



Rhode Island

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

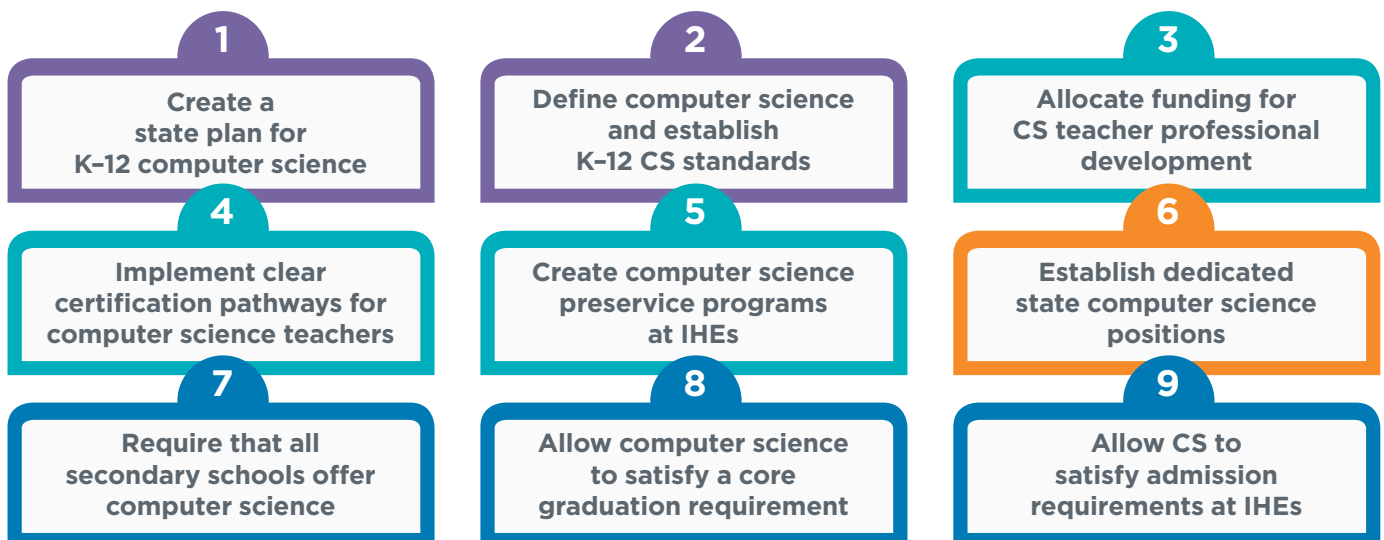
computer science education, supporting teachers and students, and providing leadership and guidance.

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





Rhode Island Computer Science Policy

State Plan

Yes

CS4RI (a partnership between the Governor's office and the Rhode Island Department of Education) created a state plan for computer science education implementation. One of the goals of the plan is to broaden participation among populations that are underrepresented in computer science.

Standards

Yes

Rhode Island adopted K-12 computer science standards in 2018. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity. Additionally, standards can be met without computing devices or with limited hardware access, making implementation possible for all schools.

Funding

Yes

H 5151A (FY 2020), H 7200A (FY 2019), H 5175 (FY 2018), and H 7454 (FY 2017) allocated \$210K annually for computer science professional development. Grants focus on broadening participation, and priority is given to Title I-eligible schools. The Department received a \$2.5M federal grant to support the creation of high school computer science pathways that incorporate work-based learning for historically underserved and underrepresented populations.

Certification

Yes

In Rhode Island, teachers with existing licensure can obtain an endorsement through academic coursework from an approved provider.

Preservice

No

Rhode Island 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 Rhode Island Department of Education has a core team advancing the goals of CS4RI, including the Digital Learning Specialist, CS4RI High School Grant Project Manager, and CS4RI Work-Based Learning Specialist.

All HS Offer

Other

Rhode Island does not yet require that all secondary schools offer computer science. However, the CS4RI initiative and the Governor's office set a goal for all students to have access to computer science courses by the end of 2017.

Grad Credit

Yes

In Rhode Island, computer science can count as a mathematics or science credit for graduation.

IHE Admission

No

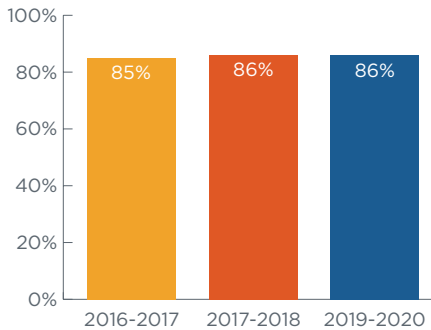
Rhode Island does not yet allow computer science to count as a core admission requirement at institutions of higher education. Admission policies that do not include rigorous computer science courses as meeting a core entrance requirement, such as in mathematics or science, discourage students from taking such courses in secondary education. State leaders can work with institutions of higher education to ensure credit and articulation policies align with secondary school graduation requirements.

