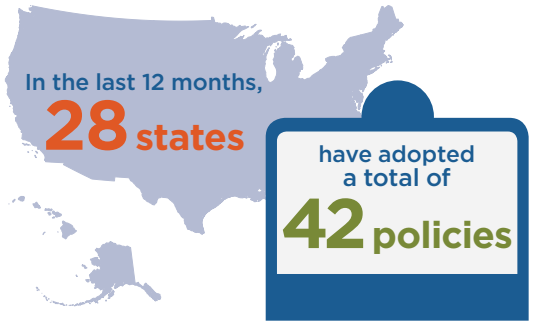
Texas
2020 State of Computer Science Education: Illuminating Disparities

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

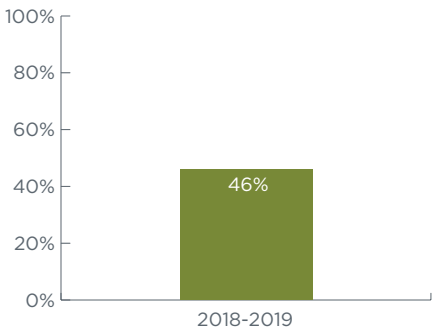
1. Create a state plan for K–12 computer science
2. Define computer science and establish K–12 CS standards
3. Allocate funding for CS teacher professional development
4. Implement clear certification pathways for computer science teachers
5. Create computer science preservice programs at IHEs
6. Establish 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

Texas Computer Science Policy

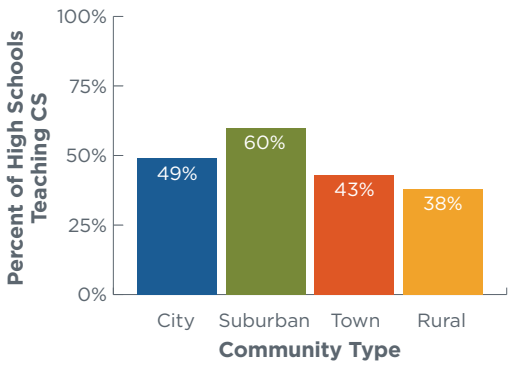
State Plan In Progress	Texas is in the process of creating a plan for K–12 computer science as required by HB 2984 (2019). A plan that articulates the goals for computer science, strategies for accomplishing the goals, and timelines for carrying out the strategies is important for making computer science a fundamental part of a state's education system.
Standards In Progress	The Texas Essential Knowledge and Skills (TEKS) at the high school level contain computer science standards, and HB 2984 (2019) directed the State Board to review and modify the K–8 TEKS for Technology Applications to include coding and computational thinking by December 31, 2020.
Funding Other	Although Texas does not yet provide dedicated state funding for computer science professional development, HB 3 and HB 963 (2019) consolidated all computer science (or technology applications) courses into CTE and allowed schools to receive weighted funding for students enrolled in those courses in grades 7–12. Texas can strengthen its computer science programs by creating specific opportunities to bring computer science to school districts, such as funding for rigorous professional development.
Certification Yes	In Texas, teachers with or without existing licensure can obtain an 8–12 certification by completing a state-approved teacher preparation program and passing certification exams.
Preservice Yes	The Texas Education Agency has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
CS Supervisor No	Texas 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 Yes	The Texas State Board of Education added computer science courses to the list of required offerings at high schools (19 TAC § 74.3) in 2014.
Grad Credit Yes	In Texas, AP Computer Science A, IB Computer Science Higher Level, or discrete math can count as a required mathematics course for graduation. Computer science can also count as an advanced science credit, and multiple course options can satisfy the foreign language requirement.
IHE Admission Yes	Computer science can count as the fourth mathematics credit required for admission at institutions of higher education in Texas.

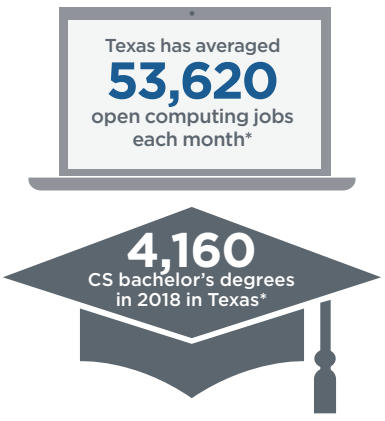
Texas is a member of the ECEP Alliance and has CSTA chapters.

