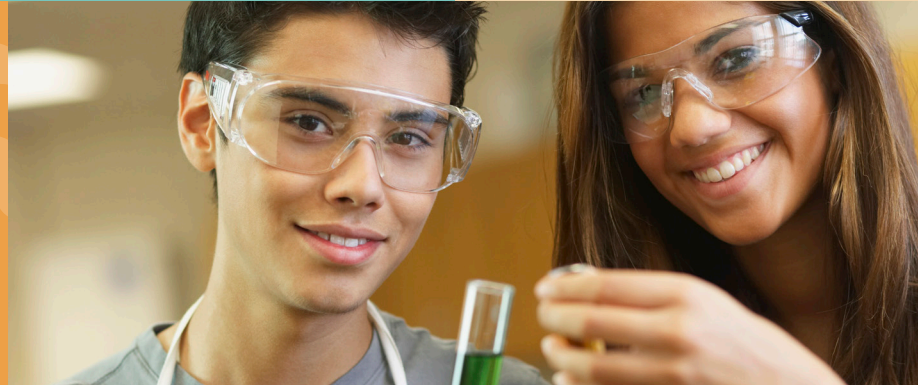


What Predicts Postsecondary Success in Science, Technology, Engineering, and Math for Hispanic Students?



Exploring the Foundations of the Future STEM Workforce: K–12 Indicators of Postsecondary STEM Success

A review of the research literature



Despite being the nation's largest racial/ethnic minority, Hispanics are underrepresented in the fields of science, technology, engineering, and mathematics (STEM)—both in college and the workplace. Given STEM's growing importance to the U.S. economy, a critical need exists to increase the number of Hispanics earning STEM degrees and entering the STEM workforce.

The Regional Educational Laboratory (REL) Southwest is conducting a series of studies to identify K–12 factors that predict whether Hispanic students in Texas will pursue and earn STEM degrees. The goal is to help improve Hispanic students' success in STEM across the education pipeline as well as to inform future research on barriers to that success.

As a first step, REL Southwest reviewed the research to identify factors that predict K–12 students' postsecondary STEM success, particularly for Hispanic students. Success was defined as pursuing and earning STEM majors or degrees. The review found 23 relevant studies, 4 of which focused on Hispanic students.

Key Findings

High school STEM coursework and interest or confidence in math and science are strong indicators of postsecondary STEM success for students of all racial/ethnic backgrounds.

- Taking high-level math and science courses in high school is a strong and consistent predictor of pursuing and earning a STEM degree.
 - » However, Hispanic students are less likely than White students to take higher level math and science courses in high school.
 - » The number of high school math and science courses students take and the grades they earn are more predictive of postsecondary STEM success for White students than for Hispanic students.

[Read the full report online](#)

Showing an early interest in math and science and taking high-level STEM courses in high school are strong predictors of pursuing and earning a STEM degree.

- Showing an interest and confidence in math and science, as early as in middle school, is a strong predictor that students will pursue a STEM degree.
 - » However, even when levels of interest and confidence in math and science are similar, Hispanic and female students pursue and earn STEM degrees at lower rates than White and male students, respectively.
- Few research studies have examined K–12 indicators of postsecondary STEM success specifically for racial/ethnic minority or Hispanic students. More research is needed.
 - » To build on these findings, REL Southwest is [conducting a study](#) to identify indicators of postsecondary STEM success for Hispanic and non-Hispanic students in Texas.

Possible Implications

These findings are correlational and do not imply that any one factor causes or leads to any specific outcome. At the same time, the findings may suggest some possible considerations for research, policy, and practice:

- **Increase enrollment in high-level STEM courses:** Increasing the academic level, rather than the number, of the high school math and science courses Hispanic students take may be more effective in reducing STEM disparities, particularly at the college level.
- **Turn interest in STEM into STEM majors:** Explore not only ways to develop students' early interest in STEM but also ways to sustain that interest, especially for female and Hispanic students, who major in STEM fields at lower rates despite similar levels of interest.
- **Focus research on Hispanic students' STEM success:** Only four of the studies reviewed allowed for comparisons between Hispanic and non-Hispanic students. More research is needed that looks at K–12 indicators of postsecondary STEM success for Hispanics and other underrepresented groups in the STEM workforce.

Questions to Consider

- Why are Hispanic students less likely than White students to take higher level math and science courses in high school?
- Are Hispanic students prepared to succeed in advanced math and science courses in high school? How are teachers preparing Hispanic students for these courses?
- What else do we need to know about Hispanic students' participation in higher level math and science courses? For example, are a sufficient number and variety of advanced math and science courses offered in high schools with predominately Hispanic populations?
- How can we leverage Hispanic students' interest and confidence in math and science to increase the number of students earning STEM degrees?
- Is the negative gender selection in STEM college courses and degrees stronger among Hispanic than non-Hispanic students?
- What types of support should Hispanic parents provide children who show an interest in math and science or who want to pursue a STEM career? What does this support look like? Should this support differ for girls and boys? What role does Hispanic culture play?