engineering, and psychology fields. This framework consists of the cognitive, behavioral, and emotional dimensions of EM, where the emotional element is governed by the balance of risk, stress, and ego. Kuratko et al. (2021) emphasizes that someone with a successful EM can only strengthen their cognitive and behavioral dimensions so much without the regulation of the emotional dimension.

The other definition comes from Mawson et al.'s (2023) work, defining EM as "a set of learnable cognitive and emotional competences conducive to developing and enacting behaviours to support value creation activity" (p. 483). They emphasize that "all individuals think and feel" (Mawson et al., 2023, p. 484), so it's important that more conceptualizations of EM consider the element of feeling. Through their work, they encourage faculty and pedagogical mentors to support their students through the development of both cognitive competence and emotional competence using various strategies. Some of these include introduction to entrepreneurial emotion and affect literature, open discussions about emotion, and highlighting emotional reactions and responses to various situations (Mawson et al., 2023).

Some conceptualizations of EM touch on elements of emotional support without specifically highlighting the emotional element, for example, Brunhaver et al (2018)'s Engineering Student Entrepreneurial Mindset Assessment (ESEMA) survey emphasizes Help Seeking as one of their six dimensions. This dimension encompasses help seeking within academic pursuits, teamwork, and general communication, but also includes the need for engineers to feel supported enough to feel comfortable asking for help (Brunhaver et al., 2018). In various engineering education studies focused on mental health, a consistent theme is that due to the stress culture of engineering programs, students struggle to seek both personal and professional help for mental health struggles (Jensen & Cross, 2021; Lipson et al., 2019). Based on many conceptualizations of EM focusing on working closely with others and a self awareness of one's own skills (Naumann, 2017; Shrivastav & Rao, 2025), making the connection between mental health-related help seeking and help seeking as an element of EM helps emphasize the importance of emotional support within a well-developed EM.

Despite the evidence for the inclusion of emotional traits like stress, support, and help seeking throughout EM literature, Shrivastav & Rao (2025) point out that the emotional element of EM is

underexplored (Neck & Corbett, 2018). Previous narrative inquiry work related to this project emphasized that students participating in research experiences developed many crucial EM competencies, but also stressed their need for emotional support, providing further evidence for emotional support as a crucial dimension of a successful EM (Jackson, 2025; Jackson et al., 2025). In the only other narrative inquiry investigation of EM, the participants consistently brought up the importance of having emotional support through their critical entrepreneurship experiences, from teammates to other students and faculty (Huerta, 2018). This may indicate that even without the emotional element framing explorations of EM, student participants tend to attribute many of their entrepreneurial successes to the influence of a positive emotional support system.

Exploration of Engineering Students' Emotional Support Using Narrative Inquiry

As stated, narrative inquiry and other qualitative explorations have led to highlighting the lived experiences of many students through their authentic perceptions (Jackson & Bodnar, 2023; Kellam, Gerow, et al., 2015; Kelly & Bowe, 2011), many of which include discussions of their need for emotional support (Bond-Trittipio et al., 2024; Clements & Struck Jannini, 2024). Students across studies tend to emphasize a common need for community, often mentioning finding commonalities with clubs and extracurriculars, bonding with other students with similar goals, and feeling supported by faculty (Fitzpatrick et al., 2024; Kali et al., 2024). In Secules et al.'s (2018) study, the participant reflected on her time as an undergraduate student after four years in the program, emphasizing that receiving support from her advisor, her roommates, and an upperclassman mentor helped her "carve out a space" (p. 208) in engineering, especially through their validation of her skills, knowledge, and opinions. Multiple studies have emphasized that these types of positive emotions and sense of community may influence positive academic performance, retention, and success in their engineering programs (Funk et al., 2024; Kellam, Walther, et al., 2015; Neck & Corbett, 2018).

