Alabama

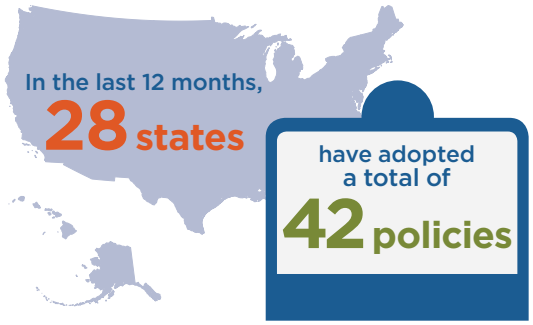
2020 State of Computer Science Education: Illuminating Disparities

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

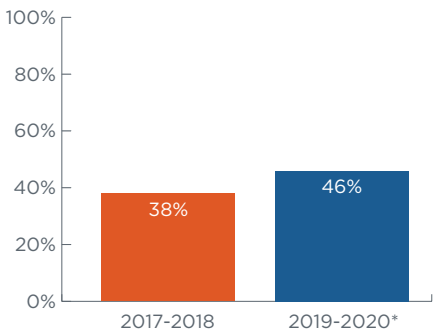
1. Create a state plan for K–12 computer science
2. Define computer science and establish K–12 CS standards
3. Allocate funding for CS teacher professional development
4. Implement clear certification pathways for computer science teachers
5. Create computer science preservice programs at IHEs
6. Establish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

Alabama Computer Science Policy

State Plan In Progress	The Alabama Governor's Computer Science Advisory Council made a series of policy recommendations in 2019, including goals and strategies, but these recommendations did not include timelines.
Standards Yes	Alabama adopted K–12 computer science and digital literacy standards in 2018. The "Equitable Access" Position Statement in the standards document includes examples of ways to broaden participation in computer science education, and the standards address concepts of equity, such as bias, accessible technology, and inclusivity.
Funding Yes	HB 187 (FY 2021) and SB 199 (FY 2020) appropriated $3.771M and $2.771M for CS education: $614K for the Middle School Programming Initiative, $300K for CS educator training, $1 and $2M for CS4AL, and $857K for the Technology in Motion Program to train K–12 teachers in computer science. HB 175 (FY 2019) appropriated $613K for the Middle School Programming Initiative, and an additional $300K was allocated for professional development. SB 129 (FY 2018) allocated $675K for the Middle School Programming Initiative.
Certification Yes	In Alabama, teachers with existing licensure can add 6–12 computer science as an additional teaching field by passing the Praxis CS exam. Teachers can also obtain a course-specific permit by completing an approved training or college credit for the specific course. State funding for computer science can support credentialing for teachers.
Preservice Yes	In September 2019, the Alabama State Board of Education passed Teacher Educator Standards for Computer Science, which are used to approve programs at institutions of higher education.
CS Supervisor Yes	The Alabama State Department of Education has an Education Specialist and an Educator Administrator for Digital Literacy and Computer Science.
All HS Offer Yes	Act 389 (2019) required all high schools, middle schools, and elementary schools to offer computer science by the 2020–2021 school year. The act required the State Department of Education to report the aggregate gender, racial, and socioeconomic diversity of students enrolled in high-quality computer science courses.
Grad Credit Yes	In Alabama, courses including AP Computer Science A or AP Computer Science Principles can count as a mathematics or science credit for graduation.
IHE Admission Yes	Computer science can count as a mathematics or science credit required for admission, as determined by each public institution of higher education in Alabama.

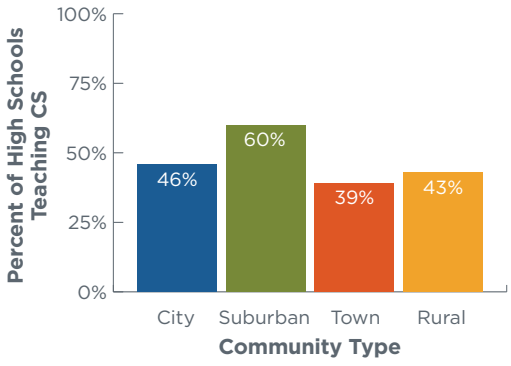
Alabama is a member of the ECEP Alliance, has a CSTA chapter, and Governor Kay Ivey is a member of the Governors' Partnership for K–12 Computer Science.

