Including Alice: Uncovering the Narrative of One Student’s Experience at the Intersection of International Student Status and Mental Health

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Abstract

Background: Several known unknowns of inclusion, including international student and mental health concerns, are rarely spoken about in diversity and inclusion topics. Faculty development resources for inclusion are limited, and narrating student experiences could help faculty empathize with and understand their students better.

Purpose: We share life stories of one minoritized student’s experience in engineering education. Within each story, we incorporate aspects of student identity and faculty interactions to help uncover new insights about inclusion in engineering education.

Methodology: We conducted one-on-one interviews with six minoritized undergraduate students as a part of a larger pilot study. This paper centers on the story of one participant, Alice, a Latina international student who experiences mental health struggles. Through narrative and discourse analysis techniques, we synthesized three key stories for our analysis.

Findings: Story 1 centers on Alice’s identity as an international student and faculty microaggressions regarding international status. Story 2 centers on Alice’s diagnosed anxiety and challenges with requesting accommodations from faculty. Story 3 centers on Alice’s experiences with a medical emergency and the faculty’s treatment of students’ personal lives.

Implications: This paper has implications for faculty members, including differentiating the intent the faculty member perceives from the enactment of the events that occur and from the often outsized impact that small moments can have on minoritized individuals. We suggest that inclusive communication and acts of perspective taking can help faculty members proactively create inclusive classrooms that make it easier for students’ to bring their whole selves to engineering.

Introduction

Within efforts to broaden participation in engineering, creating inclusive cultures in undergraduate engineering is a challenging and important domain [1], [2]. Undergraduate education is a pivotal time in students’ professional formation, and undergraduate institutions have documented problems with marginalization. Initial work on broadening participation in undergraduate engineering has mostly focused on race and gender. However, recent studies have expanded these conversations to include the representation and experiences of individuals from other minoritized groups (e.g., socio-economic status, LGBTQ+, disability). Yet, students with international status and those navigating mental health concerns are rarely considered in discussions of inclusion in US higher education.

Over one million international undergraduate and graduate students were enrolled in US universities during the 2018-19 academic year, with over 500,000 in science, technology, engineering, or math (STEM) fields [3]. At the same time, findings from a 2018 national college health assessment indicated that 60% of college students reported feeling overwhelming anxiety, 40% reported experiencing depression, and 15% reported having both depression and anxiety.
In engineering education, international students are often discussed as a part of another identity group (e.g., Black international students [5], female international students [6]); there is a small but emerging body of literature on mental health in engineering education (e.g., Jensen [7] and Sanchez-Pena [8]). Given the large population of these students in engineering, it is imperative that we expand and deepen our understanding of inclusion considering the intensity and complexity of student experiences within engineering educational culture.

While issues of inclusion are systemic and involve many actors across an institution, we argue that individual faculty have an important role to play in creating an inclusive classroom for students. Faculty support and student-faculty interaction are found to influence program satisfaction, student success, increased sense of belonging, and overall providing a positive impact on the student experience [9] - [13]. Within a university, faculty are the closest point of contact for most students and have the power to shape classroom culture and eventually student’s academic experiences, given that the classroom culture is influential in defining and shaping student’s learning and overall academic experiences [13]. Therefore, we position engineering instructors as important actors and purveyors of engineering culture, with a significant role in promoting inclusion.

Purpose

The purpose of this study is to explore the complex set of challenges faced by one undergraduate student in a US engineering program. As part of more extensive research in which interviews were conducted with several marginalized and minoritized students, we selected a single interview with an international engineering student, Alice (pseudonym), who is also coping with anxiety due to academic and personal challenges. In this paper, we identified three significant events in Alice’s narrative related to her life experiences as an international student and as an individual managing her mental health while navigating engineering education. Student narratives, such as Alice’s, can serve as a potential source of information to help faculty learn about student experiences that are not immediately apparent or explicitly linked to the classroom. By gaining a deeper understanding of our students, we can identify ways to include them and their cultural histories and backgrounds more intentionally. By centering conversations on the breadth of a single individual’s experience in US engineering education [14], we contribute to the ongoing and emerging discourses focused on including individuals who have not been considered within traditional diversity, equity, and inclusion initiatives in engineering education.

