Arkansas

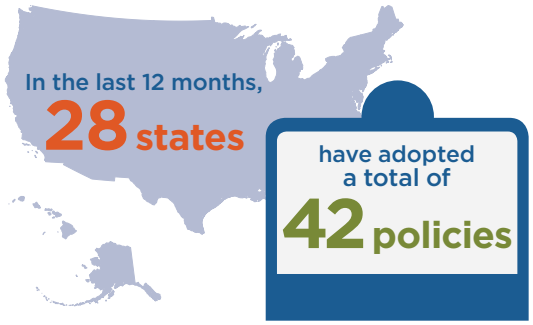
2020 State of Computer Science Education: Illuminating Disparities

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

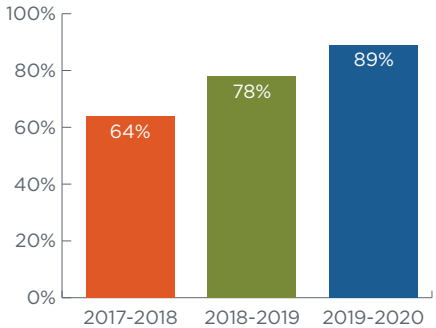
1. Create a state plan for K–12 computer science
2. Define computer science and establish K–12 CS standards
3. Allocate funding for CS teacher professional development
4. Implement clear certification pathways for computer science teachers
5. Create computer science preservice programs at IHEs
6. Establish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

Arkansas Computer Science Policy

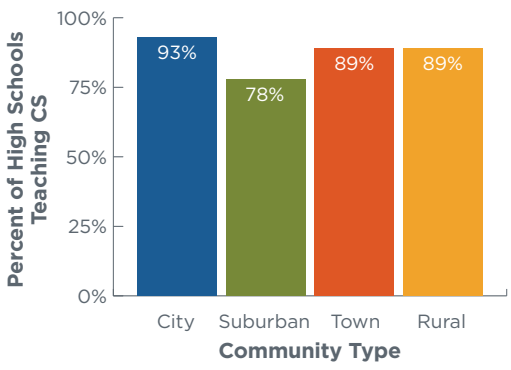
State Plan Yes	The Arkansas Department of Education developed a state plan for computer science education on recommendations from the Computer Science and Technology in Public School Task Force in 2016. In 2020, the Computer Science and Cybersecurity Force will release a new set of recommendations for the Department.
Standards Yes	Arkansas adopted K–8 computer science standards in 2015 and 9–12 standards in 2016. All students learn the K–6 standards and take a coding block in 7th or 8th grade.
Funding Yes	Act 154 (FY 2021), Act 877 (FY 2020), Act 243 (FY 2019), Act 1044 (FY 2018), and Act 189 (FY 2016 and 2017) allocated $2.5M annually for the Computer Science Initiative. One grant program for schools prioritizes programs that broaden participation in computer science courses.
Certification Yes	In Arkansas, teachers with existing licensure can add a 4–12 endorsement by passing the Praxis CS exam; teachers can also earn an initial license in computer science. Until the 2021–2022 school year, any teacher with a grade-appropriate license can obtain an approval code by completing one of the following: approved professional development, prior computer science teaching, coursework in computer science, or other department requirements. State funding for computer science can support credentialing for teachers.
Preservice Yes	Arkansas has approved secondary computer science preparation programs at several institutions of higher education and lists these institutions publicly. The state also requires all preservice elementary teachers to receive instruction in computer science education. ForwARd Arkansas scholarships are available for students studying to become licensed computer science instructors and commit to teaching in a ForwARd Community school district.
CS Supervisor Yes	The Arkansas Department of Education has an office of computer science with four staff members focusing on computer science, including the State Director of Computer Science Education. There are also multiple statewide computer science specialists.
All HS Offer Yes	Act 187 (2015) required all high schools to offer computer science by the 2015–2016 school year. Each school reports computer science enrollment by grade and race.
Grad Credit Yes	In Arkansas, any computer science course can count as a mathematics or science credit for high school graduation.
IHE Admission Yes	Any computer science course can count as a mathematics or science credit required for admission at institutions of higher education, which aligns with Arkansas's high school graduation policy.

Arkansas is a member of the ECEP Alliance, has a CSTA chapter, and Governor Asa Hutchinson is a member of the Governors' Partnership for K–12 Computer Science.

