Wyoming

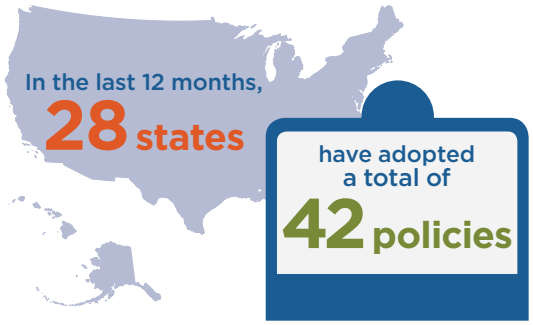
2020 State of Computer Science Education: Illuminating Disparities

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

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

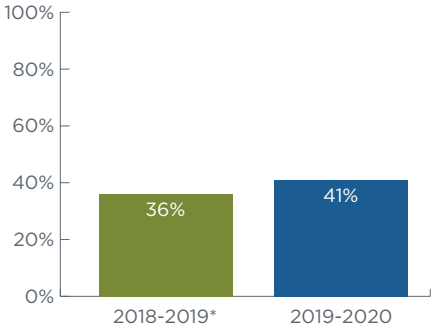
Wyoming Computer Science Policy

State Plan Yes	The Wyoming Department of Education created a task force in 2017 to develop and implement a long-term plan for expanding computer science.
Standards Yes	Wyoming adopted K–12 computer science standards in February 2020. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
Funding Other	Although Wyoming does not yet provide dedicated state funding, the Wyoming Trust Fund for Innovative Education prioritized computer science applications in 2018–2020. Wyoming can strengthen its computer science programs by creating specific opportunities to bring computer science to school districts, such as dedicated funding for rigorous professional development and course support.
Certification Yes	In Wyoming, teachers with existing licensure can obtain a K–12 endorsement by completing a program that leads to licensure or a combination of coursework and passing the Praxis CS exam. Another pathway requires coursework and work experience. Teachers can receive authorization to teach some computer science courses through a state and district-approved professional development plan and passing the Praxis CS exam.
Preservice No	Wyoming 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 Wyoming Department of Education has a Math and Computer Science Consultant.
All HS Offer Yes	SF 29 (2018) required all schools to include computer science and computational thinking by the 2022–2023 school year.
Grad Credit Yes	In Wyoming, computer science courses aligned with the standards can count as a math or science credit for graduation.
IHE Admission Yes	In Wyoming, computer science can count as one year of science, fourth year mathematics, or career credits required for admission at institutions of higher education, which aligns with the high school graduation policy.

Wyoming has a CSTA chapter.

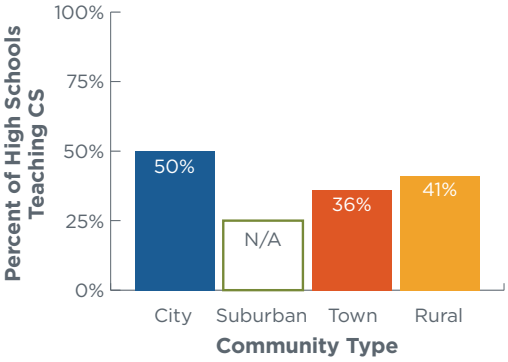
Computer Science Access and Participation in Wyoming

High Schools Teaching CS



*Reflects a correction of last year's published number

Percent of High Schools Teaching CS by Community Type

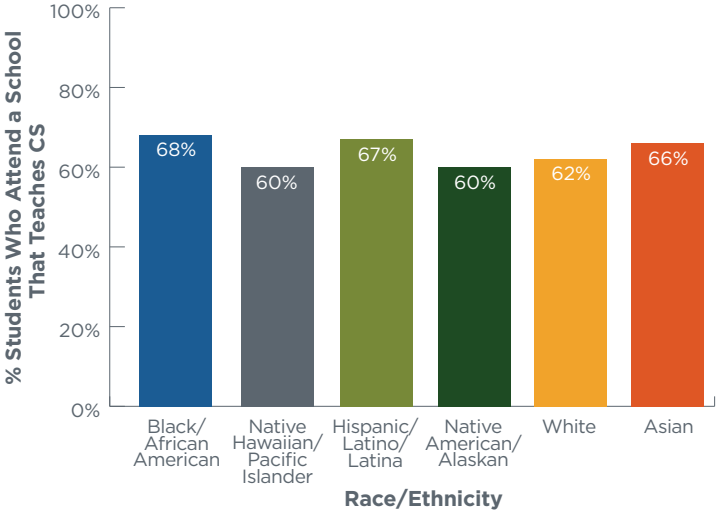


Wyoming has averaged **220** open computing jobs each month*

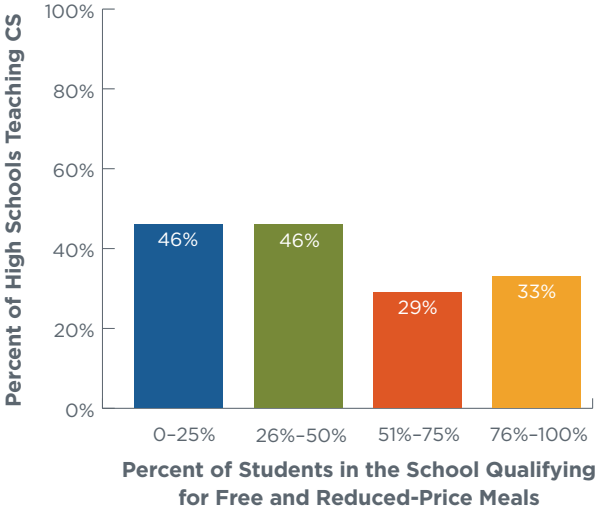
32 Bachelor's degree in 2018 in Wyoming*

