



Tennessee

2020 State of Computer Science Education: Illuminating Disparities

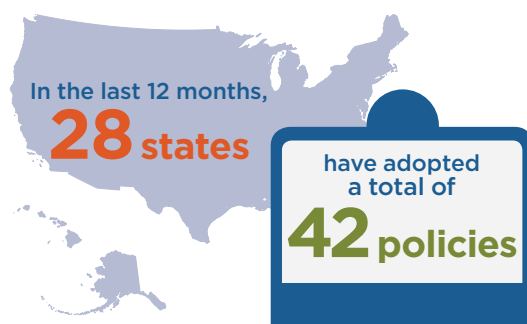
Computer science education is more important than ever. The COVID-19 pandemic has highlighted our society's reliance on computing and its power to help businesses innovate and adapt, yet at the same time has surfaced greater disparities for students studying computer science. Computing is the number 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

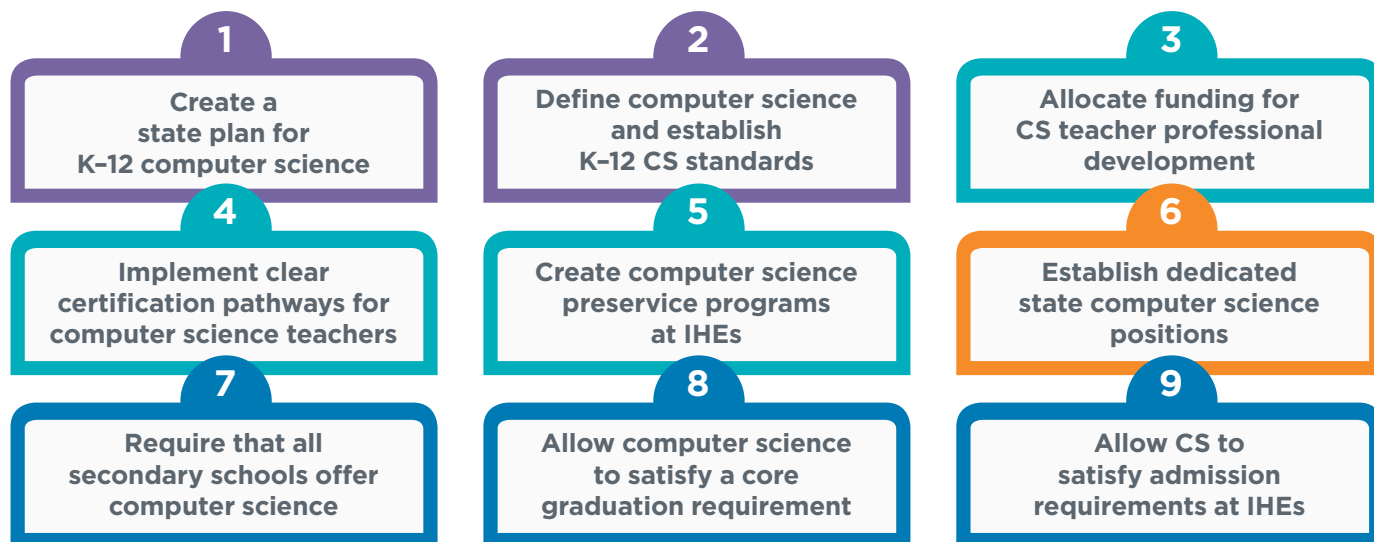
computer science education, supporting teachers and students, and providing leadership and guidance.

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





Tennessee Computer Science Policy

State Plan

Yes

The Tennessee Department of Education presented the Tennessee Computer Science State Education Plan to the legislature in April 2020 and posted a timeline for each recommendation on the department website.

Standards

Yes

Tennessee published a comprehensive set of K-12 computer science standards in July 2020.

Funding

Yes

PC 651 (FY 2021) includes \$518K for computer science education, including professional development, within the Governor's Future Workforce Initiative.

Certification

Yes

In Tennessee, teachers with existing licensure can obtain the Computer Science Employment Standard endorsement after completing approved professional development. An initial license in computer science requires completing academic coursework and passing the Praxis CS exam.

Preservice

Yes

The Tennessee Department of Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.

CS Supervisor

No

Tennessee does not yet have dedicated computer science positions in state or local education agencies. Creating a statewide computer science leadership position within the state education agency can help expand state-level implementation of computer science education initiatives. Similar positions at the local level could support districts' expansion of course offerings and professional development.

All HS Offer

No

Tennessee does not yet require that all secondary schools offer computer science. The state can support the expansion of computer science courses by adopting policies that require schools to offer a computer science course based on rigorous standards, with appropriate implementation timelines and allowing for remote and/or in-person courses.