Students tend to describe their lowest points throughout their engineering programs as times where they felt a lack of support from their community (Funk et al., 2024). This lack of emotional support is often highlighted in studies focusing on students of a marginalized status, such as non-white, non-male, non-abled, and first generation students (Camacho & Lord, 2011; Qaqish et al., 2020; Tomko et al., 2021). For example, (Figard et al., 2024) highlights that disabled women struggle to feel emotionally supported since there are very few other students or faculty that share similar identities. In another study, one of Tomko et al.'s (2021) participants describe hostility from an "old-fashioned" (p. 707) teacher, who did not trust them, a female student, to employ a leadership role within their makerspace. Without this support, especially from individuals in a position of power over the students, they may feel less of the validation component described in Secules et al. (2018), making it more difficult for them to succeed (Figard et al., 2024; Tomko et al., 2021). Therefore, it is crucial that faculty be aware of their potential biases and work to mitigate them, especially toward marginalized groups of students

(Camacho & Lord, 2011; Qaqish et al., 2020), to enhance their feelings of emotional support and sense of belonging.

As the usage of qualitative research, specifically narrative inquiry, continues to grow in engineering education research, it is crucial that we utilize these methods to expand on our existing knowledge of students' experiences and apply them to other contexts (Kelly & Bowe, 2011). Given the consistent findings surrounding the importance of emotional support systems in engineering, and the body of literature supporting the emotional development of engineering student entrepreneurial mindset, it is crucial that these elements are analyzed in conjunction to garner a fuller representation of the engineering student experience.

Methods

Study Context

This work builds off work from a larger project funded by the Kern Family Foundation, where the overarching goal is to explore the experiences of biomedical engineering entrepreneurial Research Experiences for Undergraduates (eREU) programs. The first three eREU programs (at Rowan University, Wake Forest University (WF) and Worcester Polytechnic Institute (WPI)) were implemented in the summer of 2023, where students were employed by one of three institutions for a 10 week summer research internship, either in the traditional REU program or an eREU program. Within both the eREU and REU programs, the students were assigned to a specific research project, where they worked with faculty and graduate student mentors, participated in professional development experiences, and presented their findings at the end of the program. However, the eREU program facilitated these connections through assigning the students to work with institution-affiliated startup companies, providing them with experience in an entrepreneurial environment.

Multiple methods of assessment were employed to understand the EM development of the REU and eREU students, including pre- and post-survey comparisons and qualitative analysis of reflections. Additionally, 17 students (8 eREU and 9 REU) were selected to participate in a narrative inquiry portion of the study. As stated, narrative inquiry is thought to be the most reliable way of capturing the lived experiences of an individual (Fisher, 1985; Polkinghorne, 1995), which is why it was chosen to evaluate the EM experiences of the 17 research students.

Participants

The demographics of the 17 participants included in the narrative inquiry portion of the study are listed numerically in Table 1. The students also self-selected pseudonyms to represent their data, but to avoid possible participant identification, these are not listed in tabular format. It is

important to note that demographics are listed in order of frequency within their respective group, organized alphabetically when frequencies were equal.

Table 1. Demographics of Student Participants

Institution	Position	Gender	Race/Ethnicity
WPI (5)	eREU (8)	Female (11)	White (9)
WF (6)	REU (9)	Male (6)	Hispanic or Latino (3)
Rowan (6)			Asian/Pacific Islander (2)
			Biracial or Multiracial (1)
			Black or African American (1)
			Middle Eastern/North African (1)

Data Collection

The 17 students were selected by the program director at each of the three institutions and asked to participate in a narrative interview during the last week of their program. The last week was chosen to capture as close to a full picture of their program as possible, from beginning to end. As recommended for conducting narrative inquiry research, interviews were conducted in person by the author of this paper, who was a PhD student at the time. Additionally, interviews were left open-ended, guided only by one overarching prompt, with follow-up questions asked as necessary. In general, narrative inquiry recommends that the participants guide the discussion as much as possible, which was practiced in this study.