High Schools Teaching CS



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

Percent of High Schools Teaching CS by Community Type



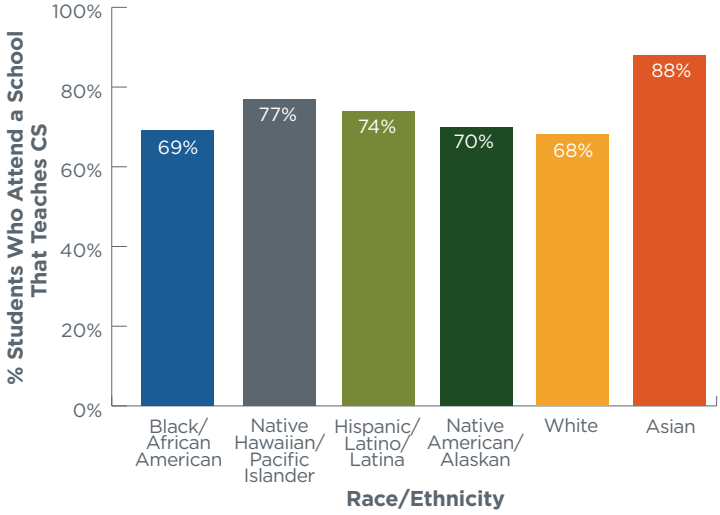
Alabama has averaged **4,620** open computing jobs each month*

739 CS bachelor's degrees in 2018 in Alabama*

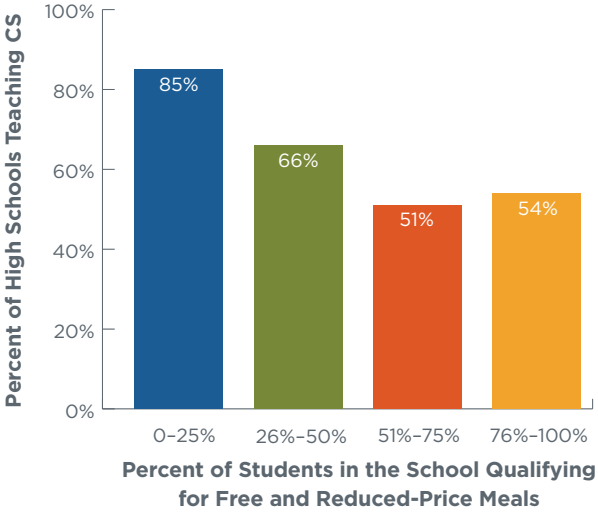
*Sources: The Conference Board and the National Center for Education Statistics

Computer Science Access and Participation in Alabama

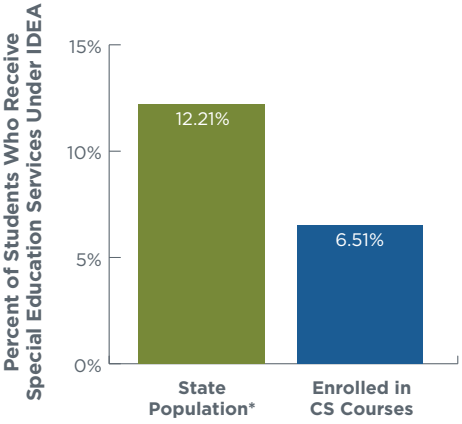
Race/Ethnicity and Access to Computer Science



Income Level and Access to CS

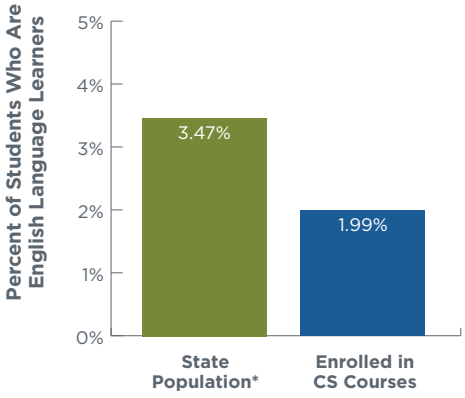


Students with Disabilities and Participation in CS



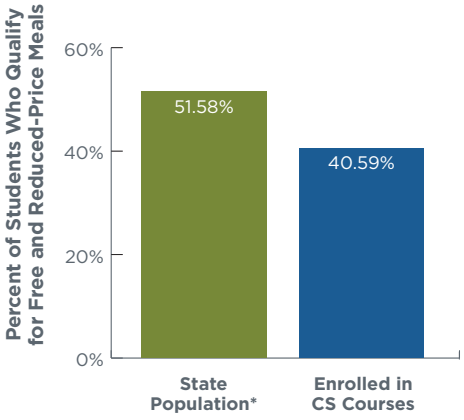
* U.S. Department of Education, Digest of Education Statistics Table 204.70, 2017–2018

English Language Learners and Participation in CS



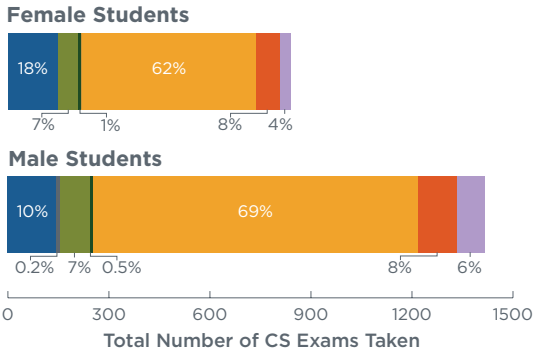
* U.S. Department of Education, Digest of Education Statistics Table 204.20, fall 2017