Rhode Island is a member of the ECEP Alliance, has a CSTA chapter, and Governor Gina Raimondo is a member of the Governors' Partnership for K-12 Computer Science.

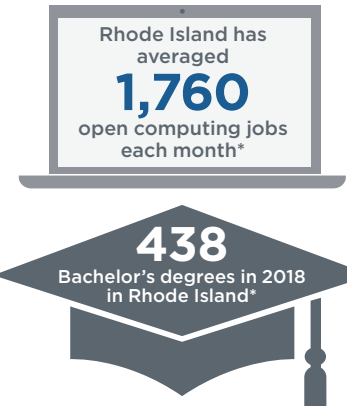
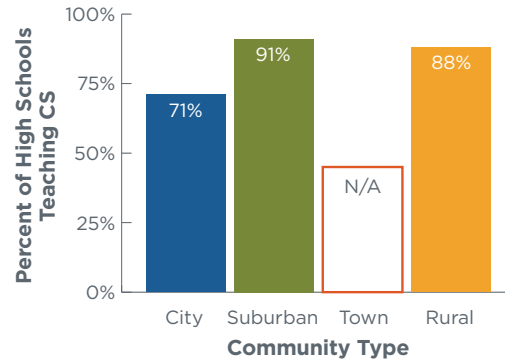


