Oklahoma

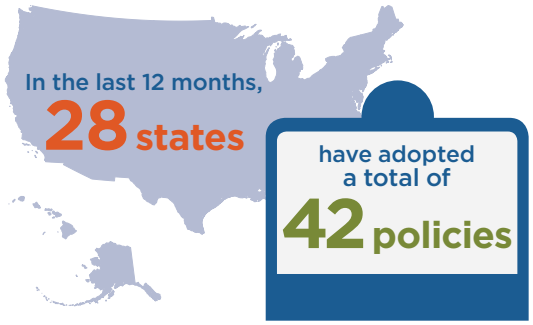
2020 State of Computer Science Education: Illuminating Disparities

Computer science education is more important than ever. The COVID-19 pandemic has highlighted our society's reliance on computing and its power to help businesses innovate and adapt, yet at the same time has surfaced greater disparities for students studying computer science. Computing is the number one source of all new wages in our economy, and there are currently 400,000 open computing jobs across the United States. Yet the U.S. education system does not provide widespread access to this critical subject.

Although access to computer science is key to addressing the equity issues in society, only 47% of our nation's high schools teach foundational computer science. In addition, students from marginalized racial and ethnic groups, students in Title I schools, and students from rural areas are less likely to attend a school that provides access to this critical subject.

States are working to broaden participation in computer science by passing policies to make computer science a fundamental part of the K–12 education system. In addition to adopting more policies, state education leaders extend and innovate on previously adopted policies: continuing to fund computer science education, supporting teachers and students, and providing leadership and guidance.

States that have adopted more of these nine policies have a larger percentage of high schools teaching computer science. States that have funded K–12 computer science professional learning have higher implementation rates than states that have not provided direct funding.



Pursuing an access agenda to K–12 computer science provides policymakers a rare opportunity to address equity, workforce, and education issues on a bipartisan basis. States should enact or expand on all nine of these education policies in order to provide opportunities for all students regardless of where they live, their race/ethnicity, gender, or socioeconomic status.

Nine Policies to Make Computer Science Fundamental

1. Create a state plan for K–12 computer science
2. Define computer science and establish K–12 CS standards
3. Allocate funding for CS teacher professional development
4. Implement clear certification pathways for computer science teachers
5. Create computer science preservice programs at IHEs
6. Establish dedicated state computer science positions
7. Require that all secondary schools offer computer science
8. Allow computer science to satisfy a core graduation requirement
9. Allow CS to satisfy admission requirements at IHEs

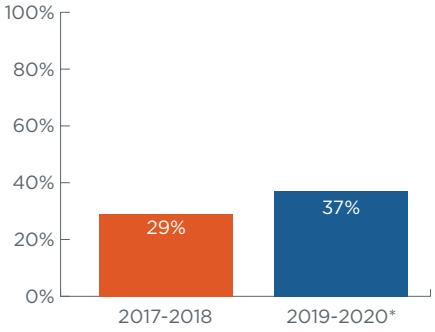
Oklahoma Computer Science Policy

State Plan No	Oklahoma has not yet created a state plan for K-12 computer science. A plan that articulates the goals for computer science, strategies for accomplishing the goals, and timelines for carrying out the strategies is important for making computer science a fundamental part of a state's education system.
Standards Yes	Oklahoma adopted K–12 computer science standards in 2018. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
Funding No	Although SB 593 (2019) authorized the Oklahoma State Department of Education to create a grant program for computer science professional learning and recommended $1M subject to authorization, no funds were appropriated for the program. Oklahoma can strengthen its computer science programs by creating specific opportunities to bring computer science to school districts, such as funding for rigorous professional development and course support.
Certification Yes	In Oklahoma, teachers with existing licensure can obtain a 9–12 certification through passing the state content exam; teachers can also earn an initial license in computer science.
Preservice No	Oklahoma has not yet established programs at institutions of higher education to offer computer science to preservice teachers. The computer science teacher shortage can be addressed by exposing more preservice teachers to computer science during their required coursework or by creating specific pathways for computer science teachers.
CS Supervisor Yes	The Oklahoma State Department of Education has a Director of Education Technology and Computer Science Education.
All HS Offer No	Oklahoma does not yet require that all secondary schools offer computer science. However, SB 593 (2019) directed the State Department of Education to develop a rubric for computer science programs in elementary, middle, and high schools to serve as a guide to schools for implementing quality computer science programs.
Grad Credit Yes	In Oklahoma, an approved computer science course can count as a mathematics or computer technology/world language credit in the Core Curriculum Standard Track.
IHE Admission Yes	Two computer science credits can count towards the additional required units in required content areas for admissions at institutions of higher education, which aligns with Oklahoma's high school graduation policy.