At the start of the interview, the researcher described a desire to hear the participants' stories of their experiences both through the research program and through their entire engineering curriculum, and then presented the students with the overarching prompt: "Pretend like you're talking to a potential future employer. Tell me a story that highlights the skills that make you qualified for an engineering position." Though this study is concerned specifically with EM development, the structure of the prompt was purposeful about neglecting to include information about the EM elements of the research to encourage students to share skills and traits that are beneficial in their own perspective. By choosing to exclude information about EM in the introduction or the prompt, students were not influenced by what they may or may not understand about EM, and themes can be extracted from their raw, personal experiences.

Data Analysis

Narratives were recorded in person using a physical recording device and then transcribed using Otter.ai. After reviewing the transcripts for consistency, narratives were formulated by one researcher using Kellam et al.'s (2015) first method of narrative construction, in which the narrative is written in the first person using the participants' own words as much as possible. The narratives only deviate from the participants' own words to add linking words or phrases or transition between ideas. After the narratives were formulated, a second researcher reviewed them for any mistakes, repetitions, inconsistencies, and narrative structure.

Next, analysis of narratives was completed by two researchers over a series of steps. The goal of analysis of narratives is to extract themes from each individual narrative and then compare them across narratives, i.e., a form of thematic analysis specific to narrative inquiry (Clandinin, 2006; Clandinin & Connelly, 2004; Polkinghorne, 1995). First, the two researchers read one randomly selected narrative separately and recorded themes relating to three dimensions of EM: cognitive, behavioral, and emotional (Kuratko et al., 2021). Then they discussed the themes they extracted and randomly selected two more narratives to follow the same process. After discussing the emergent themes, the remaining 14 narratives were split in half, read separately, and then deductively coded. After developing an initial list of codes, the two researchers practiced inductively coding two more randomly selected narratives. After reconciliation and discussion, another set of two training narratives were inductively coded. When it was determined that the themes were accurately representative of all 17 narratives, the researchers finalized the codebook and inductively coded the remaining narratives. The condensed codebook consisting of the specific EM-related themes can be viewed in (Jackson et al., 2025). The focus of this paper is the emergent theme of "Emotional Support Systems & Structures," (hereafter shortened to ESS&S) which is defined as "feeling emotionally supported by specific people or structures." This theme appeared a total of 56 times and in 16 out of the 17 narratives.

Though previous work related to this project overviews this theme to compare between the eREU and REU student groups (Jackson et al., 2025), this paper will capture a more in depth look at the nuances of how students describe ESS&S. To do this, passages coded under ESS&S were extracted and further analyzed to record the specific people described as being part of the participants' emotional support system (family, professor, etc.), the context of the support described (academic, research program, etc.), and the impact of the support (mental health, career, etc.). For example, Penelope describes: "It was my first actual ChemE class. And the professor was so sweet and so supportive. And I think, like, it just made me really excited to be in ChemE." In this case, she refers to support *from* a professor, in an academic *context* (a Chemical Engineering class), that *resulted in* her having a positive academic outcome. The expanded ESS&S categorization codebook is presented in Table 2.

Table 2. Emotional Support Systems & Structures Expanded Categorization

Main Category	Sub-Category	Definition
<i>Support from</i>	Family	A family member or family friend that offers support
	Friends	A personal friend that offers support
	Other students	Other undergraduate students in classes or clubs that offer support
	PI/Research Mentor	The PI of a research project or other professional research mentor that offers support
	Graduate Student Mentor	A graduate student mentor in a research setting that offers support
	Professor/Advisor	A professor of a class or an academic advisor that offers support
	Workplace Mentor	A manager, boss, or other workplace mentor outside of a research/academic setting that offers support
	Professional	A professional in another field that offers support
	Institutional Resources	An academic institution's resources or atmosphere that offers support
<i>Context of Support</i>	Academic	The support is offered within the context of a class or discipline
	Extracurricular	The support is offered within the context of a club or other academic-related extracurricular
	Family	The support is offered within the context of one's family life or family unit
	Social	The support is offered within the context of a social experience, event, or perspective
	Research Experience	The support is offered within the context of an academic research experience