Rationale

Expanding Conceptions of Diversity and Inclusion in Engineering

Perhaps one reason for the limited work focusing on the inclusion of students with international status or mental health challenges can be attributed to the underpinning logic of diversity and inclusion. This logic hinges on the idea of representation in which comparisons between population estimates and representation in a particular discipline are used to motivate the efforts to broaden participation [15]. For both international students and students with mental health challenges, it is not possible to define their representation as under-represented relative to the
broader US population. For example, depending on their local context, international students may or may not be considered a minority. Still, the concepts of being minoritized (i.e., being treated as a minority in a given context) and marginalized (i.e., being oppressed or subjugated) often apply to international students' experiences, particularly in the current national climate. Similarly, mental health issues are an essential dimension of inclusion and well-being and are often associated with other categories of experience (women, under-represented racial minorities, international) [16]-[17].

Positioning Engineering Faculty as Agents of Change for Inclusion

Winters’s Inclusion Model or Equation [18] names two interdependent components that must work together to promote an inclusive culture within an organization: (1) macro forces that focus on organizational culture and organizational systems, and (2) micro behaviors that involve individuals’ day-to-day experiences inside and outside the organization. Winters further emphasizes that both components must work “synergistically” and must be “driven both by top-down leadership and bottom-up engagement” [18, p. 209]. This model can be extended within engineering institutions, where individual faculty can act as a change agent by demonstrating and practicing inclusive behavior, thereby aiding in institutional reform such as incorporating diversity and inclusion into the classroom. Within engineering education, faculty are key grassroots change agents in creating equitable and inclusive experiences for undergraduate engineering students [19]. However, several scholars have found that faculty understandings of equity and inclusion require further development [13]. Although some engineering faculty express interest and capability to create an inclusive environment [19], a cross-disciplinary survey of faculty perceptions of international students found that STEM faculty were significantly less sensitive and understanding than their colleagues in the humanities and social sciences [20]-[22]. STEM faculty often framed international students' challenges as deficits [20] and prioritized their assimilation and acculturation into the dominant US culture. Studies have found the more awareness and experience garnered by faculty about a particular group, the more likely they are to position themselves as active agents for change [19], [23], [24]. Therefore, it is imperative to develop faculty opportunities to learn how minoritized identities and experiences impact our students inside and outside the classroom [25].

The Known Unknowns of Inclusion from the Faculty’s Viewpoint

Within engineering classrooms, diversity is often thought of as something easily observable and quantifiable, primarily regarding the apparent gender and racial makeup of a particular set of students. However, hidden beneath this simple picture’s surface are a range of additional student identities, experiences, and aspects [26]. Here we discuss three categories of known unknowns that inform our work.

First, we know that students hold significant identities and experiences that are not immediately apparent to others (e.g., sexual orientation, disability status, veteran status, socio-economic status). Due to their non-apparent nature, these dimensions and experiences are not frequently encountered by faculty or often go unnoticed in everyday classroom settings and interactions. In this perceived absence, it is often assumed that students embody the normative social positions
associated with engineering. Nevertheless, these norms are not conducive to learning for all students and can significantly influence the ways they interact with faculty, classroom infrastructure, and course resources.

Second, students with both non-apparent and apparent identities that conflict with normative sociocultural expectations in engineering can experience a range of emotional and cognitive impacts that lie beneath the classroom’s surface view. Studies of hidden identities have shown that a lack of an inclusive atmosphere can prompt students to intentionally or unintentionally pass (i.e., are regarded by others as belonging to a normative group) in engineering classroom environments and have reported increased levels of stress and anxiety, a lowered sense of belonging, and even social rejection among students [27] - [29]. Similar studies have also found that students can experience increased anxiety due to a fear of being rejected or not-believed when a hidden identity is disclosed [23], [27]. Studies of students with apparent minoritized identities have also reported being subject to spotlighting, hypervisibility, and tokenism [30], [31]. At the same time, students across apparent and non-apparent minoritized identity groups have been shown to encounter and are required to navigate microaggressions [32], stereotype threat [33], [34], and impostor syndrome [35], [36].