Computer Science Access and Participation in Rhode Island

High Schools Teaching CS

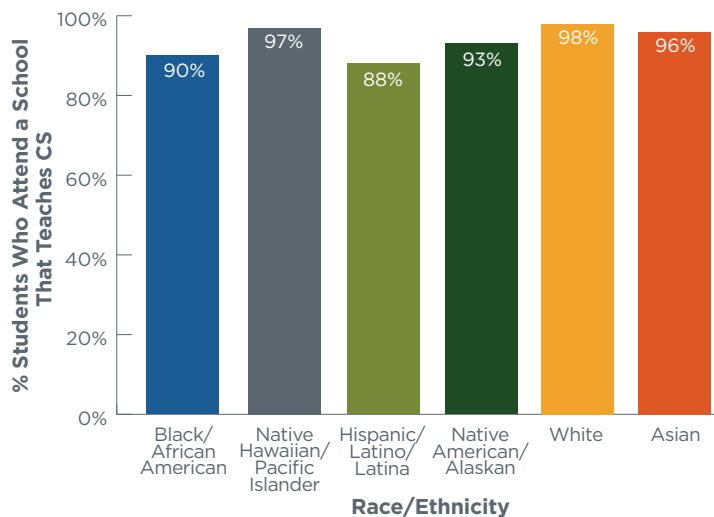


Percent of High Schools Teaching CS by Community Type

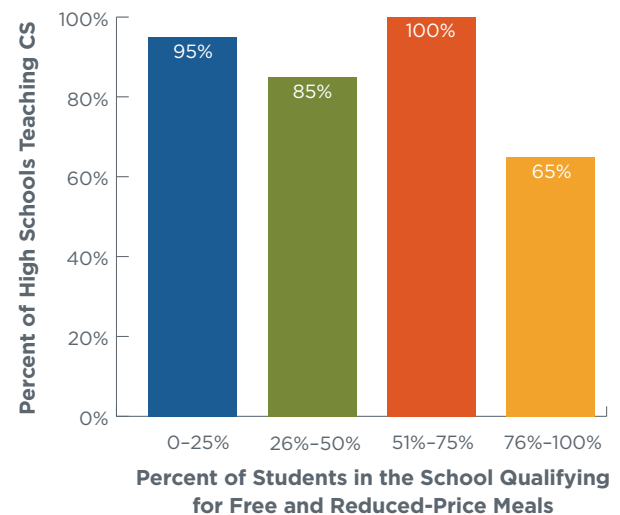


* Sources: The Conference Board and the National Center for Education Statistics

Race/Ethnicity and Access to Computer Science

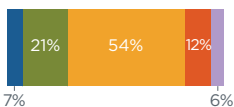


Income Level and Access to CS

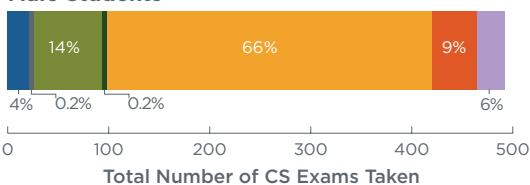


AP CS Participation by Race/Ethnicity and Gender

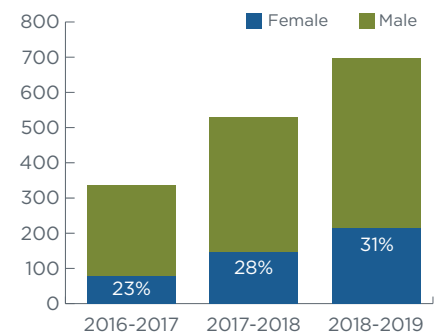
Female Students



Male Students



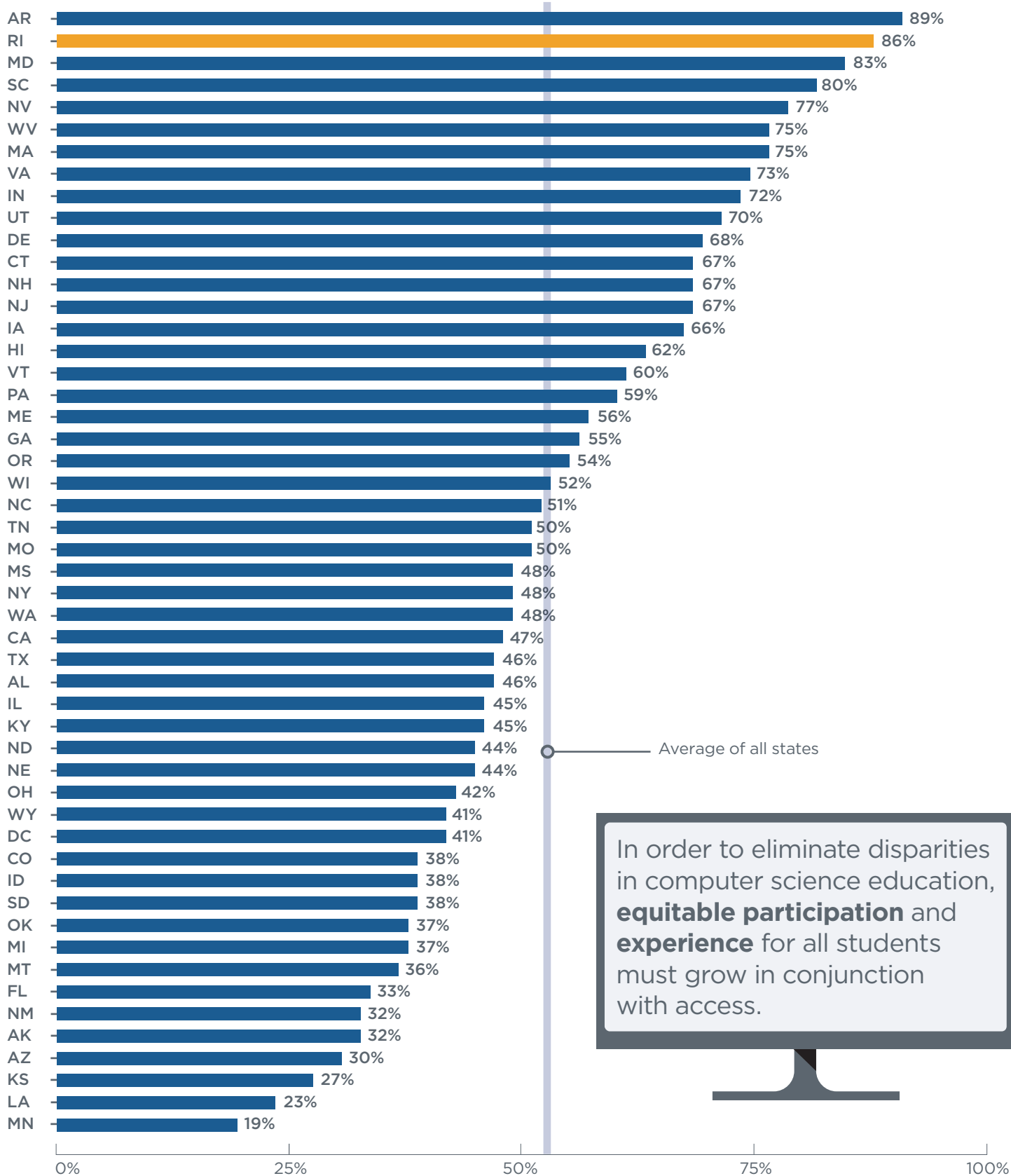
AP CS Student Participation



Hispanic/Latino/Latina and Native American/Alaskan students are each 1.6 times less likely than their white and Asian peers to attend a school that offers AP CS. Black/African American students are 1.3 times less likely than their white and Asian peers to attend a school that offers AP CS and 1.4 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