	Work Experience	The support is offered within the context of a work experience unrelated to or outside of the academic setting
	Future	The support is offered within the context of focusing on the participant's future goals or considerations
	Personal	The support is offered within the context of one's personal, mental, or spiritual development
<i>Result of Support</i>	Mental/Physical Health	The support impacts the participant's mental or physical health
	Academic Success	The support impacts the participant's academic success, including coursework, grades, perseverance, and perspective
	Career Projection/Reflection	The support impacts the participant's career decisions, goals, or plans
	Research Success	The support impacts the participant's success within their academic research, including research knowledge, experience, or outcomes
	Social Life	The support impacts the participant's social life, relationships, or endeavors.
	Skills/Attributes	The support impacts skills and/or attributes the participant develops or strengthens
	Goal met	The support leads to the participant meeting a previously set goal
	Mindset shift	The support impacts the participant's perspectives on themselves, their life direction, or on other people

Research Quality Considerations

As recommended within conducting qualitative research, the Qualitative Research Quality (Q3) framework was followed (Walther et al., 2013, 2017). To highlight a few specific examples, communicative reliability was followed by ensuring the participants' own words were used when generating the 17 narratives. This helped to mitigate researcher biases and limited the amount of research interpretation that could potentially deviate from the participants' intentions. During analysis, communication was maintained between two researchers who consistently met to reconcile and discuss the themes of the narratives. To follow process reliability, it was ensured that the interviewer recorded the interviews, checked the transcripts, and constructed the narratives following a consistent narrative structure. The two researchers responsible for coding also maintained a specific process, where they double coded all 17 narratives, first separately, then reconciled them together, to ensure the applications of the codes were consistent and correct.

Results & Discussion

Participants most often discussed receiving support from family (19 appearances (34%) across 12 narratives), research mentors (11 appearances (20%) across 9 narratives), friends (11 appearances (20%) across 9 narratives), other students (8 appearances (14%) across 8 narratives), and graduate students (8 appearances (14%) across 7 narratives). The context of this support was most often through their research experience (18 appearances (32%) across 14 narratives), academic (11 appearances (20%) across 9 narratives), and the student's future (11 appearances (20%) across 8 narratives). The result of this support was commonly career projection or reflection (16 appearances (29%) across 11 narratives), research success (14 appearances (25%) across 10 narratives), Skills/Attributes (12 appearances (21%) across 10 narratives), and academic success (11 appearances (20%) across 8 narratives).

The remainder of this discussion will highlight the emotional support discussed from three main groups: research mentors and graduate students, family, and friends and other students, and the contexts and outcomes that were frequently described.

Support from Research Mentors and Graduate Students

Given that this study was completed in part to evaluate students' experiences with their summer research program, it was expected that many of the participants would express receiving research-related support from research mentors. Out of the 9 students who expressed receiving emotional support from research mentors, 7 of them described this support in the research context and described elements of achieving research success. For example, Jenna described how her mentor encouraged her development of research knowledge:

I have a great mentor at [Home Institution]. He has been very helpful in guiding me, but his guidance makes me reflect on what I need to do to improve. So when I was doing research last summer, I would have to fill out weekly progress updates to update on what I've learned. Then at the end of the summer, he was like, "explain it all". So it was a lot of reflection and making me realize the things that I need to improve on.

Two students described support from their mentors leading to reflections about their career options or plans. For example, George reflected on his mentor's influence on his decision to go to graduate school:

My PI for the research at [Home Institution]...he's been a very big mentor and role model for me in terms of me wanting to go to grad school. I would not dislike going to [Home Institution] for grad school. But my advisor's like "you should definitely expand your network." From my experiences with research, I feel like I have a much better understanding of what it takes to be an engineer on a PhD track. And I hope that I can develop these skills and take the lessons I've learned this year into my senior year. And I'm looking forward to grad school.

The same was found for graduate student mentors, where participants most often described them within a research context leading to research knowledge or success. Some students, however, also described graduate students as helping them develop specific skills or attributes. For example, Kevin reflected:

I've learned a lot from the PhD student who mentors me...I've learned a lot of skills from him, like how to make my work neat, skills like time management and communication. Before, I was very messy, clumsy...but now I feel like I'm much better, but I still have a long way to go.