Economically Disadvantaged Students and Participation in CS

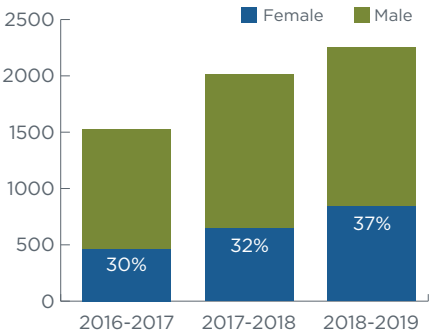


* U.S. Department of Education, Digest of Education Statistics Table 204.10, 2016–2017

AP CS Participation by Race/Ethnicity and Gender

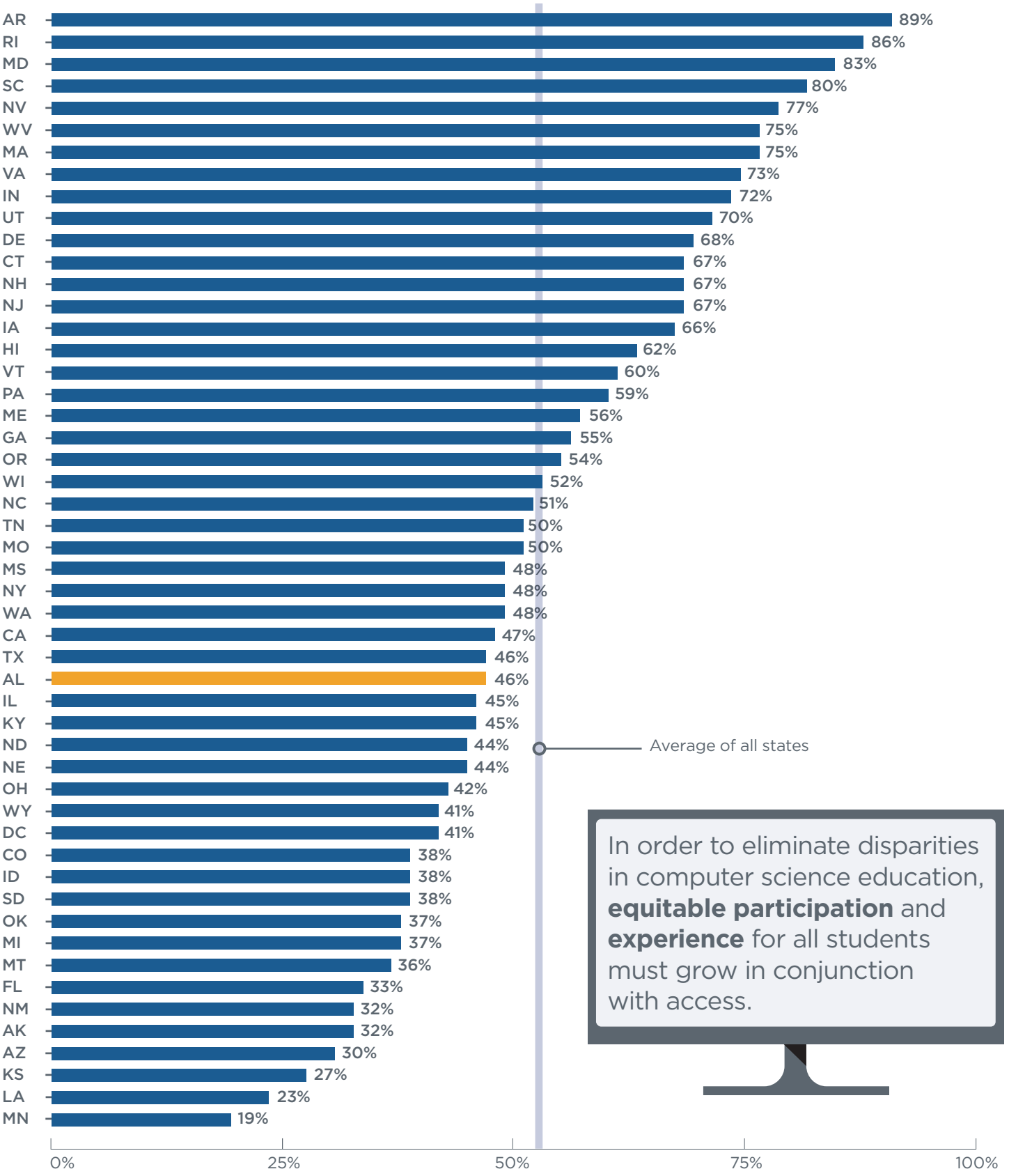


AP CS Student Participation



Hispanic/Latino/Latina students are 1.5 times less likely than their white and Asian peers to attend a school that offers AP CS. Black/African American students are 2.6 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