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

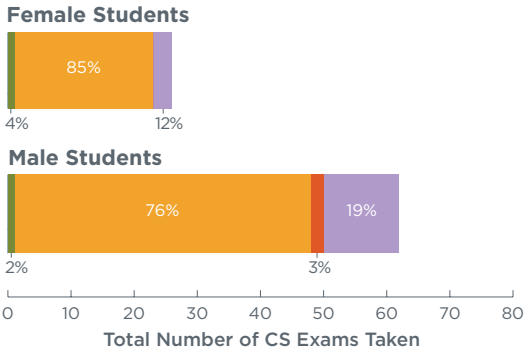
Race/Ethnicity and Access to Computer Science



Income Level and Access to CS



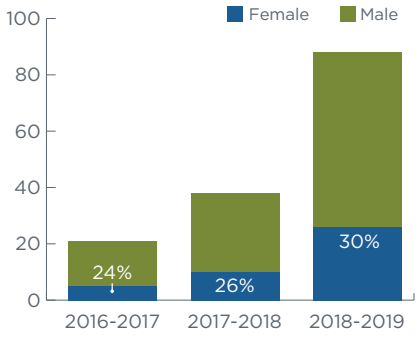
AP CS Participation by Race/Ethnicity and Gender



LEGEND

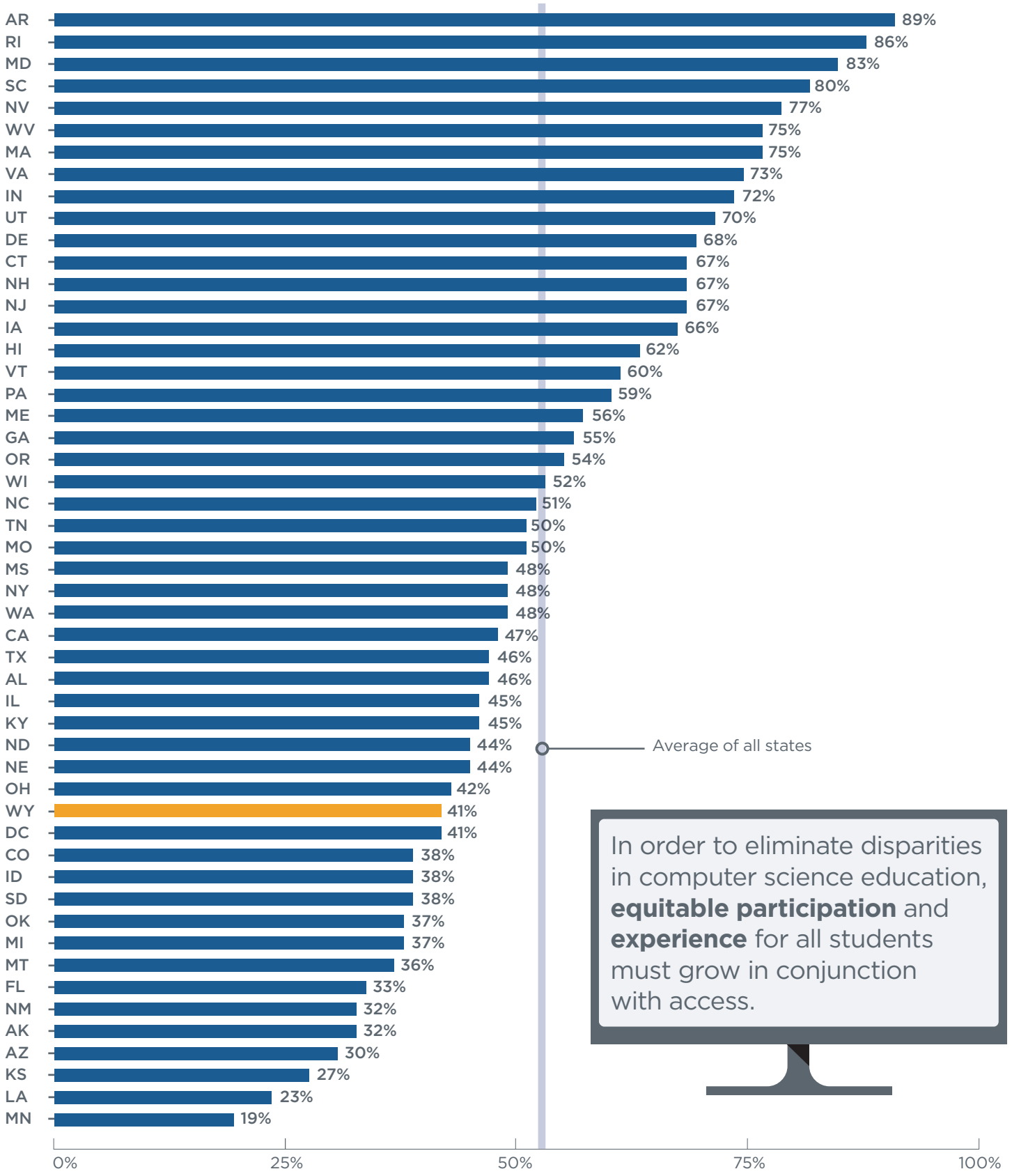
- Black/African American
- Native Hawaiian/Pacific Islander
- Hispanic/Latino/Latina
- Native American/Alaskan
- White
- Asian
- 2+ Races/Other

AP CS Student Participation



Native American/Alaskan students make up 4% of the overall student population, but no Native American/Alaskan students took an AP CS exam. Hispanic/Latino/Latina students make up 14% of the overall student population, but only 2 Hispanic/Latino/Latina students took an AP CS exam.

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