Based on these findings, the participants were not often relying on their research mentors, neither PIs nor graduate students, for emotional support outside of research-specific contexts. These students most often felt impacted through research success and knowledge, skills related to research success, and career direction. In Mawson et al. (2023), which presents one of the only conceptualizations of EM that emphasizes the emotional support element, they highlight that cognition and emotion commonly interact with each other, and emotion often shapes the development of cognition and behaviors. In a research setting, students often develop cognitive and behavioral skills, such as opportunity recognition and value creation knowledge (Burkey et al., 2019; Kotla et al., 2023), but Mawson et al (2023) emphasizes that without emotional consideration of individuals exposed to that entrepreneurial process, students will not reach their full entrepreneurial potential. In fact, they encourage faculty, research mentors, and other educators to weave emotional discussions into their EM education (Mawson et al., 2023).

Therefore, it is encouraging that these students expressed feeling emotionally supported within research through their early entrepreneurial journey.

Familial Support

In terms of familial support, family members were commonly providing support within the context of the student's future, leading to reflections about their career. This was usually expressed when students were describing their journey to becoming an engineering major. For example, Lily described her mother's encouragement despite Lily's lack of self-confidence:

I went to [Community College], because at the time I knew I wanted to go to college, but if I applied somewhere and got rejected, I don't know what I would do...My mom was supportive, but she was like, "I know you wanted to be an engineer."...She said "just take one engineering class,"...and so I did that...And the rest is kind of history. I fell in love with it.

Family members also tended to provide academic support by encouraging the student to engage in their academics or persist through their struggles. For Mackenzie, her mother's support in the context of her academics resulted in the formation of a study group:

I remember trying to reach out for study groups...and they all just stared at me as if I said something remarkable. That was definitely a challenging experience, and discouraging...My mom encouraged me, "just keep trying." And...by the second time, they didn't stare at me, they actually responded. And by the next year, we were able to form a bigger study group.

Some students reflected on how their influence from family as children directed their desires to pursue engineering, for example, Charlotte felt supported in her curiosity:

My mother is a pediatrician, and my father is an optometrist. I always liked having a pediatrician around growing up, but I was able to ask them questions, and when they didn't know everything, because I asked a lot of questions, they could get me books.

However, unlike the support from research mentors and graduate students, familial support seemed to expand beyond direct familial contexts. At least three students reflected on how emotional support from family led to academic success, mental/physical health, skills/attributes, and career reflection outcomes. This indicates that students' families tend to fill more expanded emotional support roles than individuals related to their research. Work within academia that discusses emotional support from an entrepreneurial perspective focuses on educators assisting students (Mawson et al., 2023), so not much stresses the relationships outside of academic settings that contribute to EM development. In one non-engineering study, Crosina et al. (2024)

asks students participating in entrepreneurship education to reflect on how their EM influences their relationships with family or friends, where some individuals described struggles with entrepreneurial development without familial support. Kuratko et al. (2021) also described management of familial relationships as crucial to strengthening the emotional aspect of EM, and Daspit et al. (2023) mentioned familial influence as an under-researched EM component.

Additionally, support from family is not often discussed in detail in narrative inquiry studies, where students often stress that their educational needs are met by their institutional community or faculty (Fitzpatrick et al., 2024; Kali et al., 2024; Secules et al., 2018). That is not surprising, considering that students are not often including their families directly in their experiences with their university life. This may indicate that since the students in this study were all uniquely participating in a research experience outside of a curricular setting, half of whom were completing internships within an entrepreneurial venture, that these entrepreneurial-related critical experiences may have two effects: a requirement of outside familial support since students are working in an unfamiliar, more "real-world" setting, or an ability to reflect on past needs for familial support based on the self-reflection and professional development required in their research programs. However, more work should be done in this area to confirm these potential trends.

