EWIG: CS Evaluation Findings

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The state of California created the Educator Workforce Investment Grant in Computer Science (EWIG: CS) to build the capacity of teachers and administrators to deliver high-quality learning experiences. Grant funding supported a series of multiday workshops offered under the umbrella of Summer of CS, facilitated through a network of Computer Science Champions embedded in county offices of education, that sought to build educator knowledge and skills in computer science. Here, we summarize results from AIR's evaluation of the EWIG: CS program.

EWIG: CS External Evaluation

The American Institutes for Research® (AIR®) served as the evaluation partner for California's EWIG: CS investment from 2023 to 2026. This final overview summarizes findings from the full set of evaluation activities.

Educator Professional Learning Participation

Workshop registration and attendance data reveal the reach of Summer of CS learning opportunities.

Key Finding #1: Summer of CS served 1,394 educators from 2023 to 2025, many of whom had no prior experience with teaching computer science. The gender representation of these participants was similar to the overall California K–12 workforce.

Educator Experiences With Professional Learning

Surveys administered to Summer of CS workshop participants illuminate perspectives about their workshop experiences.

Key Finding #2: Survey respondents and focus group participants reported positive impressions about Summer of CS workshop content, format, quality, and usefulness. Positive features of the workshops included the use of high-quality instructional strategies, exposure to high-quality instructors, collaboration and networking with other teachers, and opportunities to receive ongoing support.

Key Finding #3: Survey responses revealed a positive and statistically significant change in participants' *confidence* in teaching computer science between the beginning of Summer of CS workshops in 2024 and their return to the classroom 1 year later. This growth in confidence persisted despite a small drop between the end of the workshop experience and the time of the follow-up survey.

Key Finding #4: Survey responses revealed a positive and statistically significant change in participants' *beliefs* about who can and should do well in computer science between the beginning of Summer of CS workshops in 2024 and their return to the classroom 1 year later. These changes were smaller in magnitude than those for educator confidence, but the preworkshop values were also higher, suggesting that educators who participated in Summer of CS workshops already had strong beliefs about the importance of computer science and the ability of all students to succeed. This growth in beliefs persisted despite a small drop from the end of the workshop experience to the time of the follow-up survey.

Development and Reach of CS Champions

A group of county office of education administrators across the state served as CS Champions, a role in which they coordinated all aspects of EWIG: CS–funded professional learning in computer science.

Key Finding #5: CS Champions articulated a shared understanding of their role and perceived their activities as pivotal to increasing teacher participation in computer science professional learning. Ninety percent of survey respondents strongly agreed or agreed that they understood their roles as CS Champions, and focus group participants' reflections aligned with the role definition articulated by members of the EWIG: CS planning team.

Key Finding #6: EWIG: CS succeeded in creating a community of computer science education advocates across California. Social network analyses revealed a robust community in which members were connected to multiple other CS Champions.

Shifts in Teacher Practice

Perspectives from Summer of CS participants immediately after their workshop experience are helpful for understanding workshop quality, but a more meaningful measure of success is the degree to which knowledge and skills translate to subsequent classroom behaviors.

Key Finding #7: Summer of CS workshop participants delivered computer science instruction when they returned to their classrooms. Eighty-six percent of Summer of CS participants from 2023 and 2024 taught computer science during the 2024–25 school year, and nearly two thirds reported that they taught computer science at least weekly. The average number of hours of instructional time for these participants ranged from 87 at the elementary level to 241 in high school.

Key Finding #8: The primary format of computer science instruction was the integration of content into another subject area; this was especially true in the elementary grades. Nearly two thirds of follow-up survey respondents reported teaching this way, including 72% of respondents teaching students in pre-K to Grade 5. Roughly one third of follow-up survey respondents reported teaching a standalone computer science class during the school day.

Changes in Student Access to Computer Science Education

The primary outcomes of interest for any investment in K–12 computer science education are student exposure and success. In the absence of statewide data on computer science course availability, case studies of six California districts enabled an exploration of trends in access and participation.

Key Finding #9: Case studies revealed a consistent decrease in computer science availability and enrollment that aligned with the COVID-19 pandemic and otherwise found inconsistent patterns of growth. Teacher knowledge, skills, and interest in teaching computer science played central roles in determining course availability, and computer science often confronted competing priorities for students' attention and space in the master schedule.

Key Finding #10: Integration of computer science into other subject areas was a key strategy for expanding access to more students. However, because these learning opportunities do not appear in California Longitudinal Pupil Achievement Data System course codes or course-count metrics, the quantitative patterns uncovered through this research understate the extent to which students gained exposure to computer science content.

Key Finding #11: Hispanic and Black students and women were underrepresented in computer science courses relative to their population in the district. Nevertheless, some districts employed strategies with demonstrated success in improving participation among these students.

Key Finding #12: Interview respondents described EWIG: CS as playing a vital role in building computer science capacity by exposing teachers to concepts, tools, and instructional materials. Workshops offered through Seasons of CS provided training that districts could not deliver independently because of budget constraints and limited internal expertise.

Areas for Continued Attention

Despite reports of quality experiences, increases in confidence and beliefs, and implementation of computer science content in classroom instruction, multiple data sources underscored the reality that educator professional learning by itself is not sufficient to expand computer science learning opportunities across the state in a sustainable way. Educators associated with the EWIG: CS efforts emphasized that continued funding, the ability to navigate competing priorities, a growing pool of educators who can deliver computer science learning, and the informed support of district and school administrators are critical for computer science education to build on the momentum sparked through this grant and gain traction for the road ahead. As EWIG: CS funding expires, members of the California computer science education community must find ways to build on progress and corral new sources of support if they wish to capitalize on the momentum established through this grant.

For More Information

To access the full set of publications produced through AIR's EWIG: CS evaluation, please visit https://www.air.org/project/evaluation-educator-workforce-investment-grant-computer-science.

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