Summer of CS 2024 Survey Findings

Educator Workforce Investment Grant in Computer Science External Evaluation

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Executive Summary

The Educator Workforce Investment Grant in Computer Science (EWIG: CS) supported a series of workshops in summer 2024, known collectively as "Summer of CS." Offered through 44 different opportunities across the state, these learning events sought to build the capacity of K–12 educators in California to deliver high-quality instruction in computer science. Results from registration data and pre- and post-workshop participant surveys point to the following key findings:

Key Finding #1: A total of 733 educators participated in a Summer of CS workshop in summer 2024, more than half of whom had no prior experience with teaching computer science. The gender and racial representation of these participants closely matched the overall California K–12 workforce.

Key Finding #2: Survey respondents reported very positive experiences with Summer of CS workshop quality. For example, 98% of respondents agreed or strongly agreed that the workshop made them feel included in a community of CS educators and advocates.

Key Finding #3: Survey responses reveal a positive and statistically significant change in confidence in teaching computer science between the beginning and the end of Summer of CS workshops. The largest change observed among survey items related to participant confidence was for teaching in alignment with California computer science standards.

Key Finding #4: Positive changes in confidence are more pronounced among survey respondents who identify as women, belong to underrepresented racial groups, and who have no prior experience with teaching computer science. These findings suggest that Summer of CS was especially effective for educators who have been traditionally underrepresented in computer science education.

Key Finding #5: Survey responses reveal a positive and statistically significant change in confidence to recruit and retain students in computer science; this change is of a greater magnitude when the survey items referred to all students than when the survey items referred to historically underrepresented students. We did not find statistically significant differences for these items based on respondent characteristics.

Key Finding #6: Survey responses reveal a positive and statistically significant change in beliefs about who can and should do well in computer science. These changes were smaller in magnitude than those for educator confidence, but the pre-workshop values were also higher, suggesting that educators who chose to participate in Summer of CS workshops already had strong beliefs about the importance of computer science and the ability of all students to succeed.

Taken together, these results provide encouraging evidence about the quality of the Summer of CS experience and its potential for improving the state of computer science education in California. We emphasize that this evidence is correlational; our study design does not enable us to make statements of causality with our conclusions. Moreover, self-reported data about participant confidence beliefs may or may not translate to actual changes in educator behavior, learning opportunities, and student experiences. A follow-up survey to be administered in fall 2025 will enable the research team to explore the degree to which workshop experiences are associated with subsequent classroom practices.

Introduction

Through the Educator Workforce Investment Grant in Computer Science (EWIG: CS), the state of California has funded a statewide effort designed to increase educator capacity to deliver computer science education with an equity focus. [1] This report shares preliminary findings about a key component of the EWIG investment, Summer of CS. [2] Summer of CS was a professional development series aimed at California educators interested in providing or expanding the computer science course offerings in school. Educators participated in week-long workshops held between June and August 2024 through regional offerings throughout the state, as well as an in-person event held in Anaheim known as CSPDWeek.

The American Institutes for Research® (AIR®) has partnered with the EWIG: CS lead agencies to serve as the external evaluator for the grant. To inform its evaluation approach, the AIR team organized a set of research questions around the four components of the CAPE framework, which highlights *capacity* to deliver, *access* to, *participation* in, and *experiences* with computer science education. [3] The CAPE framework directly addresses equity with each component and acknowledges the multiple layers of an educational approach required to equip students to thrive in computer science (Fletcher & Warner, 2021). Guided by this framework, the AIR evaluation seeks to address the research questions identified in Exhibit 1.

This report addresses Research Questions 1 and 2 by examining participant experiences with the 2024 Summer of CS workshops. It shares results of pre-workshop and post-workshop surveys administered to workshop participants as well as demographic and participation information collected from workshop registration data to provide insights about EWIG: CS efforts to improve computer science educator capacity.

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[1] The EWIG grant in computer science is one of multiple investments the state of California has developed to foster professional learning opportunities for educators. For more information about this program, see https://www.cde.ca.gov/ci/pl/ewig.asp.

[2] For more details about Summer of CS and the broader professional learning series to which it belongs, Seasons of CS, see https://www.seasonsofcs.org/.

[3] See https://ecepalliance.org/resources/models/cape/.

