

BOARD # 362: EEC CAREER: Challenging the Narrative of 'Servingness': Assessment of Restrictive Policies and Barriers for Latino/a/x Engineering Students at Hispanic Serving Institutions

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Introduction

Hispanic Serving Institutions (HSIs) occupy a crucial space in higher education, particularly in regions like the U.S. Southwest, where Latino/a/x communities represent a significant portion of the population [1, 2]. These institutions serve marginalized populations that seek to create pathways for historically underrepresented groups in higher education, offering not just access, but the promise of success and empowerment through a supportive academic environment [3, 4]. The term "servingness" suggests an institutional commitment to nurturing these communities by fostering an inclusive, culturally responsive curriculum and addressing the unique challenges faced by Latino/a/x students [4]. However, despite the intended goal of "serving" of HSIs, the lived reality of many students, especially those pursuing historically exclusive fields like engineering, can be far from ideal. While HSIs are a vital resource in increasing Latino/a/x representation in higher education, the promise of servingness is often compromised by the same systemic inequalities that exist across U.S. higher education more broadly [5].

This EEC CAREER research project, now in its fourth year, seeks to critically examine these dynamics by focusing on the experiences of Latino/a/x engineering students at HSIs in the U.S. Southwest region. This region, with its rich Latino/a/x history of both resilience and resistance [6, 7], serves as a particularly relevant context for understanding both the opportunities and challenges of HSIs in serving their primary demographic. By examining how restrictive institutional policies, such as rigid curriculum structures, low faculty diversity, microaggressive behaviors, and lack of mentorship, impede students' academic success, this study aims to uncover how these factors intersect with the broader social and economic forces shaping their educational trajectories.

Guided by Chicana Feminist Epistemologies, the study utilizes qualitative research methods, such as *pláticas* [8, 9] and *testimonios* [10-12], to center the voices of Latino/a/x engineering students. These methodologies are particularly well-suited to revealing the complex, often hidden, ways in which students navigate their educational environments. Through *pláticas* and *testimonios*, students are given the space to share their lived experiences, challenges, and triumphs in their own words, offering a richer, more nuanced understanding of their academic journeys. These narratives reveal not only the structural challenges they face but also their resilience, agency, and strategies for survival in an environment that often fails to fully support them. At the same time, *pláticas* and *testimonios* become the tool by which historical and sociocultural contexts can be better understood to uncover how deficit ideologies [13, 14] about Latinos/as/xs in engineering form and shape who belongs in engineering.

Ultimately, the research aims to contribute to a broader understanding of how HSIs can better live up to their promise of "servingness" and become sites of transformative change, particularly in fields like engineering where Latino/a/x students remain significantly underrepresented. The insights from this study are intended to inform both policy and practice at HSIs, and engineering programs to continue to recruit Latino/a/x engineering students without critically (re)framing success for these students, encouraging a more intentional and systemic

commitment to removing the barriers that still persist for students from marginalized communities.

Chicana Feminist Epistemologies as a Framework

Chicana Feminist Epistemologies offer a lens through which to analyze the experiences of marginalized groups [15]. This framework emphasizes *conocimiento*—a process of developing critical awareness and knowledge from lived experiences—as a key element in understanding how Latino/a/x students navigate their educational journeys [16]. By centering the voices and experiences of these students, the framework challenges deficit-based narratives and underscores the importance of culturally grounded approaches in educational research.

Rooted in Chicana feminism, this framework not only critiques traditional epistemological models but also offers a decolonial approach to knowledge production that centers the lived experiences and wisdom of those most impacted by systemic oppression [15, 17]. It insists that knowledge is not just a product of formal institutions but is deeply embedded in the everyday lives, struggles, and triumphs of individuals and communities [18, 19]. At the core of Chicana Feminist Epistemologies is the concept of *conocimiento*, a process that goes beyond mere intellectual understanding [20]. *Conocimiento* is a form of knowing that emerges through the collective wisdom of lived experiences, intergenerational storytelling, and the nurturing of critical consciousness [21]. For Latino/a/x students, this process of *conocimiento* allows them to engage with their educational journeys not merely as passive recipients of knowledge, but as active agents who can critically reflect on and challenge the dominant narratives and structures that shape their experiences. This approach validates their cultural ways of knowing and learning, which may differ from the Eurocentric, standardized methods often privileged in traditional educational settings.

By highlighting *conocimiento*, Chicana Feminist Epistemologies emphasize the importance of fostering critical awareness that emerges from the intersections of race, class, gender, and culture [19]. This critical consciousness allows students to interrogate the systemic inequities they face within educational systems and empowers them to resist and challenge those structures. It also shifts the focus from deficit-based narratives, which often portray Latino/a/x students as lacking or needing to be "fixed," to a more strengths-based perspective that recognizes their resilience, cultural wealth, and capacity for transformative action [22].