Oklahoma has a CSTA chapter.

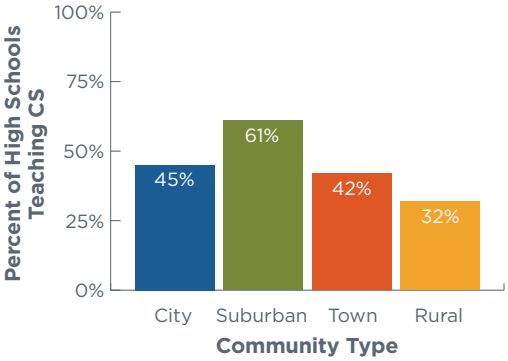
Computer Science Access and Participation in Oklahoma

High Schools Teaching CS



*Data was not collected for the 2018–2019 school year

Percent of High Schools Teaching CS by Community Type

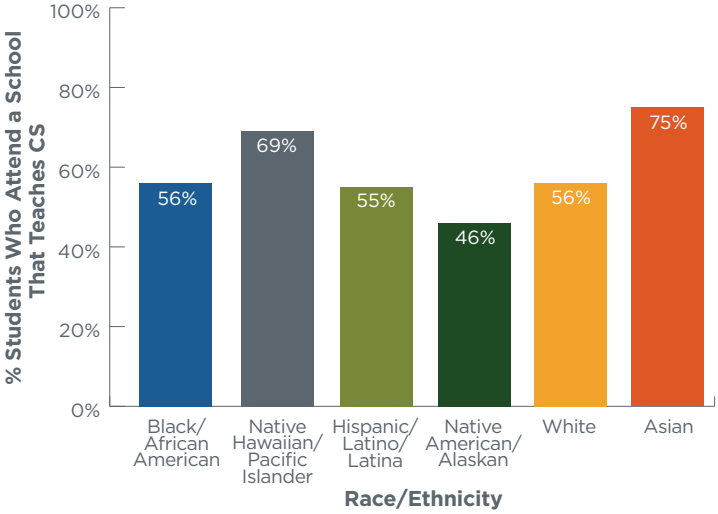


Oklahoma has averaged **3,258** open computing jobs each month*

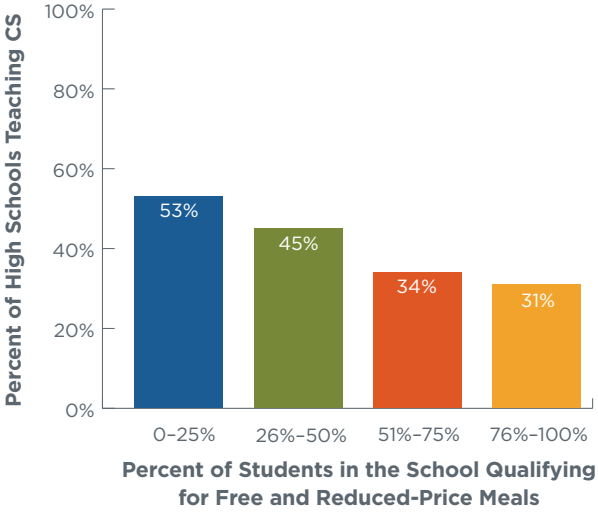
562 Bachelor's degrees in 2018 in Oklahoma*

*Sources: The Conference Board and the National Center for Education Statistics

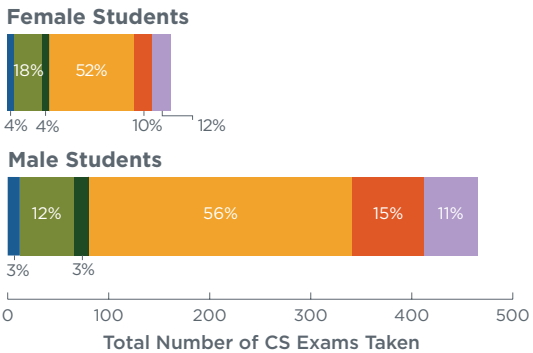
Race/Ethnicity and Access to Computer Science



Income Level and Access to CS



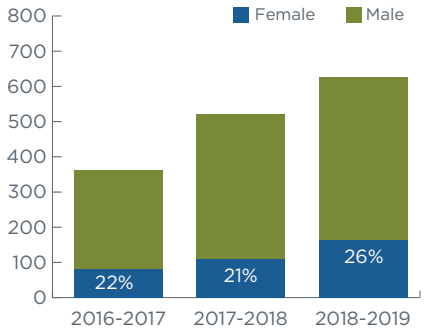
AP CS Participation by Race/Ethnicity and Gender