Exhibit 1. EWIG: CS Evaluation Research Questions

Research Question	CAPE Dimension
1. To what extent have EWIG professional learning activities reached and included their target audiences? – To what extent does the pool of participants reflect the California K–12 teaching force? – To what extent is participation in Seasons of CS orientation workshops associated with subsequent participation in other EWIG professional learning activities?	Capacity
2. How do EWIG workshop participants describe the quality of their professional learning experiences? – What changes in knowledge and skills to teach CS do EWIG workshop participants report after their professional learning experiences? – What changes in beliefs and confidence to teach CS do EWIG workshop participants report after their professional learning experiences?	Capacity
3. To what extent do CS Champions believe that the training and support they receive has adequately prepared them to carry out their work? What insights do CS Champions have about their role in equitably expanding CS education?	Capacity
4. What is the nature and frequency of interactions among CS Champions outside formal professional learning activities?	Capacity
5. To what extent have the numbers of discrete CS courses increased during the time period of the 2021 and 2023 EWIG grants?	Access
6. To what extent has participation in discrete CS courses increased during the time period of the 2021 and 2023 EWIG grants? To what extent has participation increased for historically underrepresented populations?	Participation
7. To what extent have teachers' instructional practices changed after participating in EWIG professional learning activities?	Experience

Methods

To produce this report, the AIR research team designed a survey in partnership with the EWIG: CS planning team, administered it to Summer of CS participants in summer 2024, and conducted analyses that explored perspectives on the workshop experience overall as well as changes in responses from the beginning to the end of each workshop.

Survey Design

AIR researchers created the survey protocols in consultation with members of the EWIG: CS planning team from the Sacramento County of Education (SCOE), San Bernardino County Superintendent of Schools, the University of California at Los Angeles, and the Californians Dedicated to Education Foundation. Most questions appeared in both a pre-workshop survey and a post-workshop survey. Survey items focused on key areas that EWIG: CS planning team members identified as important for the workshops, including participants' confidence in teaching computer science and their beliefs about what students can and should learn.

In addition, the post-workshop survey items asked respondents about the overall quality of their workshop experiences. Survey items asked respondents to provide responses to 5-point Likert scales ranging from Strongly Disagree to Strongly Agree. See Appendix A for a full list of survey items.

AIR's Institutional Review Board reviewed the survey and data collection procedures to ensure that the survey data collection met high standards for human subjects participation.

Survey Data Collection

AIR programmed and administered the pre- and post-workshop surveys using the online Verint Survey platform. Using workshop registration and contact information provided by SCOE, AIR sent an email to all participants on the first and last days of their workshop with an individualized survey link. To ensure that participant perspectives before and after their professional learning experiences aligned as closely as possible to the workshop experience itself, each workshop provider reserved a window at the beginning of the first day for attendees to complete the pre-workshop survey and a window at the end of the last day for attendees to complete the post-workshop survey. After the conclusion of each workshop, AIR sent a follow-up email to any nonrespondents requesting that they complete the survey.

Response Rates

Across all Summer of CS workshops, more than three quarters of attendees (77%) completed both surveys. In addition, 10% of attendees completed the pre-workshop survey only and 8%

completed the post-workshop survey only. Five percent of attendees did not complete either survey. See Appendix B for a more detailed analysis of survey response rates.

Survey Analysis

The AIR research team converted all Likert scale responses to numerical values ranging from 1 to 5, where *Strongly Disagree* = 1 and *Strongly Agree* = 5. By assigning each survey response a numerical value, we can then present the average change between the pre-workshop and post-workshop survey responses for each item. Analyses of change include only the respondents for whom we have both pre-workshop and post-workshop data; exhibits throughout the report include notes that list the number of respondents represented for each finding.

In addition, the research team conducted analyses to explore the relationship between respondent characteristics and the changes in self-reported confidence and beliefs. These analyses paid particular attention to aspects of participants' identities and professional history with computer science to explore the degree to which Summer of CS experiences might differ for respondents who have been historically underrepresented in the field. Using each measure of change as an outcome variable, analysts conducted multiple linear regression that included participant experience with teaching computer science, gender, and racial identity as independent variables. The team selected this model because the dependent variable was continuous, and we wished to explore the relationship of multiple predictor variables simultaneously with the change in responses between workshops. We assessed statistical significance at the $p < 0.05$ level. The text of this report highlights findings in which our regression models found the coefficients for any of these independent variables to be statistically significant. The research team conducted all survey analyses using the statistical software platform R.

