AIR

UPLAND UNIFIED SCHOOL DISTRICT

COMPUTER SCIENCE CASE STUDY

JANUARY 2026

Overview

Upland Unified School District (USD) is working to bring computer science to more students by integrating it into elementary and middle grade instruction and offering a high school pathway that includes Essentials of Computer Science, Advanced Placement (AP) Computer Science Java, and Cybersecurity. The number of standalone computer science courses at Upland High School has varied over time, and enrollment data show lower participation among 10th-grade, female, and Hispanic students compared to their overall representation in the district. District leaders report that support from the Educator Workforce Investment Grant in Computer Science (EWIG: CS) has helped teachers build confidence and capacity to teach computer science. Moving forward, Upland is working to increase early exposure, expand teacher credentialing, and ensure more students feel prepared to pursue computer science in high school.

Upland Unified School District

Upland USD is a suburban TK–12 district located in the Inland Empire of California, serving students across 10 elementary schools, 2 junior high schools, a comprehensive high school, and a continuation high school. District representatives describe the community as tightly knit, with strong ties to Upland High School. As one district leader explained, Upland is "a proud community of Highlanders . . . [with a] mission to create excellence through all that we do, including our integration of educational technology." This vision of excellence is reflected in the district's recent efforts to expand access to computer science across all grade levels.

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In recent years, district leadership has prioritized increasing access to computer science across all grades. District leaders describe a two-pronged approach: providing foundational exposure through integrated instruction in elementary and middle grades and offering a formal computer science pathway at the high school level. This work is led by the Director of Data Assessment and Educational Technology and supported by coaching and modeling from teachers on special assignment (TOSAs).

Computer Science Course Offerings

The number of standalone computer science courses and student enrollment in them at Upland High School has fluctuated over the past 6 years. Exhibit 1 shows that computer science course offerings and student enrollment peaked in 2018–19, dropped significantly the following year, and oscillated between two and four classes in subsequent years. In 2023–24, 98 students enrolled in four different computer science courses—two Computer Science Essentials sections and two AP Computer Science A sections—a return to prepandemic levels of both access and participation.

Exhibit 1. Computer Science Course Enrollment in Upland High Schools

Year	Computer science students	Computer science courses
2018–19	109	4
2019–20	48	2
2020–21	53	4
2021–22	74	2
2022–23	63	2
2023–24	98	4

According to district leaders, two primary factors affect the number of computer science courses offered each year: the availability of credentialed or trained teachers and student interest. One administrator noted that a now-retired math and computer science teacher played a key role in boosting post-COVID enrollment by actively recruiting students—particularly girls and students from underrepresented backgrounds—into his courses. Without that kind of teacher-driven outreach, enrollment can dip even when courses are technically available.

Additionally, because computer science is offered only as an elective, students must forgo other courses to participate. "In order for them to take computer science, they have to not take something else," one leader explained, citing packed student schedules as a persistent barrier. Although Upland is in the early stages of fostering computer science exposure in the early grades, that approach is still concentrated in two elementary schools and supported by TOSA-led professional development efforts.

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Computer Science Course Enrollment

Enrollment in computer science courses at Upland High School has rebounded from its nadir in 2019–20, but disparities in access persist across grade level, race, and gender. District leaders emphasize that targeted recruitment and earlier exposure—particularly in elementary and middle school—are key to closing these gaps and expanding equitable participation.

Enrollment by Grade Level

Despite shifts in access to computer science, enrollment remains uneven across grade levels. Upland offered two computer programming courses to junior high students in 2018–19, but not in subsequent years. Since that time, seniors consistently make up the largest share of computer science students—52% in 2023–24—despite representing just 24% of overall enrollment. In contrast, only 12% of computer science students were sophomores, who comprise 26% of the student body. (See Exhibit 2.)

District leaders attribute low 10th-grade participation to scheduling constraints and graduation requirements. "Tenth grade is kind of that crunch year for students," one administrator explained. By senior year, students often have more flexibility to take electives like computer science and may be drawn in after connecting with a teacher in another subject. Another leader noted, "That's when they start to see . . . 'I might really be interested in computer science as well.' "

Exhibit 2. Upland USD Computer Science Course Enrollment by Grade Level

Grade	Overall enrollment 2023–24	Computer science enrollment					
		2018–19	2019–20	2020–21	2021–22	2022–23	2023–24
8	N/A	37%	N/A	N/A	N/A	N/A	N/A
9	25%	6%	23%	11%	11%	21%	13%
10	26%	2%	6%	8%	4%	6%	12%
11	25%	28%	21%	38%	14%	29%	22%
12	24%	28%	50%	43%	72%	44%	52%

Source: CALPADS.

Exhibit Reads: In 2023–24, 26% of students in Upland were in Grade 10. In 2023–24, 12% of students enrolled in a computer science course in Upland were in Grade 10.

Enrollment by Race/Ethnicity

Computer science enrollment in Upland shows consistent disparities by race and ethnicity. In 2023–24, Asian students represented 5% of the district but 16% of computer science enrollment. Hispanic students, who make up 64% of the student population, were underrepresented in most years, though the share in computer science courses rose to 50% in 2023–24. District leaders have emphasized the importance of early exposure to ensure all students feel prepared to pursue computer science in high school. One leader noted their hope that "every time we send students to our junior highs and high schools, they feel equipped with the skills needed to be successful in computer science."