LEGEND

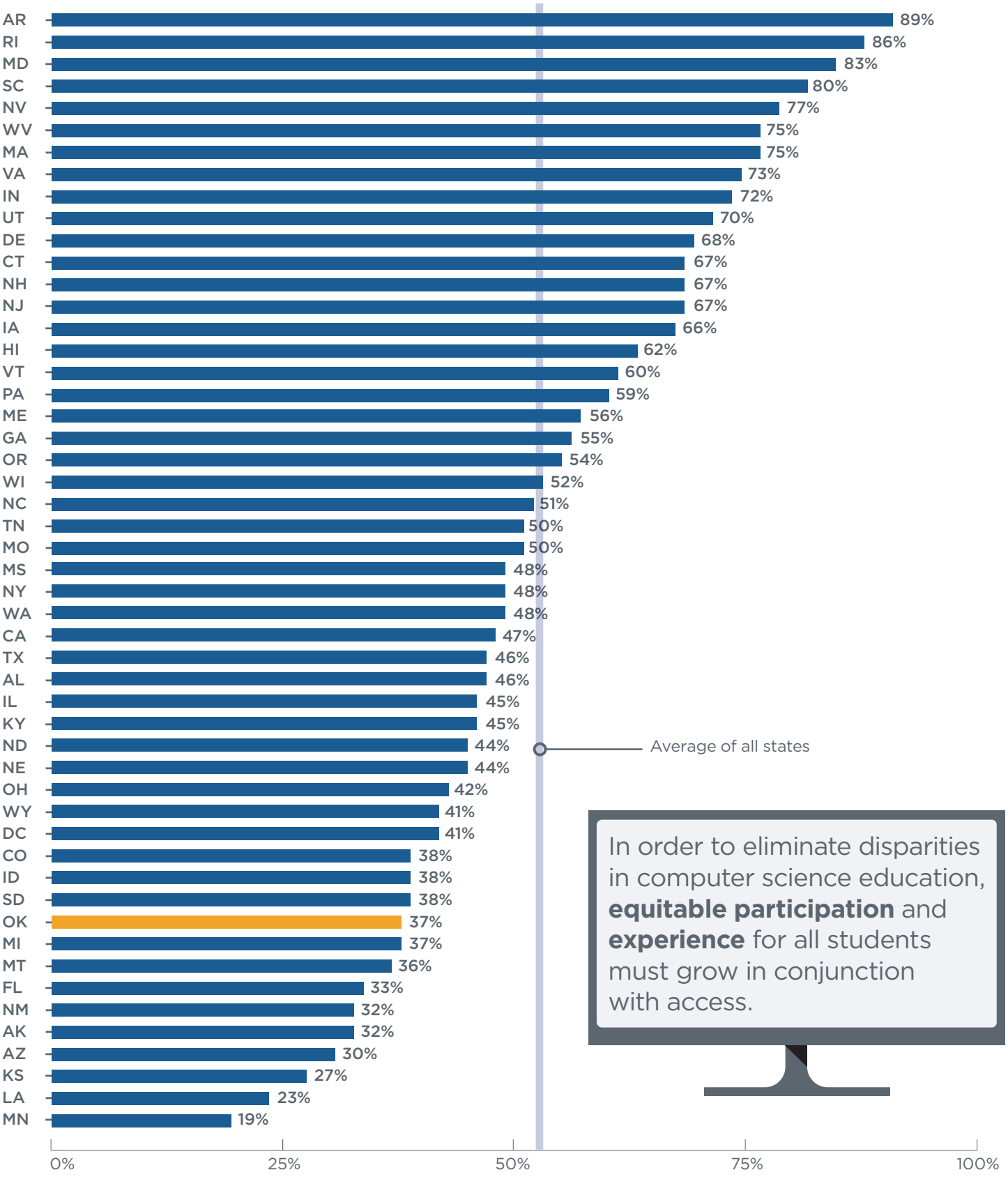
- Black/African American
- Native Hawaiian/Pacific Islander
- Hispanic/Latino/Latina
- Native American/Alaskan
- White
- Asian
- 2+ Races/Other

AP CS Student Participation



Native American/Alaskan students are 2 times less likely than their white and Asian peers to attend a school that offers AP CS, and 2.4 times less likely to take an AP CS exam when they attend a school that offers it. Hispanic/Latino/Latina students are 2 times less likely and Black/African American students are 5 times less likely to take an AP CS exam when they attend a school that offers it.

Percent of High Schools Teaching Computer Science by State



In order to eliminate disparities in computer science education, **equitable participation** and **experience** for all students must grow in conjunction with access.

For more details on policy, access, and participation, see the full 2020 State of Computer Science Education report at advocacy.code.org/stateofcs

Advocacy Coalition

ECEP Expanding Computing Education Pathways

CSTA