High Schools Teaching CS



Percent of High Schools Teaching CS by Community Type

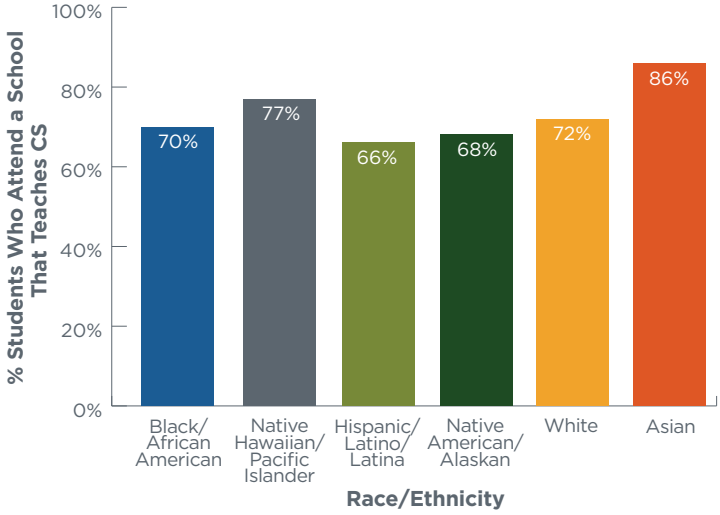




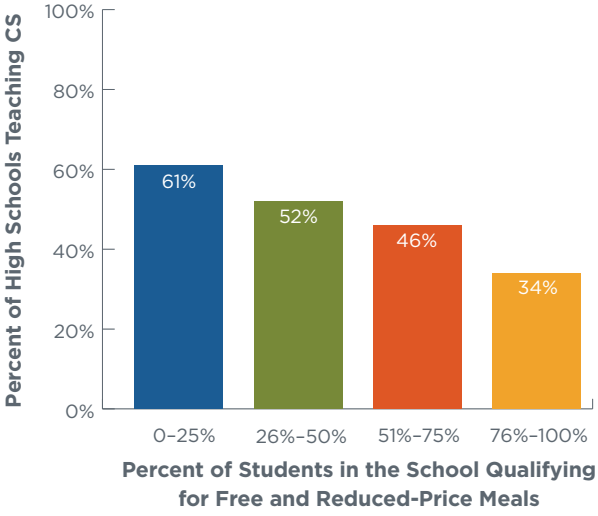
*Sources: The Conference Board and the National Center for Education Statistics

Computer Science Access and Participation in Texas

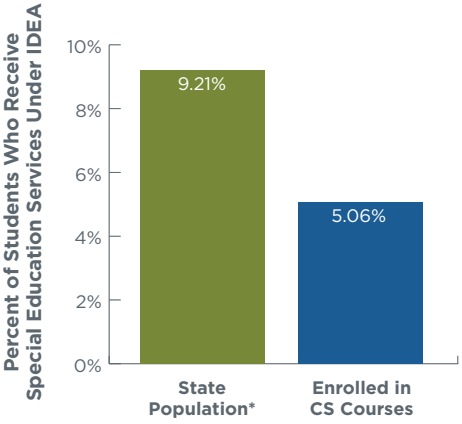
Race/Ethnicity and Access to Computer Science



Income Level and Access to CS

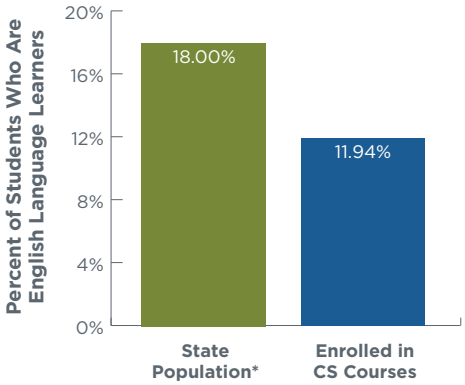


Students with Disabilities and Participation in CS



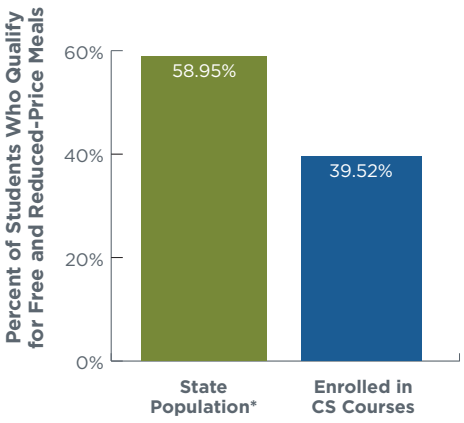
* U.S. Department of Education, Digest of Education Statistics Table 204.70, 2017–2018

English Language Learners and Participation in CS



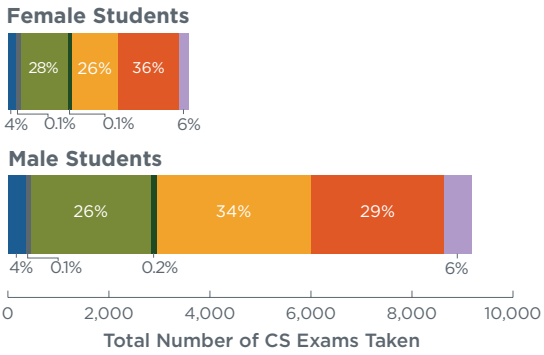
* U.S. Department of Education, Digest of Education Statistics Table 204.20, fall 2017