High Schools Teaching CS



Percent of High Schools Teaching CS by Community Type



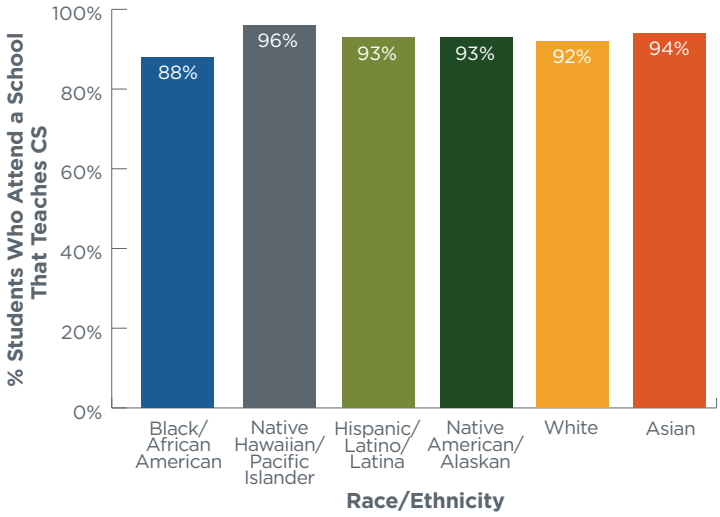
Arkansas has averaged **1,773** open computing jobs each month*

410 CS bachelor's degrees in 2018 in Arkansas*

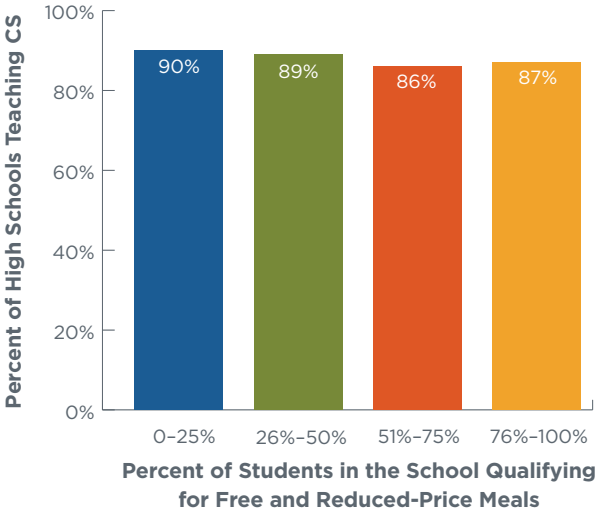
*Sources: The Conference Board and the National Center for Education Statistics

Computer Science Access and Participation in Arkansas

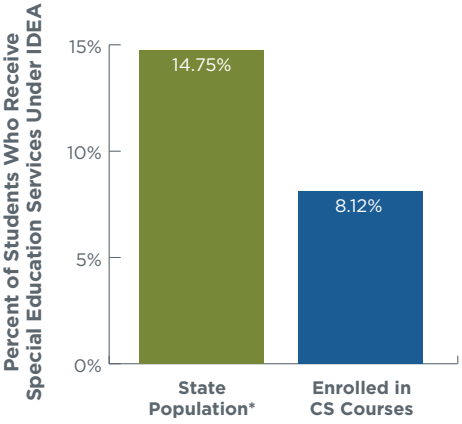
Race/Ethnicity and Access to Computer Science



Income Level and Access to CS

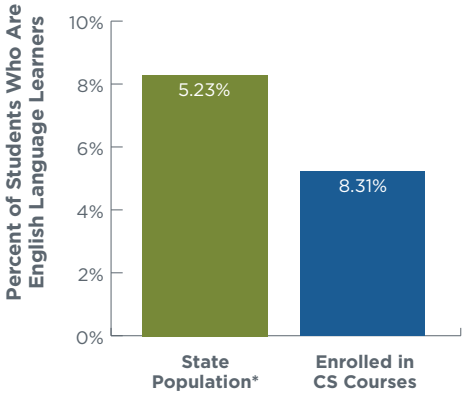


Students with Disabilities and Participation in CS



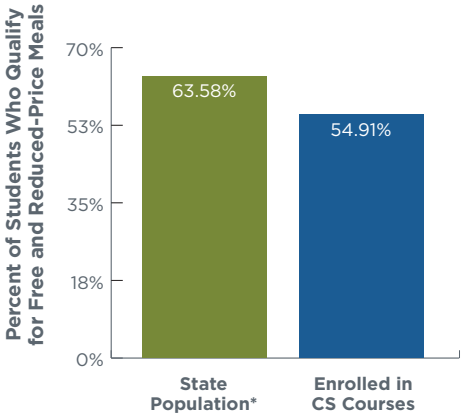
* U.S. Department of Education, Digest of Education Statistics Table 204.70, 2017–2018

English Language Learners and Participation in CS



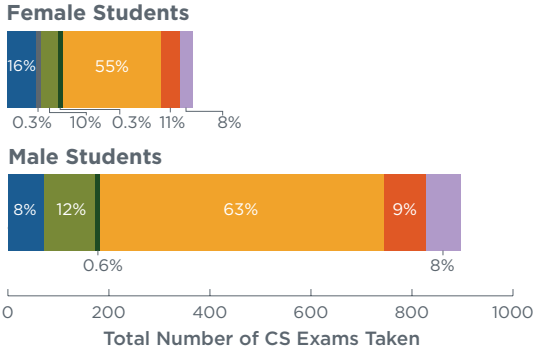
* U.S. Department of Education, Digest of Education Statistics Table 204.20, fall 2017