Support from Peers

Friends and other engineering students perhaps spanned the widest range of contexts for their support, with at least 2 students reporting that emotional support from friends occurred within academic, social, research, extracurricular, or personal contexts. In terms of academic and extracurricular support, students often describe meeting someone in a class or a club that gives them advice or helps them study. For example, Penelope's friend helped her set career goals:

I had a friend, she was actually the president of [my] sorority for a little while, she was a ChemE, and she interned...at [large pharmaceutical company], and then got hired there full time. And she had the best experience and really convinced me that I should do it too.

Jenna described how having someone on her track team in the same major helped her feel more prepared for her courses:

There was a girl in the grade above me who was a biomedical engineer, so that was helpful because she could tell me if a class was going to be hard or something to prepare for it. So that was really helpful.

Some students also discussed how their friends and other students supported them through their social lives. For many of the students, simply having friends to be around was helpful for their confidence and motivation. Maria reflected:

I went back to working at the same restaurant I was working at, and I had my group of friends there. So I wasn't lonely by any means. But in school, it was just mostly online group chats and stuff like that. So I feel like having that group of friends from my job really helped give me that confidence to make friends in classes.

Similarly, George reflected on the effect of the COVID-19 pandemic on his social interaction:

Any interactions I had with my friends we would drive to a park and park in a circle. I remember that. We unironically did that pretty much every day because we were all so bored...But yeah, I missed out on a lot of stuff in my senior year that I was very much looking forward to. But I definitely was not as emotionally affected by it as other people were. I feel like I still had human interaction even though it wasn't the most normal human interaction.

Though no students reflected specifically on open discussions with friends about their mental health, some students felt better mental health outcomes just from existing with friends in a social context. Robin reflected on how she struggled with social anxiety, but has now found comfort and friendships in the other students in her discipline:

I'm really shy, and so my first semester I had such a hard time making connections with new people. I get so anxious about meeting new people, it takes me a long time. But BME is so small that we know everybody now, so I kind of made friends with everyone in my major, which is nice...it took me almost two years, it was just this semester that I really got comfortable with everyone else in the program.

Generally, support from peers came from a variety of contexts for a variety of purposes, which may be due to the relatability of experiences. Previous narrative studies indicate the importance of a peer community throughout education, especially for students of marginalized populations (Funk et al., 2024; Kellam et al., 2015). Feeling supported mentally, academically, and socially by a peer community is especially helpful in engineering programs, where many students rely on commonalities of experience to help them persevere in the face of challenge (Bond-Trittipio et al., 2024; Fitzpatrick et al., 2024). Acknowledging the benefits of emotional support from friends across multiple contexts may indicate a strong EM, as many EM conceptualizations stress that working well with others and maintaining good relationships with peers are critical EM components (Lackéus, 2015; Nooh, 2022; Shrivastav & Rao, 2025).

Conclusion

This work explores the experiences of biomedical engineering research students through narrative inquiry, where we highlight their reflections of emotional support, specifically as a component of their entrepreneurial mindset (EM) development. Upon categorization of the emotional support theme present in 16 out of the 17 students' narratives, we emphasized that students commonly expressed emotional support in three main groups: research mentors and graduate students, family, and peers. The research mentors and graduate students were commonly emotionally supporting students within the research context through knowledge of research processes, research-related skills, and career decisions as a result of exposure to research. As EM research tends to advise educators and mentors to act as emotional support for students developing their EM in educational and research contexts, these results are expected. The familial support expanded on the described contexts, but their support was generally concentrated within the contexts of the students' future and academics, leading to reflections on their career direction, academic success, and confidence. Familial support is underexplored in EM research, but some research suggests that this type of emotional support is necessary for individuals early in their entrepreneurial development. Finally, the emotional support from peers spanned across the widest range of contexts, where friends and other students acted as pillars of emotional support through academics, extracurriculars, personal struggles, and their social lives. This aligns well with existing narrative literature that emphasizes the importance of community, as well as entrepreneurial literature that emphasizes peer relationships as a critical EM component. Future research should continue to explore the critical support systems of students throughout their EM development.

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