Findings About Workshop Participation

The Summer of CS effort supported through the EWIG: CS grant featured 44 different workshops delivered over the course of 10 different weeks in a variety of locations in summer 2024. The flagship event among these offerings was CSPDWeek, a collection of 10 concurrent workshops conducted on July 22–26 in Anaheim, California. In addition, 34 regional offerings enabled educators from around the state to participate in professional learning about computer science. Workshops, which included anywhere from four to 44 participants, ranged from 3 to 5 days in length. All workshops offer opportunities for ongoing engagement between facilitators and participants through follow-up workshops during the 2024–25 academic year.

Exhibit 2. Gender and Race of Summer of CS Participants and All California FTE Teachers

Category	Summer of CS Participants	California FTE Teachers 2022–23
Woman	77%	73%
Man	20%	27%
African American	2%	5%
American Indian or Alaska Native	1%	1%
Asian/Filipino	12%	8%
Hispanic or Latino	23%	25%
Pacific Islander	0%	0%
White	45%	56%
Two or More Racial Identities	15%	1%
Racial Identity Not Reported	2%	5%

Note. Percentages may not add to 100% due to rounding. Three percent of Summer of CS participants listed "Non-Binary" or did not respond to a question about their gender identity. *Source for Summer of CS Participant Data:* SCOE registration records. *Source for California FTE Teachers Data:* Commission on Teacher Credentialing (2024).

A total of 733 educators participated in one of the Summer of CS workshops in summer 2024.[4] Exhibit 2 displays the gender and racial identity of these educators, including a comparison to the overall California K–12 teaching workforce. Workshop participants were more likely to be women, be Asian/Filipino, and have two or more racial identities than the statewide workforce.

[4] When originally released, this report listed the total number of participants as 736. This updated figure of 733 corrects a data quality issue in the registration data.

> **Key Finding #1**
> **A total of 733 educators participated in a Summer of CS workshop in summer 2024, more than half of whom had no prior experience with teaching computer science.**

Additional details about Summer of CS participants may also be instructive, even when comparable statewide data do not exist. Although the state's EWIG: CS investment recognizes the importance of fostering computer science learning opportunities at all grade levels, Summer of CS organizers specifically designed the workshops to target educators in Grades 9–12. Exhibit 3 demonstrates that nearly three in 10 educators identified themselves as being part of this target group. The exhibit also illustrates the range of prior experience with CS instruction among workshop attendees; more than half of Summer of CS participants reported no prior experience with teaching computer science.

Exhibit 3. Teaching Assignments and Experience for Summer of CS Participants

Category	Summer of CS Participants
Grade Level: 9–12	29%
Grade Level: 6–8	40%
Grade Level: TK–5	46%
Years teaching computer science: 0	51%
Years teaching computer science: 1–2	22%
Years teaching computer science: 3–5	14%
Years teaching computer science: 6–9	6%
Years teaching computer science: 10 or more	7%

Note. Percentages for grade level do not add to 100% because respondents can teach more than one grade level.

One important design feature of the EWIG: CS grant is a series of orientation workshops conducted throughout the 2023–24 school year designed to introduce educators to computer science content and spark their interest in learning more. Such workshops, if successful, could help to demystify the content area and decrease anxiety about engaging with computer science. They might also motivate educators to learn more about computer science through Summer of CS professional development offerings. Workshop enrollment data demonstrate that, of the 1,359 educators who participated in an orientation workshop in 2023–24, 197 (15%) registered for a Summer of CS workshop and 147 (11%) attended the full workshop. Those 147 participants who attended both an orientation workshop and a Summer of CS workshop represent 20% of the total Summer of CS participants in 2024.