Third, we note that each of the major intersections of social identity and oppression (e.g., race, gender, class, sexual orientation) overlap within individuals’ experiences creating even more complex circumstances. This perspective is highly consistent with the theory of intersectionality [37], a powerful analytical lens for equity in higher education [38], [39]. In Crenshaw’s original work, gender and race are conceived as complex and holistic; thus, Black women’s experiences in society are not accounted for by combining Black men and White women’s experiences. By leveraging identity and oppression within an inclusive culture, we resist a common simplification of intersectionality to “multiple identities” and emphasize the contextual and reflexive nature of identity formation concerning cultural definitions of and allocations of power to social groups [40]. This paper conceives of student individuality in terms of these multiply defined minoritized identities that contribute to nuanced interactions and experiences in engineering culture experiences.

Methods

This paper is part of a larger pilot research project exploring students' shared experiences and building inclusive classroom environments in engineering. The first and second authors (Kali and Secules) conducted semi-structured interviews with undergraduate engineering students at a large public Minority-Serving and Hispanic Serving Institution with a large international student population. For this study, we focus our discussion on interviews conducted with a single participant we have given the pseudonym Alice. The first author was the lead interviewer with Alice, while the second author supported the interview. The structure of the open-ended questions along with the first author’s having shared experience and knowledge on international status, enabled Alice to have agency in how she told her story and made meaningful connections across events. Encouraging Alice to identify and discuss salient life experiences enhanced the authenticity and credibility of the interview [41], thus producing a qualitative form of validity to the data collection process. This approach provided a rich narrative for us to conduct an in-depth
analysis that holistically captured the interactions among Alice’s minoritized identities and life experiences, rather than examining a collection of discrete events. The interview lasted approximately 90 minutes and was conducted using the Zoom online conferencing platform. Based on the information that Alice shared in her first interview, she was interviewed again to provide clarification and expand on her experiences in engineering. Each interview was transcribed in its entirety.

Using discourse analysis approaches [42], the audio-recorded interview was initially content-logged, which included using timestamps and brief descriptions to track specific and critical events discussed during the interview [43]. The research team listened to the interview together, and a set of significant moments and stories were identified. Next, utilizing a narrative-based analytical approach [43], these segments were reordered and edited to construct a concise and cohesive narrative while preserving Alice's meaning and lived experience. The constructed narrative features critical events and “are the mechanism by which the most significant occurrences are transmitted to listeners” [44, p. 72]. As a quality check, we shared our interpreted narrative with Alice to ensure its credibility and authenticity. In later sections, we present our findings using extended representative quotes from Alice’s story.

**Positionality**

The first author, Kali, identifies as an international, cis-female graduate student in the College of Engineering and Computing from an Asian country. She has been working on this project for the last six months as part of her graduate research, exploring student experiences that are often hidden or misunderstood by faculty and peers within the classroom. As an international student, she shares an identity with the participant, which likely contributed to establishing rapport and a trusting relationship with the participant.

The second author, Secules, identifies as a cisgender White man, working as an engineering and computing education professor and focusing his research on equity and inclusion. He has some experience of living abroad and participating in therapy but primarily relates to the interview and the paper topic as a researcher invested in issues of equity and inclusion.

The third author, McCall, identifies as a cisgender White woman working as an engineering education professor who focuses her research on apparent and non-apparent disability identity formation. She primarily relates to the paper topic as a researcher invested in the impacts of hidden and non-apparent identities on the student experience in engineering education. Thus in our analysis, we approached the issue as both insiders and outsiders from multiple perspectives.

