

Project MALES Faculty & Research Affiliates

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Despite the growing numbers of Hispanic students in Texas high schools, college access and retention remains a critical challenge (Krogstad, 2016). Although college enrollment for Hispanics has risen, with 35% of Hispanics 18 years and older enrolling in college (Krogstad, 2016), Hispanics continue to fall behind in obtaining a college degree. As of 2014, only 15% of Hispanics 25 years or older had a bachelor's degree, as compared to 41% of Whites and 63% of Asians (Krogstad, 2016). This achievement gap is particularly evident in the underrepresentation of Latinx students enrolled in science, technology, engineering, and math (STEM) majors (Crisp & Nora, 2012).

Latinx students have demonstrated a growing interest in engineering programs, but converting interest into science technology engineering and math (STEM) degrees continues to challenge educators (Crisp & Nora, 2012). Latinx students may not complete a STEM degree due to a lack of academic preparation, familial responsibilities, or lack of cultural congruity with their major (Cole & Espinoza, 2008; Crisp & Nora, 2012). Flores (2011) also identifies structural factors, such as financial obstacles, prejudice and discrimination, or lack of mentorship as key obstacles to STEM fields. Addressing challenges associated with Latinx student access and persistence in engineering is critical as the population continues to rise. College readiness efforts, such as dual credit programs, can help address the achievement gap confronting Latinx students interested in engineering fields.

DUAL CREDIT

Dual credit programs afford high school students the opportunity to earn college credits while still in high school (THECB, 2008). By enrolling in dual credit courses, students are exposed to college-level coursework and expectations. Depending on the program's structure, students may take courses with college faculty and in college settings (Tobolowsky

& Allen, 2016). The intention of these courses is to socialize students to college rigor and expectations in order to promote smooth college transitions and success. However, the great variability in course delivery, locations, and instruction has led some scholars, educational leaders, and policymakers to question the overall quality of dual credit courses (Tobolowsky & Allen, 2016).

Despite the proliferation of these programs, little research exists on the students' experiences in dual credit courses or, more specifically, how they access these courses and how the courses influence students' experiences in high-demand programs, such as engineering. Therefore, the purpose of this qualitative, phenomenological study was to examine how students learn about dual credit opportunities, what motivates them to pursue dual credit, and how earning dual credits influences their college transitions to engineering.

Supported by funding from the Greater Texas Foundation, this study is part of a three-year longitudinal, qualitative research project that examines the academic and social experiences of Latinx engineering students who enrolled in an HSI with dual credits. Yosso's Community Cultural Wealth Model (2005) was employed as a strengths-based approach to help guide this study. Through interviews, observations and field notes, and analytic memos, the following research questions were explored: 1) How do Latinx students learn about dual credit? 2) Why do students pursue dual credit courses?, and 3) How does participation in dual credit inform students' first year in an engineering program? Key findings are summarized below.

THE SPIEL: CONVEYING THE MESSAGE

High school teachers, counselors, and college advisors served as key conduits of information for students, with classmates serving as an additional source of information. Some students began hearing about dual credit when they were in middle school, while most found out in high school. The information most commonly came in the format of class assemblies in auditoriums, announcements over the intercom system, or from high school counselors visiting classrooms. Students did not recall direct communication between their schools and parents. As a result, it behooved the students to relay information to their parents. Instead of hashing out the decision with their parents, students often enrolled based on the benefits promoted by educational leaders.

THE HOPE: CREATING DREAMS FOR COLLEGE AND BEYOND

School leaders represented dual credit as a strategy to save time and money in college, which was a key motivator for students' enrollment. Students were attracted to "finishing the first two years of college for free," and "getting advanced and getting a college degree." School leaders presented students with the logic that the sooner they started their college work, the sooner they would finish. Students believed dual credit enrollment was the key to saving time and money and opening up a bigger variety of career options and opportunities than the ones their parents had been afforded. This represented an important finding of the study, as many of the participants were first-generation college students.

THE REALITY: USING DUAL CREDIT TO BUFFER AND MANAGE ENGINEERING

In spite of the message and hope students had prior to enrolling in dual credit, for these engineering students, dual credit did not save them time off their degree plan, although it did enable course flexibility. For instance, one student shared that dual credit provided "a safety net and peace of mind in case anything happened, if I need to take, like, more classes or something, like a job



even." Additionally, dual credit did not reflect the academic rigor of the university classes. One student disclosed that he had to "relearn" calculus one material on his own while he was enrolled in calculus two because the calculus one material he learned as a dual credit course was less rigorous and out of sync with what was being taught in calculus two at the university. Although dual credit posed issues for sequential courses in the STEM disciplines, students reported that dual credit did introduce them to the college environment and "the expectations of a lecture-based class."

CONCLUSION

The lack of parental engagement with dual credit is a lost opportunity as Yosso (2005) suggests that aspirational and familial capital can be powerful resources in supporting students into and through their higher educational experiences. Therefore, we suggest high schools mail letters to students' parents, send dual credit information via email

or text, or host informational meetings about dual credit at local businesses or community centers. Schools can also collaborate with major industries in the area to offer dual credit sessions during office hours. Future research can explore relationships between K-16 institutions and community stakeholders to explore avenues for collectively organizing a college-going culture. As the Latinx population continues to grow in the U.S., it is important to understand how Latinx students gain knowledge of and access to college readiness opportunities, such as dual credit, in order to promote a college-going culture within schools, communities, and families to cultivate a more educated and equitable society.

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