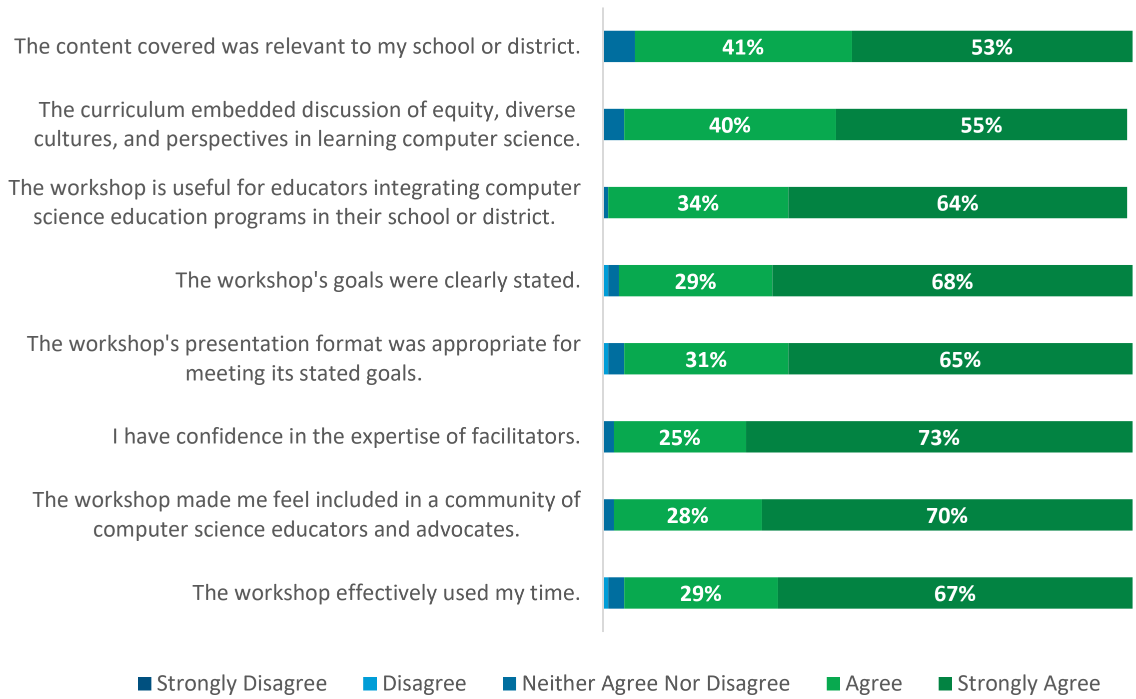
Findings About Overall Workshop Quality

Beyond overall participation levels, a key measure of success for Summer of CS is participants' perspectives about the quality of their workshop experiences. Exhibit 4 shows participant responses about workshop quality from the post-workshop survey. An overwhelming majority of respondents agreed or strongly agreed with statements that described the relevance, usefulness, and execution of their workshop. For example, 55% of respondents strongly agreed and 40% agreed that the curriculum embedded discussion of equity, diverse cultures, and perspectives in learning computer science. Similarly, 70% of respondents strongly agreed and 28% agreed that the workshop made them feel included in a community of computer science educators and advocates.

Key Finding #2

Survey respondents reported very positive experiences with Summer of CS workshop quality.

Exhibit 4. Participant Perceptions of Summer of CS Workshop Quality



Note. n = 626.

Findings About Changes in Participant Perspectives

Although it is instructive to learn about workshop attendees' perceptions of quality, a positive experience alone is insufficient for gauging success. An effective professional development effort supported by EWIG: CS should help participants grow their knowledge, understanding, and skills to effectively meet students' computer science learning needs. An analysis of survey responses enables us to describe ways in which self-reported beliefs and levels of confidence increased from the beginning to the end of the Summer of CS workshops. Please note that all of the differences reported about pre- and post-workshop changes are statistically significant at an alpha level of 0.05.

Changes in Participant Confidence: Overall Results

The first set of survey items addresses participant confidence. Among these responses, participants reported the highest level of change for the statement, "I am confident in my ability to teach in alignment with California's computer science standards." The difference of 1.04 indicates that respondents, on average, changed a full response option between the beginning and the end of the workshop. The average level of confidence grew for each of the items in Exhibit 5, with the magnitude of change ranging from 0.60 to 1.04. All changes in Exhibit 5 are statistically significant.

Key Finding #3

Survey responses reveal a positive and statistically significant change in confidence in teaching computer science between the beginning and the end of Summer of CS workshops.

Exhibit 5. Changes in Summer of CS Participant Confidence With Respect to Computer Science

I am confident in my ability to …	Pre-workshop Mean	Post-workshop Mean	Mean Change
Teach computer science.	3.15	4.05	0.90
Articulate to administrators why computer science is important.	3.64	4.35	0.71
Articulate to students why computer science is important.	3.82	4.42	0.60
Answer student questions about computer science material.	3.07	3.97	0.90
Teach a stand-alone computer science class.	2.71	3.60	0.89
Incorporate computer science content into another subject area.	3.34	4.22	0.88
Teach in alignment with California computer science standards.	3.08	4.12	1.04
Assess students' learning and performance in computer science.	3.04	4.04	0.97

Note. n = 515. For the purpose of analysis, the research team assigned a numerical value to each response option (Strongly agree = 5, Agree = 4, Neither agree nor disagree = 3, Disagree = 2, Strongly disagree = 1).