**Limitations**

We recognize that our narrative methods limit us from determining any absolute truth related to the recounted events and prioritize certain facets of the narrative (Alice’s identity, faculty interactions) over others (Alice’s own navigational actions and resilience). We caution readers against trying to pick apart the truth of the narrative or focusing on missing details.
We also highlight the limitations of a single student narrative to be generalizable to all students or those who share Alice’s identities. We likewise caution readers not to essentialize the story as representative of all students with mental health issues, all Latinas, all immigrant students, or even all Latina immigrant students suffering from anxiety. By telling Alice’s specific story, we are uplifting a student perspective seldom heard in engineering education and treating it with a level of nuance that allows for recognizing the complexity of student lives and experiences, leading to the amelioration of the educational experience of all students. Alice's story provides a starting point from which we can begin to identify instances of exclusionary practices and cultures in engineering to begin to change them. We need to learn to treat these students' stories as their truths and not disregard them as biased opinions.

An Editorial Note on the Findings

We recognize that some readers may read our findings as intending to blame the specific faculty involved [45]. In diversity and inclusion discourse, it is relatively easy to call out problematic actions or events; it’s harder to create lasting change and impact through a complex system. It is easy to criticize students for their problems in a classroom without empathizing with their perspective; it’s harder to tackle inclusion in increasingly ambitious ways. In this manuscript, we intentionally use narrative to create empathy for a marginalized student. By empathizing with and defending the student perspective, we do not blame the problems described solely on faculty; we also ask readers not solely blame them on the student, or the university, the advisors, etc. Issues of marginalization are persistent, complex, systemic, and emergent, and no singular entity, however well- or ill-intentioned, can be the sole cause of them. Considering that all individuals in engineering classrooms have limited and relative amounts of knowledge, agency, and control over their circumstances, we ask readers to consider how the findings open opportunities to integrate or expand inclusivity within the classroom.

Findings

In the following sections, we present and analyze stories regarding Alice’s inclusion within engineering culture. Each story incorporates intersecting aspects of Alice’s identity with experiences and interactions in engineering education culture. We begin by introducing Alice and explaining some of her most salient identities.

Participant Introduction

Alice is a Latina undergraduate engineering student from Venezuela; she was a senior in an engineering program during this study. Due to Venezuelan civil unrest during her childhood, Alice’s family had to move several times internationally across seven countries and four continents, meaning she “never quite got to call somewhere home.” Alice described that the resulting instability made it hard for her to make friends, which fostered her anxiety over being rejected and made her constantly fearful about the future. At the age of 18, she arrived in the US with an F-1 Visa to start her undergraduate education. In the beginning, she didn’t quite understand the US higher education system and culture and felt isolated living thousands of miles from her family. Distance from family also impacted her when she later experienced
significant medical and mental health setbacks, which required her to also navigate the US medical system without her family’s immediate support. Over time, she has made many adjustments to the US culture and education system and pushed herself to work harder to compensate for any disadvantages she possessed.

In the following three stories, we explore these intersecting aspects of identity and inclusion. We consider what is visible and invisible to an engineering faculty and what acts of inclusion or exclusion impact students. In Alice’s narrative, there were also mentions of other identities (e.g., gender) and experiences. Acknowledging these experiences as integral parts of herself, those were not discussed in this manuscript considering the purpose of our study.

Story 1: “Must be US citizen or permanent resident to apply”: Challenges of International Student Status

During her undergraduate studies in the US, Alice’s family was often under financial hardship, and she needed to find a job to help support herself. She shared how she had trouble finding financial support as an international student:

At that moment, my dad actually had lost his job. So my family were all living off his savings. And for international students, college is super expensive. So I was also feeling really guilty that he had to help me out financially. And I couldn’t do anything because with my visa I could only get a job on campus and I had applied everywhere. It took me a year and a half to find somewhere to work again. So that was always very stressful.