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Exhibit 3. Upland USD Computer Science Course Enrollment by Race/Ethnicity

Race/ethnicity	Overall enrollment 2023–24	Computer science enrollment					
		2018–19	2019–20	2020–21	2021–22	2022–23	2023–24
Asian	5%	16%	17%	17%	18%	17%	16%
Black/African American	8%	6%	4%	6%	7%	11%	5%
Filipino	2%	5%	2%	2%	5%	5%	7%
Hispanic	64%	44%	46%	38%	45%	33%	50%
Multiple races	2%	6%	2%	4%	3%	0%	2%
White	17%	21%	27%	20%	20%	33%	18%

Source: CALPADS

Notes. Demographic groups 'Missing,' 'American Indian/Native Alaskan,' 'Native Hawaiian/Other Pacific Islander' are not included in the exhibit because the percentage of students in these groups is lower than 2%. Sums of the percentages may not equal 100%.

Exhibit Reads: In 2023–24, 64% of students in Upland were Hispanic. In 2023–24, 50% of students enrolled in a computer science course in Upland were Hispanic.

Enrollment by Gender

Male students in Upland consistently outnumber female students in computer science courses. In 2023–24, males made up 76% of computer science enrollment but only 53% of the overall student population. Female participation has remained below the districtwide representation, with just 24% enrolled in computer science that year. Nevertheless, district representatives noted that one teacher had actively worked to recruit girls into his classes. In 2023, the district received the AP Computer Science Female Diversity Award, which recognizes institutions that achieved either 50% or higher female exam taker representation in an AP Computer Science course or a percentage of female computer science exam takers that meets/exceeds that of the school's female population. Leaders hope that earlier exposure and continued outreach will help close the gap over time.

Exhibit 4. Upland USD Computer Science Course Enrollment by Gender

Gender	Overall enrollment 2023–24	Computer science enrollment					
		2018–19	2019–20	2020–21	2021–22	2022–23	2023–24
Female	47%	32%	19%	21%	12%	33%	24%
Male	53%	68%	81%	79%	86%	67%	76%

Source: CALPADS

Note. Demographic group 'Nonbinary' is not included in exhibit because the percentage of students in this group is lower than 2%. The sum of the percentages may not equal 100%.

Exhibit Reads: In 2023–24, 47% of students in Upland were female. In 2023–24, 24% of students enrolled in a computer science course in Upland were female.

The Educator Workforce Investment Grant's Role in Supporting Computer Science Efforts

As Upland USD works to expand equitable access to computer science, district leaders credit EWIG: CS as a critical lever in building capacity—particularly in elementary and middle grades where integration is the focus. Seasons of CS registration records indicate that in both the 2023–24 and 2024–25 school years, eight Upland educators participated in a Summer of CS workshop. Leaders described EWIG-supported initiatives such as Summer of CS and Seasons of CS as "huge" in shaping both the district's strategic direction and individual teachers' instructional practices. These offerings provide essential professional learning experiences that the district does not have the resources to offer on its own.

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Participation in EWIG: CS-sponsored training has helped teachers, especially those with backgrounds in other subjects, familiarize themselves with California's computer science standards and develop lessons that connect computing to core academic content. District leaders report that EWIG: CS opportunities have fostered teacher confidence and inspired early adopters to take on leadership roles. One educator noted that several teachers have gone on to pursue supplemental computer science authorizations through university partnerships.

EWIG: CS has also helped shift perceptions about who can and should teach computer science. According to one district leader, "We attribute a lot of our success . . . or even having a plan and a framework and a map . . . to the resources we were able to access through the CS grant." These supports have been especially valuable in introducing computer science to elementary teachers who previously assumed it was only relevant at the secondary level.

The Path Ahead

As Upland continues to build toward districtwide integration of computer science, leaders have established two strategic priorities: ensuring that all students arrive at high school with foundational computer science experience and preparing for a possible future state requirement for computer science. Rather than waiting to respond to policy mandates, district leaders are proactively laying the groundwork for a systemwide computer science infrastructure. "We don't want to wait until we have to—we want to wait until we get to," one administrator explained.

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To support early readiness, the district is working to embed computer science into the elementary and middle grades. TOSAs have created crosswalk documents that map computer science standards to core subjects like ELA and social studies, demonstrating that integration doesn't require teachers to "do anything really different" but simply expand on lessons they already teach. At the same time, Upland is encouraging teachers to pursue computer science credentials—often through grant-funded opportunities at local universities—to build long-term internal expertise.

Teacher leadership is also a key component of the district's strategy. Instructional leads who attend EWIG: CS-supported trainings like Summer of CS are encouraged to share new practices across sites. Teachers who once saw computer science as outside their role—particularly in the elementary grades—are increasingly engaging in computer science integration thanks to hands-on exposure, peer modeling, and structured support.

Along with building instructional capacity, Upland is investing in growing student interest in computer science. In 2025–26, the district will host its third districtwide Computer Science Night, where families from across TK–12 explore computer science activities and tour the high school's Career and Technical Education classrooms. District leaders describe the event as a cornerstone of Upland's community outreach strategy. The district is also exploring targeted recruitment strategies to increase participation among historically underrepresented students, including offering transportation and focusing outreach on school sites with lower attendance at past events.

District leaders hope these combined strategies—early exposure, integrated instruction, credentialed teachers, and sustained outreach—will ensure that all students see themselves as capable of succeeding in computer science, regardless of their background, schedule, or prior experience.

The American Institutes for Research (AIR) has produced this case study as part of its evaluation of California's Educator Workforce Investment Grant in Computer Science (EWIG: CS). It is one of six case studies designed to illustrate the contextual details, strategies, successes, and challenges that shape efforts to expand computer science education in the state. For more information on the AIR evaluation, including additional findings about the EWIG: CS grant, please visit https://www.air.org/project/evaluation-educator-workforce-investment-grant-computer-science

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