Findings and Discussion

The data collected through this project has revealed several systemic barriers that hinder the success of Latino/a/x engineering students at HSIs. These include limited access to financial support, inflexible academic pathways, and inadequate mentorship. Such policies and practices often perpetuate inequities, creating a disconnect between the institutional mission of servingness and the lived realities of students. The findings from this study also indicate that Latino/a/x engineering students face challenges related to the continued perpetuation of deficit-based and racialized narratives. Despite HSIs' stated *intended* mission to serve Latino/a/x communities, the structural and institutional realities often reflect a persistent bias that reinforces these narratives. It is important to note that these narratives are the result of historical tropes used to marginalize Latino communities in the U.S. Southwest [7, 23, 24], demonstrating that they have not been eliminated. All of the participants (22 participants that have been followed longitudinally for the past 4 years) in this study reported feeling marginalized within their engineering programs, where they were frequently viewed through the lens of academic "deficits" communicated to

them through verbal and non-verbal microaggressions [5]. These students often faced subtle yet pervasive stereotypes, including assumptions about their academic abilities, work ethic, and commitment to completing their degrees. This racialized lens not only undermines students' confidence but also contributes to a sense of alienation and exclusion within their academic environments.

Additionally, the data has indicated a critical lack of awareness surrounding the diverse circumstances of students at HSIs, particularly in relation to their non-traditional student status. Many Latino/a/x students at HSIs juggle multiple responsibilities—such as work, family obligations, and caregiving roles—while pursuing their engineering degrees. These responsibilities often go unrecognized by faculty and administration, who maintain traditional academic structures that do not account for the realities of students' lives. As a result, many participants in the study faced significant struggles to maintain a balance between their academic commitments and external obligations. The rigid scheduling of courses and lack of flexibility in engineering academic pathways further exacerbated these challenges, making it more difficult for them to remain in and succeed within their engineering programs. One of the main consequences for participants was that the majority either failed, dropped, or withdrew from at least one course during their engineering journeys.

Another key finding from this study was the lack of flexible pathways in engineering programs at HSIs, which significantly impeded students' academic progression. Many participants expressed frustration with the absence of policies that would accommodate their needs, such as part-time enrollment options, evening classes, or asynchronous learning opportunities. The rigid curricular structure in engineering, which typically requires full-time, consecutive coursework, often presents insurmountable barriers for students who need to work or care for family members. This lack of flexibility creates an educational environment where students are forced to make difficult choices between continuing their education and meeting their personal and financial needs. The consequences of this are clear: students are more likely to leave their programs, delay graduation, or abandon their engineering pathways altogether, further contributing to the underrepresentation of Latino/a/x students in the field.

Implications

The findings from this study highlight that, despite the mission of HSIs to serve Latino/a/x students, the promise of "servingness" remains elusive, especially in fields like engineering. While HSIs are designated to provide access to higher education for Latino/a/x populations, they often fail to adequately address the unique needs of these students, particularly in disciplines like engineering. The persistence of deficit-based and racialized narratives continues to shape the educational experiences of these students, reinforcing a cycle of disadvantage rather than creating an environment of empowerment and support.

Furthermore, the lack of flexibility in engineering programs at HSIs poses a significant barrier to student success, especially for non-traditional students who face multiple competing responsibilities. Without policies that account for the varied life circumstances of these students, HSIs are not fulfilling their potential as institutions that serve their diverse populations. As a result, the engineering programs at these institutions are not fostering the kinds of supportive, inclusive, and adaptive learning environments that would allow Latino/a/x students to thrive and persist in the field.

The implications of these findings are clear: if HSIs are to live up to their promise of "servingness," particularly in engineering, significant changes are needed. Institutions must

begin to move beyond traditional, deficit-based approaches and adopt more inclusive, flexible, and culturally responsive practices. This includes reevaluating curriculum structures, offering alternative pathways for students, and providing the necessary support systems that acknowledge and respond to the specific challenges faced by Latino/a/x students, especially those who are non-traditional.

Conclusion

This research contributes to the broader discourse on equitable access to engineering by highlighting the importance of critically analyzing and challenging the discourse of “servingness” while keeping institutions accountable. By centering the voices of Latino/a/x engineering students, the study challenges traditional paradigms and emphasizes approaches to engineering education research that move toward the promise of serving students. The findings underscore the need for systemic change to create more equitable and inclusive learning environments that empower all students to thrive.

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