I was looking for scholarships as well. I ended up hating that sentence “must be an American citizen or permanent resident.” Like that sentence would give me anxiety. It was horrible because I was like, Okay, I can apply, my GPA is good. I’m good. But, every single time, that phrase would haunt me. That was always very stressful. My dad would always remind me to keep applying, but it’s hard to apply when you can’t find one you’re allowed to apply for. So it was just so incredibly frustrating to see that Americans have it so easy with scholarships and I could be weeks looking for one and find none. There were times where I would see a scholarship or internship pop up and I was like, I’m just gonna delete it, I’m not even gonna bother cause I know I’m gonna get sad. I know that sentence is gonna be there.

When pursuing scholarships and jobs, the requirement “must be an American citizen or permanent resident” became a trigger for her anxiety and sadness. Having limited access to these opportunities made it harder for Alice to support herself. International students often go through extreme psychological distress due to financial pressures [46] - [47]. She experienced similar triggers from faculty who encouraged her to apply for these scholarships but were unaware of the award requirements that kept Alice from applying, as she described:

I remember very, very well a time that the professor asked everyone in the whole class if they had already applied to a university research fellowship program. And then he started talking about the program and how it’s such a great opportunity and asked how many of
us had applied—not a lot of people raised their hands. And he just kind of scolded us for not applying and I just raised my hand and told him, “it said it’s only for Americans.” I remember I wanted to apply and was trying to apply, but it said only for American residents or permanent citizens. I understood what the professor was trying to do. But to me, it just felt horrible. Cause you’re talking about this wonderful opportunity and not considering the fact that I really want to participate but can’t.

Another example of professors’ lack of awareness of the challenges international students faced came in the form of the extra credit exam question:

Even in courses, I had professors there, they would give extra credit, but it would be like American culture questions. And it was just saying, hey, this should be easy, I haven’t a clue. How am I supposed to know the answer to get that extra credit? I moved here a few years ago […] I know you’re trying to help us. But what you’re doing is you’re reminding me of my gap between me and my peers in terms of advantages.

In this story, Alice described how circumstances related to international status frequently go unrecognized in classroom settings. Seemingly innocuous classroom moments—advertising a scholarship opportunity and giving extra credit for a “US culture” question—highlight faculty’s default assumptions that everyone in their class has domestic employment status and knowledge. We can consider these moments in terms of intent, enactment, and impact: Alice acknowledges these were intended as positive acts from the professor’s standpoint. The enactment of these moments implies the professors’ lack of awareness of their international students’ existence or their particular circumstances. And we know from Alice that these moments have an outsized impact on her. Already sensitive to her financial access in the US, these moments are a painful reminder of “the gap” between her and her peers (i.e., because one does not meet the requirements of a scholarship, one is not good enough, or deserving of receiving said scholarship). Though the acts were well-intended, they also created moments of exclusion and feelings of being othered.

Story 2: ‘Why would I lie?’: Disclosing and Delegitimizing Mental Health Issues

Alice identified herself as a person who suffers from mental health issues, particularly anxiety and depression. These issues often intersected her classroom experience, and she shared an example of a course that requires a high degree of MATLAB programming competency. Though she had tried hard and received support from her peers, she felt she was not making any progress even after the fifth assignment and was ashamed to ask for additional help. The grades for the assignments were not available, making Alice stressed about her standing in the class. She started getting symptoms of anxiety:

My symptoms were getting worse. I was starting to not be able to sleep. I was starting to feel a racing heartbeat and loss of breath and all these panicked thoughts, and fatigue and I wasn’t able to finish until a week later, a week after it was due. And I was so stressed because I was like my grade is gonna suck if I don’t turn this in. So I finally had to reach
out to the professor and tell him, “Hey, I suffer from anxiety. And this was a really hard week for me to do this report. Could you still accept it?”

And it was just terrifying to me that I had to do this. It was terrifying to have to go up to the professor and explain the situation, and there was a point where he was just like, “You’re not lying, right?” And I just started tearing up because it was just like—

“Oh my god! Oh my god! Hi, like I’m making myself so vulnerable to you. I’m telling you something that [...]not even my parents know.” My point of view is, like how horrible of a person do you have to be to lie to your professor?