Economically Disadvantaged Students and Participation in CS

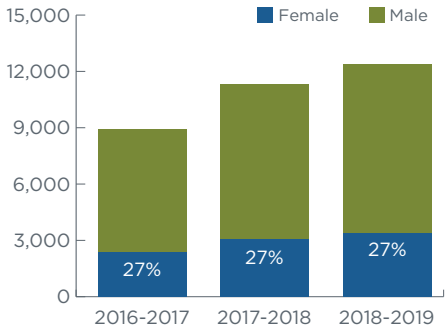


* U.S. Department of Education, Digest of Education Statistics Table 204.10, 2016–2017

AP CS Participation by Race/Ethnicity and Gender

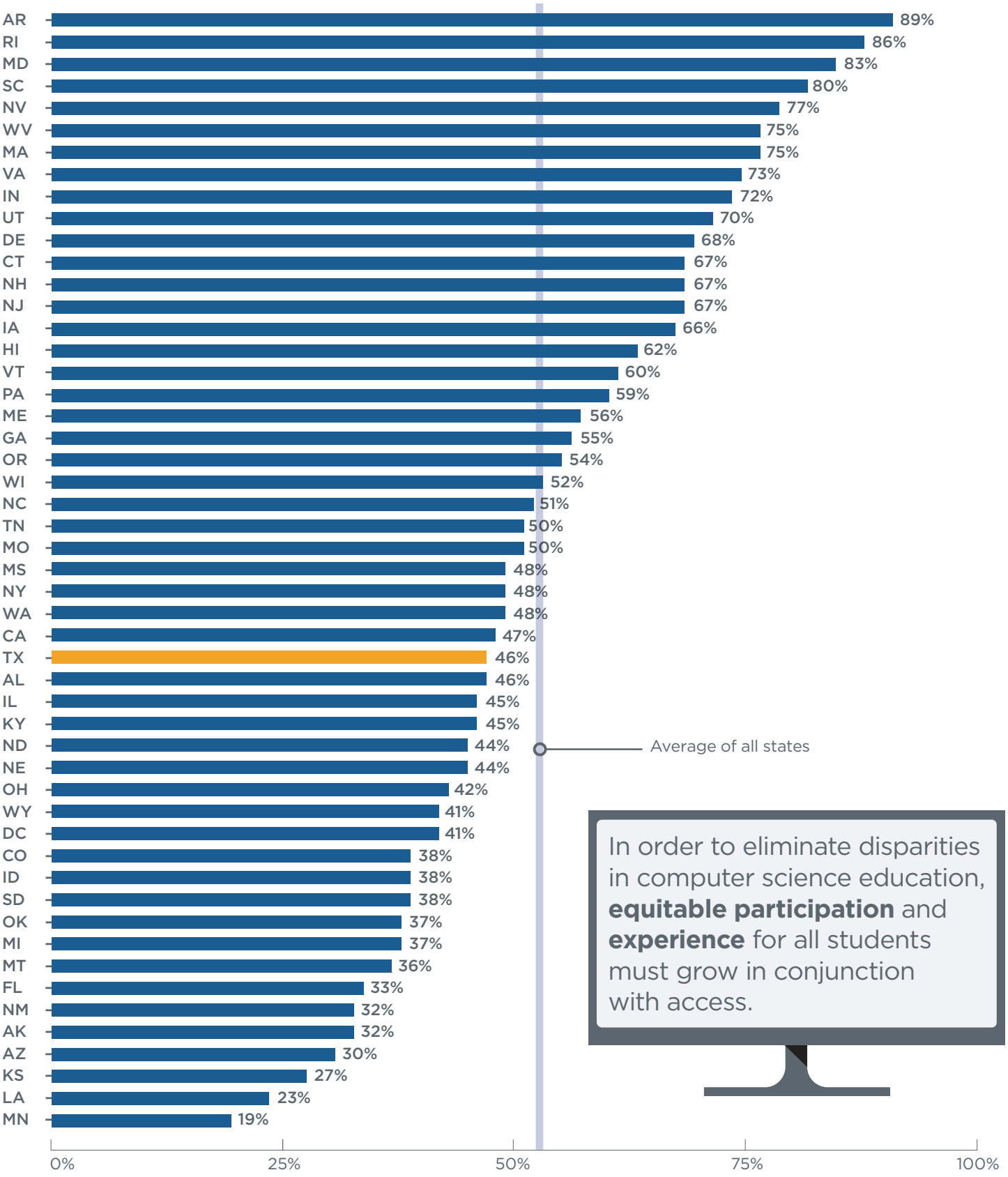


AP CS Student Participation



Native American/Alaskan students are 3.5 times less likely, Hispanic/Latino/Latina students are 3 times less likely, and Black/African American students are 6 times less likely than their white and Asian peers 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