



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

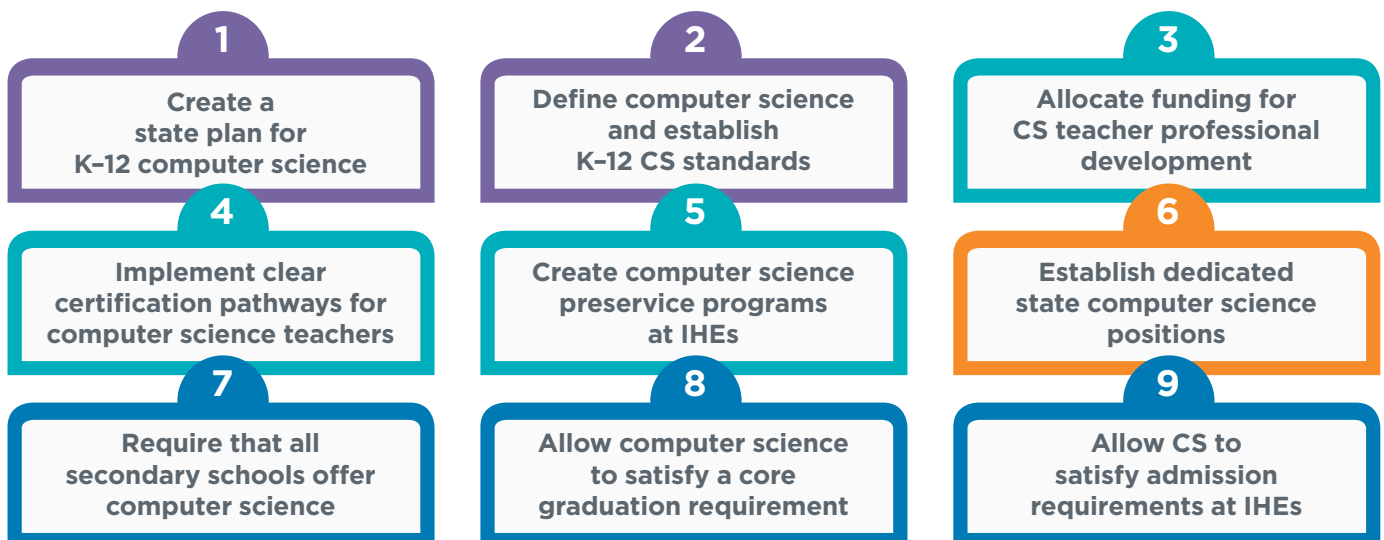
computer science education, supporting teachers and students, and providing leadership and guidance.

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. All nine policies can promote access to and equity within rigorous and engaging computer science courses when stakeholders make equity an explicit focus on policy development and implementation monitoring.

Nine Policies to Make Computer Science Fundamental





Oklahoma Computer Science Policy

State Plan

Yes

CSforOK developed a strategic plan for expanding computer science education in 2020. The plan includes a section on equity and will monitor outcomes including increasing participation by female students, Black students, and Hispanic/Latinx students.

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

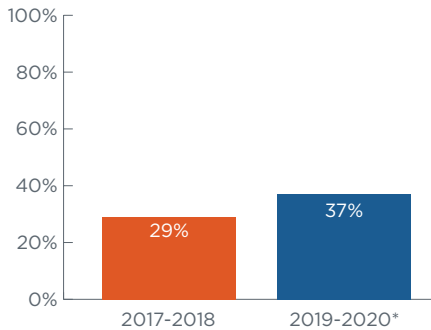
Two computer science credits can count towards the additional required units in required content areas for admissions at institutions of higher education, which aligns with Oklahoma's high school graduation policy.

Oklahoma has a CSTA chapter.