Grad Credit

Yes

In Tennessee, computer science can count as a mathematics credit for graduation.

IHE Admission

No

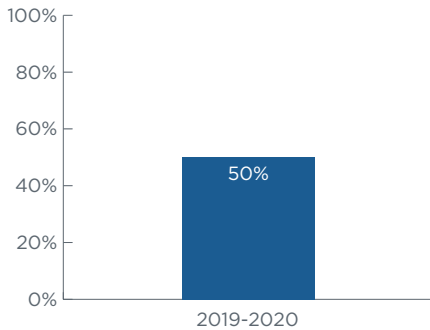
Tennessee does not yet allow computer science to count as a core admission requirement at institutions of higher education. Admission policies that do not include rigorous computer science courses as meeting a core entrance requirement, such as in mathematics or science, discourage students from taking 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.

Tennessee has CSTA chapters.

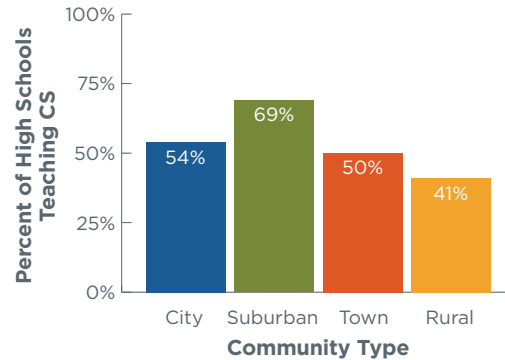


Computer Science Access and Participation in Tennessee

High Schools Teaching CS

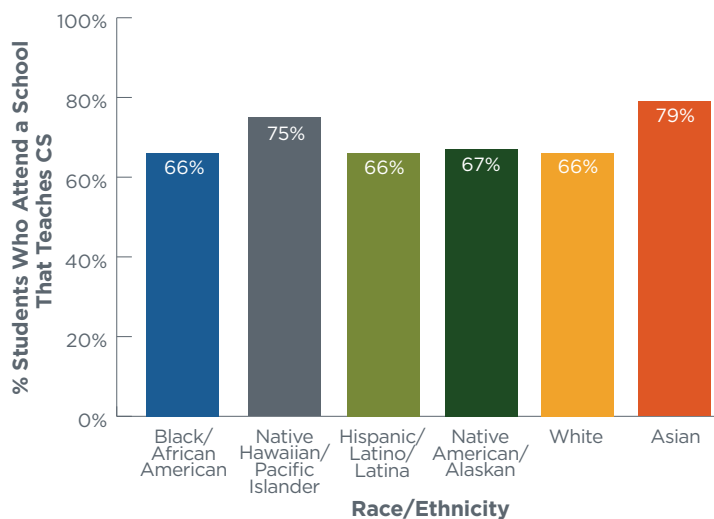


Percent of High Schools Teaching CS by Community Type

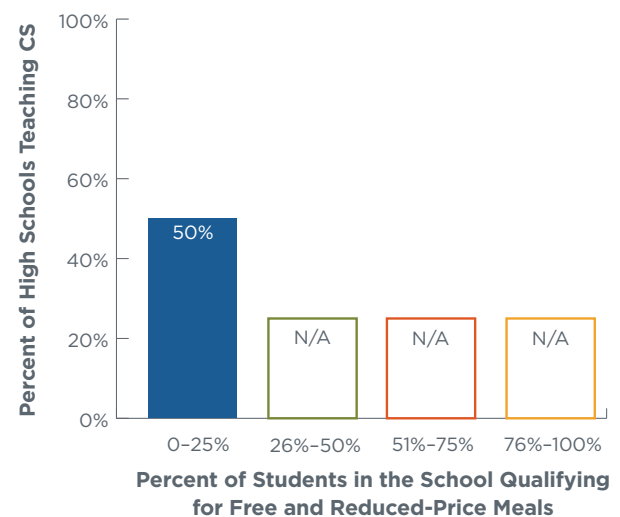


