

2023 Insight Survey Executive Summary

NCSSS (National Consortium of Secondary STEM Schools) is an organization representing schools and programs in the U.S. and around the globe dedicated to transformational STEM education. The aim of the survey is to provide high school members with comparative data to share with their own boards and other external or internal constituencies.

Methods

NCSSS Institutional Member Schools were invited to participate in the 2023 Insight Survey. Submissions were completed by the Head of School or equivalent in the fall of 2023. There were 42 school respondents, with 34 replicates from the 2022 Insight Survey.

Representation in STEM Classes

NCSSS is dedicated to promoting diversity within NCSSS schools as well as seeing that diversity represented throughout offered courses. Enrollment in challenging and competitive STEM classes can be an advantage in the college admissions process, and connections have been found between the highest level of math completed by the end of high school and education attainment.

- The representation of different races/ethnicities among faculty or students did not significantly change among replicate schools in one year, from the 2022 to the 2023 Insight Survey, but will continue to be monitored over a longer time frame to detect shifts in these populations.
- Students enrolled in the highest math class at responding schools accurately reflect the students in those schools in the areas of race/ethnicity, gender, and socioeconomic status (SES) in all but a few categories:
 - Increased representation of Asian/Pacific Islander students (15% in the school vs 22% in class)
 - Decreased representation of Hispanics/Latino students (14% vs 11%)
 - Decreased representation of non-binary students (2% vs 0.3%)
- **Students enrolled in two math or two science classes at their school reflect the students in those schools across race/ethnicity, gender, and SES.**

School Resources & Offerings

STEM schools often offer students many resources to get ahead since STEM fields are among the most competitive and academically challenging. These resources may be programmatic, structural, academic, or curricular in nature, but are ultimately instituted to help students succeed.

- NCSSS member schools offer exceptional and creative classes within STEM fields in addition to offering a wide breadth and depth of offerings in the humanities.
- 73% of schools report that faculty are incentivized to mentor student extracurriculars through a stipend-based system, while voluntary mentoring occurs in 53% of schools, and participation is required in 14% of schools with some schools utilizing a combination of methods.

- **Close to 100% of schools** offer AP/IB, dual-enrollment, or college classes within the school. Many offer more than one of these options.
- Almost 90% of schools offer either teacher mentors, peer-to-peer mentors, or both.
- Almost 90% of schools offer in-person tutoring, virtual tutoring, or both.
- **70% of schools incorporate internships, 55% flipped classrooms, and 30% either AR, VR, or gamification within their school curriculum.**
- Over 50% of responding schools report that they have a maker space. In addition to fabrication labs (28%), creative commons (26%), and digital arts labs (36%), schools also listed specialty science labs, collaboration spaces, and a CyberRange.

Outcome

In the 2022 Insight Survey, NCSST schools reported a requirement of more science and math courses, a minimum requirement for computer science and engineering courses, and averaged significantly higher ACT and SAT scores than schools nationally. Knowing how these differentiating factors impact student outcome can help schools assess their methods.

- Class of 2023 graduates from NCSST responding schools were significantly more likely to declare a **math major** than students nationally. *
- These students also trended toward higher representation in declaring a major in technology or engineering fields compared to students nationally. *
- 37% of NCSST responding schools use the National Student Clearing House to track their students after graduation. Another 21% of schools utilize in-house methods to follow their graduates – such as surveys, self-reporting, and dedicated staff.
- Of schools that track alumni closely, 98% report that students are attending college or university after graduation.

Faculty Recruitment & Retention

Schools across the country are facing rapid turnover of teachers and staff. In the current environment, NCSST schools are using a variety of methods to recruit and retain their talented teams.

- The composition of the student body, both class size and makeup, is the highest ranked factor for both **recruitment** and **retention** of faculty and staff.
- For recruitment, the specialized mission of the school and compensation were the next highest ranked factors, respectively.
- 80% of respondents cite personal referrals as a successful strategy for recruitment; however, additional suggestions include promotion at teacher fairs, alumni recruitment, housing incentives, and regional advertising.
- For current faculty, **flexibility and autonomy** were ranked at #2 and #3 for retainment. Other listed factors included institutional culture, vision, respect, and leadership.
- NCSST responding schools largely use a salary schedule to determine compensation for their faculty (81%). Fewer schools are unionized (19%), base compensation on market value (19%) or performance (2.4%) although many unionized schools also use a salary schedule (75%).

Next Steps

Full survey findings can be found at ncsss.org. If you have questions or have suggestions for future surveys, please contact Crystal Miller (crystal.miller@ncsss.org).