Alice’s vulnerability to telling her professor something only her close friends and family knew was rooted in her desire to advocate for herself and try to help make the course more accommodating to her needs. The professor’s subsequent response asking if she is lying immediately pains Alice. Alice considers the instructor’s perspective and intent that could underlie his question:

I absolutely understand his questions. It’s valid. Like I know, I know a lot of people don’t understand anxiety. My father is one of them. People don’t understand how debilitating it is. If you don’t experience it, you really can’t understand it. But it’s just like, “Why would I lie, that’s such a horrible thing? I’m a human being; I can have faults. I can have issues too.

Like Alice, we can acknowledge that the professor is constrained within the university context and likely has prior experience with student academic dishonesty that raises his concerns at that moment. We recognize he intends to be flexible and inclusive towards Alice and probably assumes that his comment is his own due diligence in trying to conduct fair academic assessments. Yet, the instructor’s enactment seems not to consider the perspective of a student’s extremely personal disclosure or how it would feel to be accused of lying about it. Once again, the outsized impact on Alice’s experience was to feel a violation of trust that impacted her view of faculty. Prior literature has listed students’ hesitancy and discomfort from sharing experiences with instructors [10]-[11]. One of the probable reasons behind this discomfort and reluctance could be, as Lewis et al. pointed out, that they “fear that they will not be believed or that action will not be taken” [10, p. 496].

Within the inclusion of certain hidden identities, there is sometimes a pressure placed on students to disclose their identities— to be “out” in terms of a significant but private aspect of self. In this example, we can see that being “out” is a position of great vulnerability, a specific choice a student may make to advocate for themselves, and a fragile state that instructors can unintentionally harm. We shift emphasis to place more responsibility on professors— to create a welcoming and inclusive atmosphere and interaction where students can feel free to identify themselves if they choose to and feel supported in their disclosure when they do. This shift may require professors to imagine the student’s perspective disclosing more than their own perspective of a teacher tasked with maintaining academic fairness. To facilitate and promote an inclusive atmosphere, faculty can also start with a small but impactful step- the act of actively listening and thus validating students’ experience with an open mind [10].
When we asked Alice to describe engineering educational culture in general, she described the classroom as having limited “robot-like” or impersonal interactions between students and faculty. On the contrary, when asked to identify an aspect of the engineering college that was inclusive, Alice drew a blank for a moment, then placed the students in extra-curricular student organizations as a bright spot for inclusion. The engineering classroom itself and her interactions with professors were never associated with inclusion or with bringing and being her entire self. She reflected on why professors interact with students the way they do:

I really think it’s just, they get caught up on themselves and their research. They, in a sense, they’re very workaholic. And it’s easy to forget that you’re not just regurgitating information to these kids. You are impacting them. You are affecting them and they may be going through issues. Some people enter college so young that they still don’t know who they are. Like they’re still maturing, they’re still growing […] Not everyone’s gonna be mature and have their stuff together. If you’re not understanding everyone has their own pace, everyone has their own life outside of all of this, then you’re partially failing as a professor. Cause the professor shouldn’t just give you information, the Internet can do that, a book can do that. But you need the human aspect of a professor.

Alice finds professors are focused on “themselves and their research” instead of “the human aspect” of a professor. We could see the “human aspect” as encompassing human understanding and empathy for students as people with a wider life than their role as students. This appreciation for students’ wider lives could be seen as an in-depth and holistic attitude of inclusion.

Alice recalled a specific moment when her own wider personal life seriously impacted her engineering studies when in one Easter break, she had a major panic attack. That semester was hard for her both academically and personally, and she was diagnosed with tachycardia, a condition that makes the heart beat much faster than usual. Shortly before the break, she hit her head and was knocked unconscious but did not go to the hospital first. She thought she would be told to rest, and she needed to finish her engineering course work instead. On Easter morning, her symptoms worsened, and she was rushed to the ER.