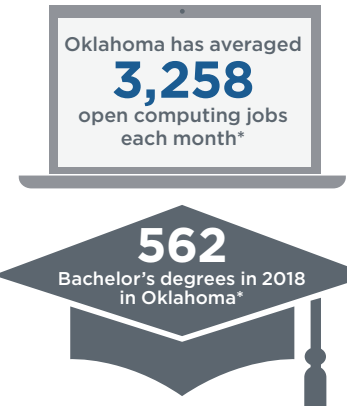
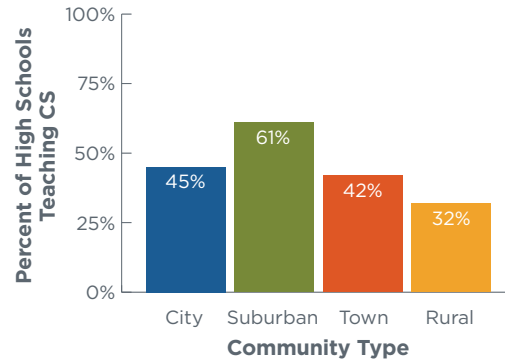
Computer Science Access and Participation in Oklahoma

High Schools Teaching CS



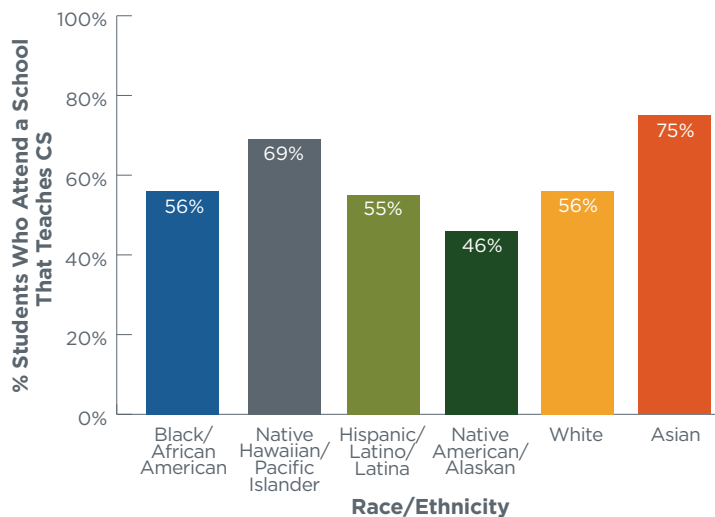
*Data was not collected for the 2018-2019 school year