Changes in Participant Confidence: Subgroup Results

Just as efforts to support the equitable expansion of computer science seek to overcome historical trends of underrepresentation among students, so too do they aim to address the computer science teaching force. Computer science is a field primarily populated by men who identify as White or Asian (John & Carnoy, 2017; Zippia, 2023). Moreover, lack of preparatory privilege and confidence often create obstacles for people to pursue opportunities to learn and contribute to computer science education (Yadav et al., 2016). If EWIG: CS is to expand opportunities for historically underrepresented educators, it is important to understand the experiences of women, people of color, and educators who have not previously engaged with computer science.

Key Finding #4

Positive changes in confidence are more pronounced among survey respondents who identify as women, who identify as part of an underrepresented racial group, and who have no prior experience with teaching computer science.

Exhibit 6. Changes in Summer of CS Participant Confidence With Respect to Computer Science by Respondent Characteristic

	Pre-workshop to Post-workshop Mean Change					
I am confident in my ability to …	Women	Men	Under-represented Racial Group	White or Asian	CS Teaching Experience: 0 Years	CS Teaching Experience: 1+ Years
Teach computer science.	0.95	0.65	1.04	0.82	1.13	0.72
Articulate to administrators why computer science is important.	0.76	0.48	0.89	0.62	0.91	0.54
Articulate to students why computer science is important.	0.64	0.45	0.71	0.55	0.79	0.44
Answer student questions about computer science material.	0.97	0.57	1.07	0.82	1.22	0.66
Teach a stand-alone computer science class.	0.93	0.62	0.95	0.84	1.04	0.73
Incorporate computer science content into another subject area.	0.93	0.63	1.02	0.80	1.09	0.71
Teach in alignment with California computer science standards.	1.09	0.86	1.25	0.94	1.18	0.89
Assess students' learning and performance in computer science.	1.04	0.67	1.18	0.87	1.18	0.78

Note. n = 515. For the purpose of analysis, the research team assigned a numerical value to each response option (Strongly agree = 5, Agree = 4, Neither agree nor disagree = 3, Disagree = 2, Strongly disagree = 1). The underrepresented racial group includes any individual who identifies with a race other than White or Asian.

Exhibit 6 displays the changes in confidence from the beginning of the workshop to the end of the workshop by gender, race, and prior computer science teaching experience. For nearly all eight survey items, the average change for the historically underrepresented educator group—that is, women, members of an underrepresented racial group, and participants without any prior computer science teaching experience—exceeds that of their peers. Regression analyses reinforce these findings. Holding other participant background characteristics constant, the coefficients for gender, racial identity, and computer science teaching experience are statistically significant for most of the eight survey items, with the following exceptions:

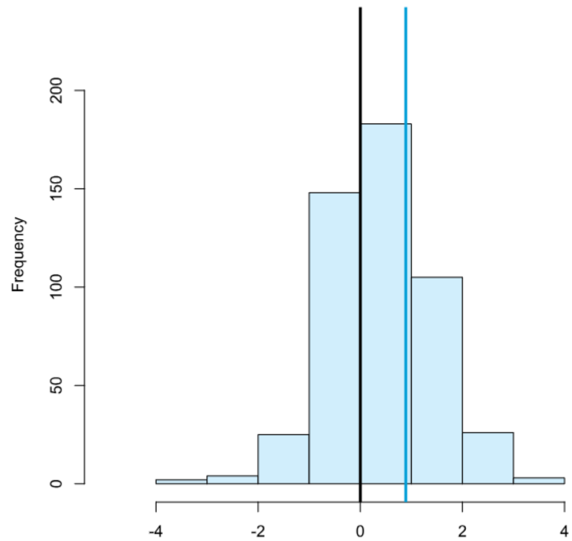
- There were no statistically significant differences based on racial identity for confidence in articulating to students why computer science is important or integrating computer science content into another content area. However, the changes for these items were higher for women and for respondents with lower levels of computer science teaching experience.
- There were no statistically significant differences based on gender or years of computer science teaching experience for confidence in teaching in alignment with California's computer science standards. However, the changes for this item were higher for respondents with racial identities that have been historically underrepresented in computer science.
- There were no statistically significant differences among any subgroups for confidence in teaching a standalone computer science class.