And I was like 10 hours in the ER, between CT scans, EKGs, medication, IV flowing into me because I was dehydrated. At the end of the night, the doctor was just like, “You know, everything looks good. And if I may say so, I think you may have just had a panic attack.” And I was so mad-- I was frustrated and thinking, “I just lost all this time when I could have been doing my project” the whole time in the ER I just kept thinking: “My project”, “My project”, “My project.”

And as soon as I got home, I emailed my professor. I submitted, or I had to at that point, ‘cause it was a group project and he never got back to me about an extension. He actually
never responded to that email. So in the next class, I had to show him like all my medical stuff, and they had the hour and the date and I was like, this is where I was that day, can I have an extra day to improve the project submission because of the time I lost on the project. He didn’t allow an extension. So that was horrible.

Looking back at it, I should never have to worry about school more than my own health. When I fainted that Tuesday morning, I should have gone to the hospital. I shouldn’t have had to worry more about my classes. But I did, because I didn’t think my professors would understand. I didn't think my professors would be flexible enough that if I had something due soon, they would extend it for me. And I was right [...] So it’s things like that where it just happens, why is it so hard to understand that everyone is human, things can happen? They think you’re a student first and then you’re a person. So school above anything else. And that’s how I acted during that week of fainting and having a panic attack. All I could worry about was school, but that’s not right.

So it’s just like we’re all individuals, we all struggle. Why are you so flexible when it comes to a job interview or a conference, but when I feel like I’m dying on the inside, you’re not willing to extend a homework or a project? You’re not willing to Okay an absence. Why does school have to be above all, school above everything or school above your health, above disasters, above your life? Why am I nothing but a student?

At the beginning of Alice’s recounting of this episode, she is already so focused on her project that she delays going to the hospital and stresses about her project while in the ER. Alice is embodying a “school above anything else” mentality, reaching out to her professor via email and submitting her group project as soon as possible. Alice’s professor does not respond quickly and ultimately does not create an extension or exception for her medical emergency.

In this story, we can imagine other competing responsibilities, and course logistics likely constrained the professor. He probably did not intend to communicate a disregard for Alice’s health and livelihood. His enactment nevertheless shows a lack of care and concern for students’ well-being. And its impact is once again outsized beyond what the professor would likely predict: the event was deeply painful. It cemented Alice’s impression that faculty care more about school than students’ health and lives. Her wondering, “Why am I nothing but a student?” echoes a central premise of this paper-- that including students requires an understanding of students’ complex identities and broader selves. Instead, due to this professor’s reaction, Alice’s impression of an unfeeling and impersonal faculty and institutional culture was reinforced, which ultimately makes sharing her identity and advocating for help all the more difficult.

**Discussion and Implications**

Alice’s stories highlight significant ways her identities and personal background influence her experiences as an undergraduate engineering student in the US. Here, we expand on Alice’s experiences by discussing three underlying themes and their implications for the broader discussions of inclusion in engineering education. In this way, we draw on Alice’s perspective to comment on how educators conceptualize, engage, and promote inclusive academic spaces for all students.
Narrowed and Hidden Student Identities

Alice’s identities intersect with each other in significant ways. Scholarly and colloquial conversations about inclusion often focus on a single identity (e.g., woman, Latinx) while bracketing any other identities a student holds. To better understand and intentionally include Alice, a simple categorization of her as international or as someone suffering from mental health strains does not accurately account for the complex, interrelated positionality she experiences in engineering education settings. In engineering, and especially in the classroom, faculty encounter students through a narrow lens that can hide or spotlight particular identities while stereotyping or simplifying more nuanced experiences. Considering the compelling aspect of inclusion that promotes acceptance of people with all their uniqueness [18], we argue engineering cultures that do not allow students to bring their whole selves are fundamentally at odds with the idea of creating an inclusive environment.