* Sources: The Conference Board and the National Center for Education Statistics

Race/Ethnicity and Access to Computer Science

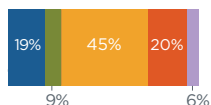


Income Level and Access to CS

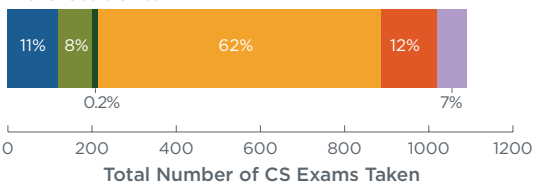


AP CS Participation by Race/Ethnicity and Gender

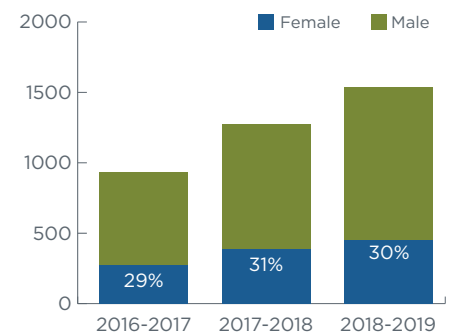
Female Students



Male Students



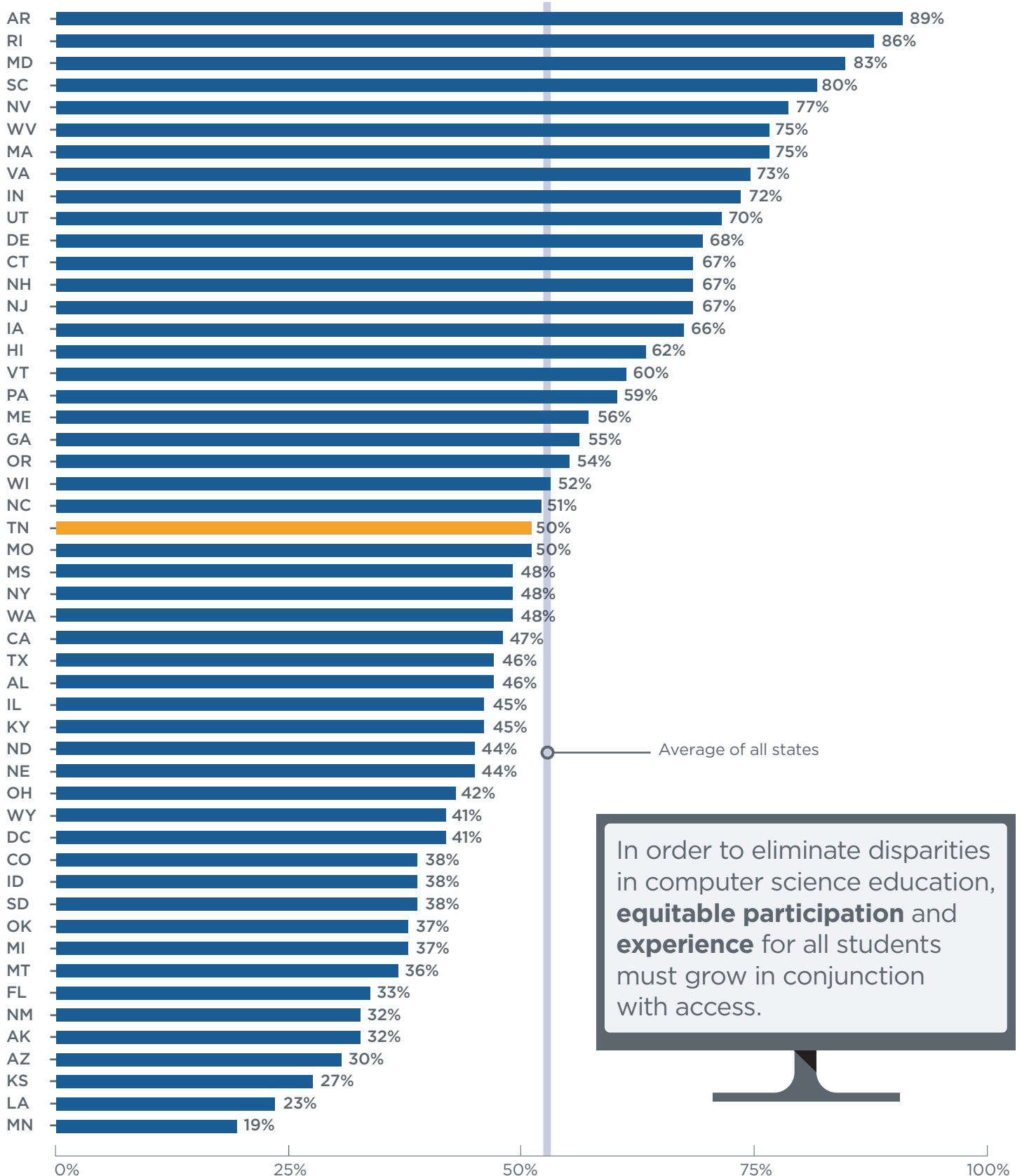
AP CS Student Participation



Black/African American students are 1.5 times less likely than their white and Asian peers to take an AP CS exam when they attend a school that offers it. Hispanic/Latino/Latina students are 1.3 times less likely than their white and Asian peers to attend a school that offers AP CS.



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