Percent of High Schools Teaching CS by Community Type

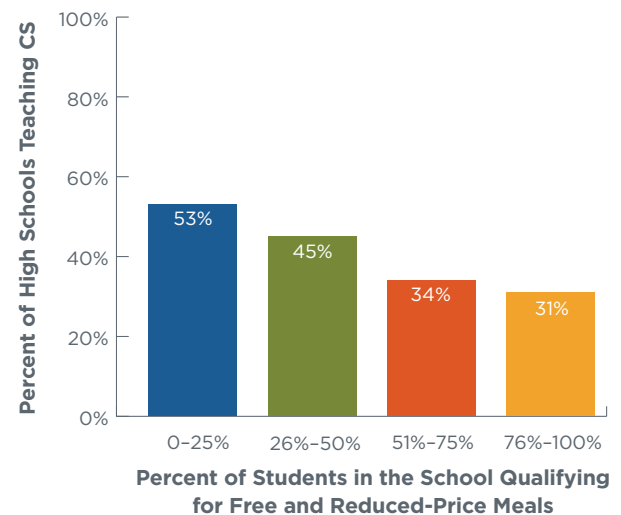


*Sources: The Conference Board and the National Center for Education Statistics

Race/Ethnicity and Access to Computer Science

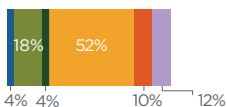


Income Level and Access to CS

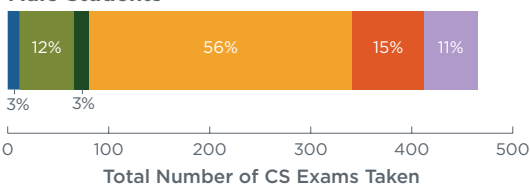


AP CS Participation by Race/Ethnicity and Gender

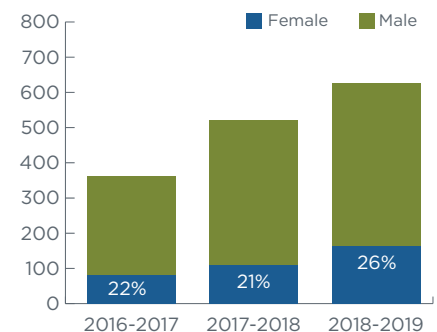
Female Students



Male Students



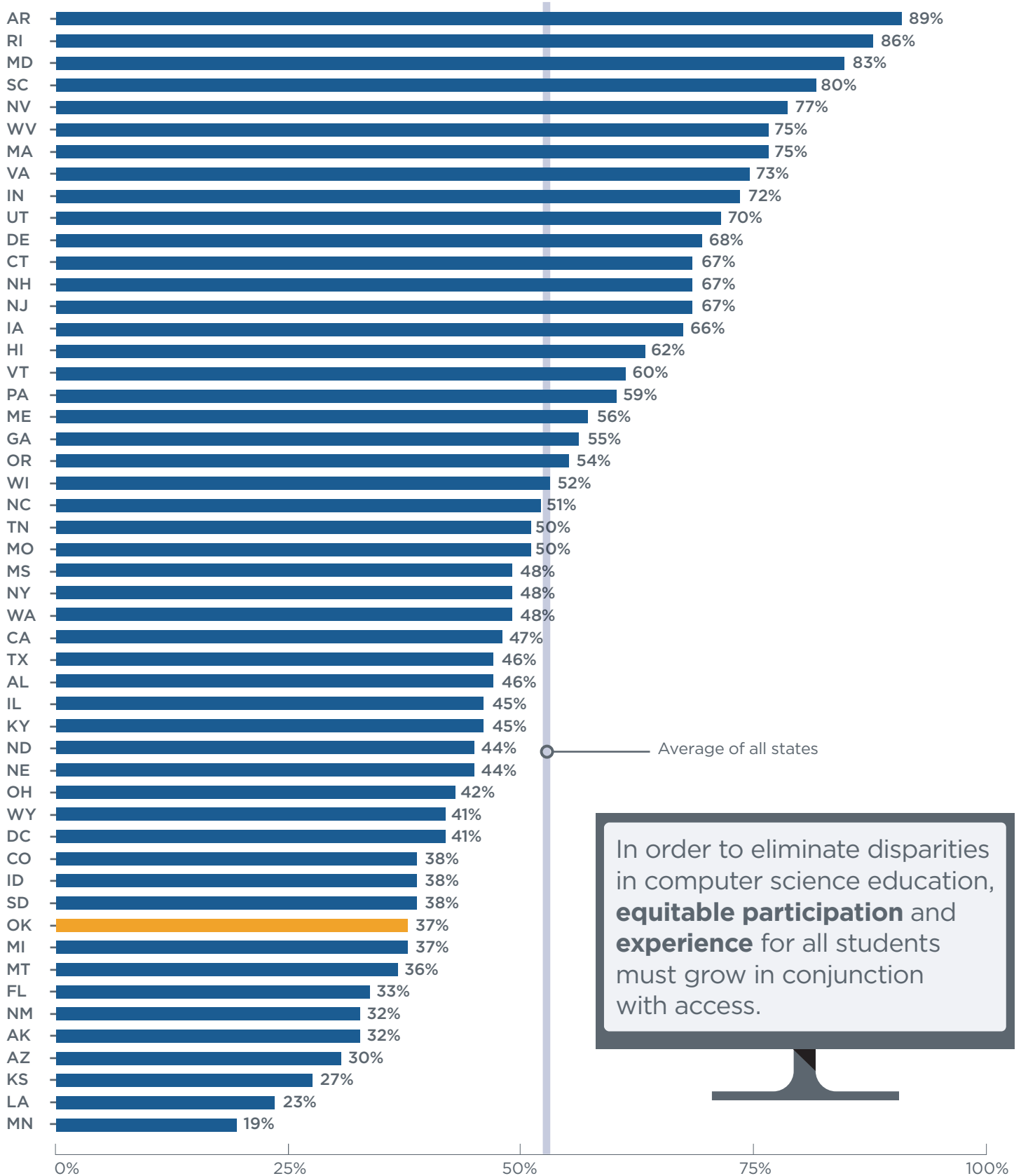
AP CS Student Participation



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



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