See Appendix C for the full regression output.

Changes in Participant Confidence: Variation in Results

The information presented in Exhibit 5 provides a useful overview of the *average* change reported by workshop participants, but it does not tell us much about the *variation* in change. To illustrate the range of experiences reported by survey respondents, the x axis of Exhibit 7 displays the number of points on the survey item Likert scale that a respondent's answer moved between the pre- and post-workshop surveys. If, for example, a respondent answered *Agree* to an item before the workshop and *Strongly Agree* to the same item after the workshop, the value of the change would be 1. If they answered *Neither Agree nor Disagree* before the workshop and *Strongly Disagree* after the workshop, the value would be -2. If they answered *Strongly Agree* before the workshop and *Strongly Agree* after the workshop, the value would be 0. The y axis of Exhibit 7 shows the number of respondents that fall into each category.

Exhibit 7. Changes in Summer of CS Participant Confidence to Teach Computer Science



The exhibit shows the changes in survey responses for the item, "I am confident in my ability to teach computer science." The black vertical line is set at 0; 147 respondents reported no change from the beginning to the end of the workshop. The blue line represents the average change for this item; in this case, it matches the mean of 0.90 shown in Exhibit 5. This display demonstrates that the greatest number of respondents (183) reported an increase of 1 point on the Likert scale, and 105 respondents reported an increase of 2. Very small numbers of participants reported changes as high as 4 and as low as -4. Similar histograms for all pre- and post-workshop survey changes are available in Appendix D.

Exhibit 8. Changes in Summer of CS Participant Confidence With Respect to Serving All Students in Computer Science

Please indicate your level of disagreement or agreement with the following statements about ALL students in the school/organization where you work. I am confident in my ability to …	Pre-workshop Mean	Post-workshop Mean	Mean Change
Recruit more students to pursue computer science education.	3.55	4.26	0.71
Encourage students to continue pursuing computer science education.	3.72	4.36	0.64
Create a sense of belonging for students in computer science education.	3.85	4.43	0.58

Note. n = 515. For the purpose of analysis, the research team assigned a numerical value to each response option (Strongly agree = 5, Agree = 4, Neither agree nor disagree = 3, Disagree = 2, Strongly disagree = 1).

Changes in Participant Confidence With All Students and With Historically Underserved Students: Overall Results

A second set of items asked about participant confidence in recruitment, retention, and creating a sense of belonging for students. The survey began with three questions about respondents' level of confidence for *all* students. Exhibit 8 shows that between the pre- and post-workshop survey, the average survey response increased by 0.71 points for the item, "I am confident in my ability to recruit more students to pursue computer science education." All changes reported in the exhibit are statistically significant.

The EWIG: CS grant seeks not only to expand computer science education opportunities overall, but to do so in a way that promotes equity and increases access for students who have not historically participated at high levels. To better understand ways in which Summer of CS might contribute to improving opportunities for students who are women/girls, who come from low-income backgrounds, who live in rural areas, who are English learners, and who identify as Black, Latino/a/e, and/or indigenous, the survey asked the same set of questions specifically about these students. Exhibit 9 shows that between the pre- and post-workshop survey, the average survey response increased by 0.60 points for the item, "I am confident in my ability to recruit more underrepresented students to pursue computer science education." All changes reported in Exhibit 9 are statistically significant.

Key Finding #5

Survey responses reveal a positive and statistically significant change in confidence to recruit and retain students in computer science; this change is of a greater magnitude when the survey items referred to all students than when the survey items referred to historically underrepresented students.

Exhibit 9. Changes in Summer of CS Participant Confidence With Respect to Serving Historically Underrepresented Students in Computer Science

Please indicate your level of disagreement or agreement with the following statements about the historically underrepresented students in the school/organization where you work. I am confident in my ability to …	Pre-workshop Mean	Post-workshop Mean	Mean Change
Recruit more underrepresented students to pursue computer science education.	3.75	4.35	0.60
Encourage underrepresented students to continue pursuing computer science education.	3.83	4.41	0.58
Create a sense of belonging for underrepresented students in computer science education.	3.90	4.45	0.55

Note. n = 515. For the purpose of analysis, the research team assigned a numerical value to each response option (Strongly agree = 5, Agree = 4, Neither agree nor disagree = 3, Disagree = 2, Strongly disagree = 1).