A student's well-being depends on a wide range of experiences, including many beyond the bounds of the classroom, such as career prospects, living conditions, financial stability, academic preparation, social connections, and mentor relationships. Alice's story conveys a broad and complex story that intersects her experience in engineering. At all times, she carries with her the baggage of messages from her childhood, previous traumatic health experiences, and her life history as a Venezuelan refugee, and thus she brings them into the engineering classroom with her. Though we are limited in our knowledge of the faculty perspective, we have a sense that this range of significant experiences is hidden, misunderstood, and made narrower in engineering classrooms and in interactions with engineering professors. Unless she has trusted a professor enough to share her story as a Venezuelan refugee, this aspect is likely invisible within an engineering setting. Her vulnerability and self-advocacy around her mental health challenges are narrowed to a student who may be “lying” to game the system. The culture of engineering and the limitations of classroom interactions (at times, “robot-like”) seem to position students as being unidimensional when they are not.

Intent versus Enactment versus Impact

In the stories that include interactions with faculty members, we can imagine a gap between intent and impact. Each faculty action is plausible; perhaps a faculty member is busy and misses an email sent over the Easter holiday, feels the need to balance fairness for other students rather than an exception for one, wants to double-check whether a student is being honest, or thinks that scholarship and extra credit opportunities are innocuous and should be available to all. Regardless of intent and regardless of any additional constraining factors for faculty members, we can look at the enactment of these moments as disregarding student perspectives or lacking sensitivity toward student circumstances. These small acts by a professor have an outsized impact on minoritized and marginalized individuals who are already sensitive and othered by society and educational culture; in each instance, we witnessed a painful impact on Alice. While we do not anticipate that faculty members can avoid every harmful impact, we note that once a harmful impact has occurred, the damage has been done. Due to this damage, a student like Alice
becomes less likely to share about that impact, her identities, her needs, or her experiences in the future to that faculty member and perhaps to all associated faculty members.

Inclusive Communication and Perspective-Taking

These stories can serve as sources of inspiration and imagination for faculty, hoping to avoid harmful impact and create inclusive environments for all of their students. In this study, we investigated inclusion by trying to deeply understand students’ most salient identities and how they came to be, to probe how those identities impacted engineering educational settings, and to empower student voices to speak back through a narrative methodology. Likewise, faculty could take an interest in deeply understanding their own students in order to create inclusive environments specific to student identities. Understandably, having an almost one-to-one inclusive relationship with every student in higher education might be difficult for faculty. Nevertheless, similar to this research effort, faculty could demonstrate their intent to learn empathetically about their students and open communication channels for this to happen by providing a few simple statements about a desire to get to know students through office hours or designing class activities to elicit student identities and experiences. Or perhaps faculty inclusion could take the form of reflective perspective-taking with students. In situations like this, simple questions such as “who are my students, what do I know and not know about them, how might they react to my actions” could guide faculty towards their intuition for where to create positive, inclusive impact and where to have caution around marginalizing harm.

Conclusion

One thing I would say to my professors is, please don’t forget we are human. That means think about how we might not be feeling well any day; we might be feeling overwhelmed, might be feeling kind of stressed. And we don’t always need a professor, we need another human being. … Remember we are human, we’re people, we’re individuals and one way or another, you are someone we look up to. You are a professor, and it would be nice to not be treated like just another face in the crowd.

~Alice

Although we represented only one student’s story of identity and inclusion within engineering education, we think it offers lessons for engineering faculty and for those who wish to transform engineering culture to support diversity, equity, and inclusion. We suggest that inclusivity is a dimension of classroom interactions that professors have a responsibility to co-create with students. Being proactive about inclusivity involves 1) making your solidarity with students and intention for inclusion clear, 2) enacting communication practices that create safety for student vulnerability, 3) imagining the impact and perspective of students (especially hidden and minoritized identities), and 4) responding with empathy and sensitivity in the moment of vulnerable disclosures. In other words, “Including Alice,” and students like her requires remembering and valuing their humanity. In closing, we emphasize Alice’s final call to professors for a more holistic view of their students: “please don’t forget we’re human.”
References