Economically Disadvantaged Students and Participation in CS

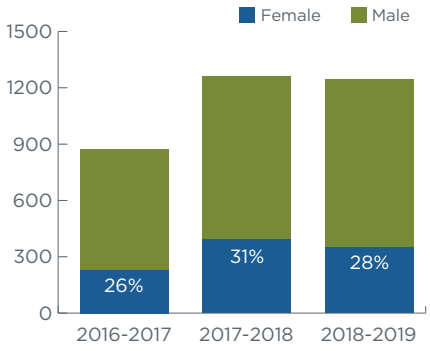


* U.S. Department of Education, Digest of Education Statistics Table 204.10, 2016–2017

AP CS Participation by Race/Ethnicity and Gender

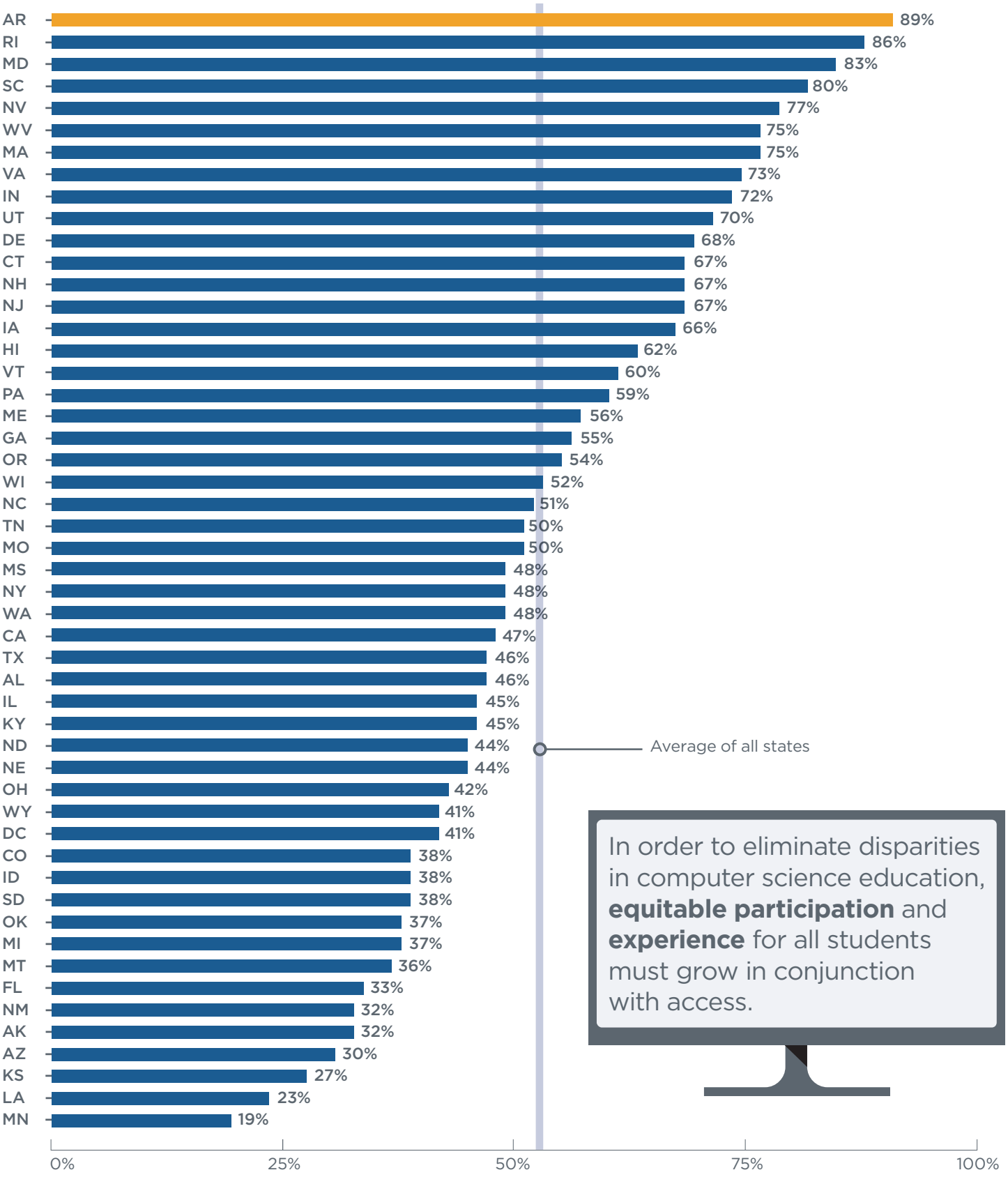


AP CS Student Participation



Students of all racial and ethnic groups have access to AP CS on par with their state population, but Native American/ Alaskan students are 1.5 times less likely, Hispanic/Latino/Latina students are 2 times less likely, and Black/African American students are 2.5 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