Changes in Participant Confidence With All Students and With Historically Underserved Students: Subgroup Results

As with the first set of items about participant confidence, we examined differences among subgroups of participants through regression analyses that included racial identity, gender identity, and computer science teaching experience as independent variables. Women and respondents with an underrepresented racial identity had larger statistically significant changes in their confidence to create a sense of belonging for *all* students than their male and White and Asian peers, controlling for computer science teaching experience; respondents with an underrepresented racial identity also had larger statistically significant changes in their confidence to recruit *all* students and encourage *all* students to continue pursuing computer science education, controlling for computer science teaching experience and gender. For historically underrepresented students, women had larger statistically significant changes in their confidence to recruit more *underrepresented* students to pursue computer science education, controlling for race and computer science teaching experience. (See Appendix C for the full regression output.)

Changes in Participant Beliefs: Overall Results

Another dimension of equity in computer science concerns educator beliefs. Research suggests that conscious and unconscious bias shape views among adults and students about who can be successful in computer science (Ashcraft et al., 2017; Margolis, 2008; Scott et al., 2019). Success in an equity-focused effort to build capacity, therefore, might improve educator beliefs about who belongs in computer science and who can benefit from computer science. The next set of survey items, displayed in Exhibit 10, examines changes in respondents' attitudes about their students between the pre- and post-workshop surveys. For example, the average change was 0.20 for the item, "All students can do well on computing tasks with the right teaching and supports." All of these changes are positive and statistically significant.

> **Key Finding #6**
>
> **Survey responses reveal a positive and statistically significant change in beliefs about who can and should do well in computer science.**

Note that all of the changes presented in Exhibit 10 are smaller in magnitude than the items asking about changes in educator confidence (see Exhibit 5). However, the pre-workshop average response is also higher; each exceeds 4, which places those responses between *Agree* and *Strongly Agree* on the Likert scale. Thus, respondents had less room to grow in their responses between the beginning and end of the workshop. These data suggest that survey respondents entered their workshop already having high levels of belief about what students can and should be able to do in computer science.

Exhibit 10. Changes in Summer of CS Participant Beliefs About Computer Science

Please indicate your level of disagreement or agreement with the following statements.	Pre-workshop Mean	Post-workshop Mean	Mean Change
All students should learn the fundamentals of computer science.	4.43	4.63	0.20
All students can master the skills taught in computer science.	4.27	4.48	0.21
Learning computer science will help students succeed later in life.	4.43	4.60	0.17
All students can do well on computing tasks with the right teaching and supports.	4.39	4.59	0.20
All students can understand concepts underlying computer processes.	4.24	4.52	0.28

Note. n = 515. For the purpose of analysis, the research team assigned a numerical value to each response option (Strongly agree = 5, Agree = 4, Neither agree nor disagree = 3, Disagree = 2, Strongly disagree = 1).

Changes in Participant Beliefs: Subgroup Results

As with previous items, we conducted regression analyses to examine the connection between participant characteristics and changes in beliefs. None of the differences among subgroups were statistically significant.

Next Steps for the EWIG: CS Evaluation

The ultimate goal of a capacity-building investment like EWIG: CS is to change the practices of educators in ways that better serve students. Our best measures of quality for Summer of CS, then, are not the impressions of participants during their attendance, but rather their behaviors when they return to schools and classrooms. The data we discuss in this report cannot tell us whether these changes will take place. However, the AIR evaluation team plans to explore this issue through a follow-up survey to be administered to participants during the 2025–26 school year. This follow-up survey will ask respondents about the concrete steps they have taken in the months and years after their workshop participation. The data from this survey will have limitations, as they will rely on self-reported accounts of classroom behavior. Nevertheless, additional respondent perspectives captured a year after their Summer of CS experience should provide valuable information to supplement the intermediate outcomes reported here.

In the meantime, the research team will continue to explore the remaining research questions outlined in Exhibit 1. Survey and focus group data from Computer Science Champions based in California's county offices of education will provide insights about Research Questions 4 and 5. Case studies of districts across the state will enable an examination of computer science course availability and participation to address Research Questions 6 and 7.

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