IOWA

2023 State of Computer Science Education

The rapid pace of technological advancement, as seen with the widespread integration of generative artificial intelligence (AI), underscores the need for foundational knowledge in computer science for all students. This report calls upon advocates to embrace the urgency of this matter and revamp school curricula to align with the demands of the 21st century, including requiring that all students learn computer science.

Currently, 57.5% of public high schools in the United States (U.S.) offer a foundational computer science class—an achievement marking the largest percentage growth in the last five years. Across the 35 states* where data is available, 5.8% of high school students are enrolled in foundational computer science. Even with growing access this growth, large disparities still exist, and we must continue to focus on eliminating participation gaps.
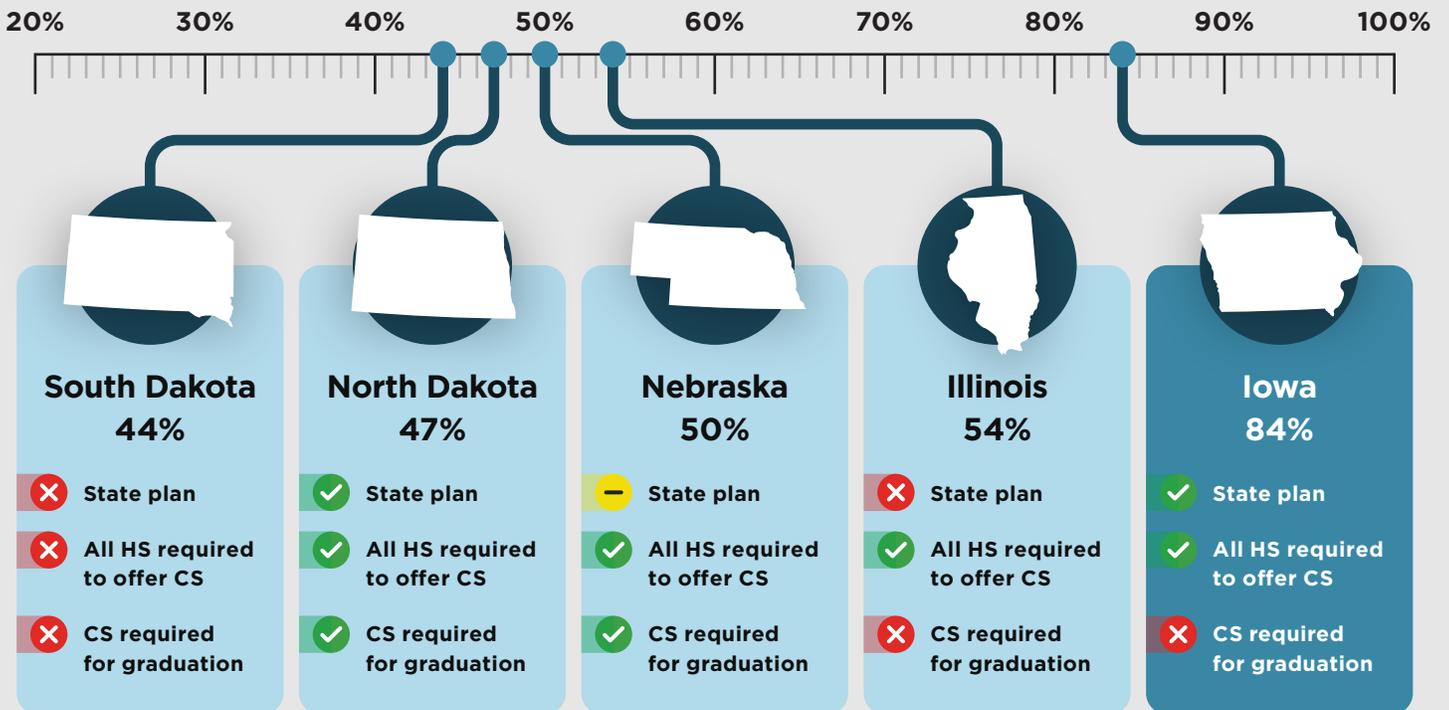
4,641
In 2023, IA averaged 4,641 open computing jobs each month

$91,730
These jobs have an average salary of $91,730

*AL, AR, AZ, CT, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MA, MD, MS, NC, ND, NE, NJ, NM, NV, NY, OK, OR, PA, RI, TN, TX, UT, VA, VT, WV, WI

Comparative Access to Computer Science Courses
(percentage of high schools offering)

20%   30%   40%   50%   60%   70%   80%   90%   100%

South Dakota 44%
- ❌ State plan
- ❌ All HS required to offer CS
- ❌ CS required for graduation

North Dakota 47%
- ✅ State plan
- ✅ All HS required to offer CS
- ✅ CS required for graduation

Nebraska 50%
- ➖ State plan
- ✅ All HS required to offer CS
- ✅ CS required for graduation

Illinois 54%
- ❌ State plan
- ✅ All HS required to offer CS
- ❌ CS required for graduation

Iowa 84%
- ✅ State plan
- ✅ All HS required to offer CS
- ❌ CS required for graduation

IOWA

Ten Policies to Make Computer Science Foundational

1.

Create a **statewide plan** for K–12 computer science

2.

Define computer science and establish standards for K–12 computer science

3.

Allocate funding for rigorous computer science teacher professional learning

4.

Implement **clear certification pathways** for computer science teachers at elementary and secondary levels

5.

Create university programs to **encourage all preservice teachers** to gain exposure to computer science

6.

Establish **dedicated computer science** positions in a state education agency

7.

Require that all schools offer computer science with appropriate implementation timelines

8.

Allow computer science to count toward a core graduation requirement

9.

Allow **computer science to satisfy an admission requirement** at higher education institutions

10.

Require that all students take computer science to earn a high school diploma

What Has Iowa Done to Advance Computer Science Education?

Iowa has funded computer science education annually since 2019, totaling over $3M after the 2023 legislative session.

The Iowa Department of Education developed a state plan for expanding access to computer science in 2022.

How Can Iowa Increase Opportunities for Students?

Iowa should adopt a graduation requirement for all high school students in computer science.
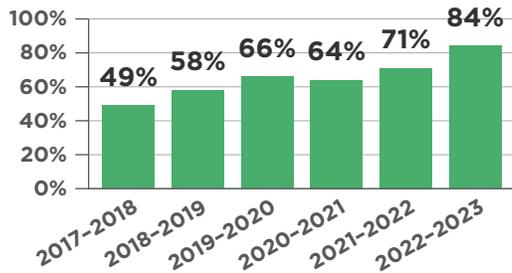
Iowa should require all preservice teachers to receive instruction in computer science education. This will ensure there are enough teachers prepared to teach computer science in every school.
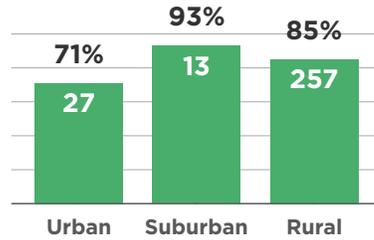
IOWA

Percentage of Public High Schools Offering Foundational Computer Science
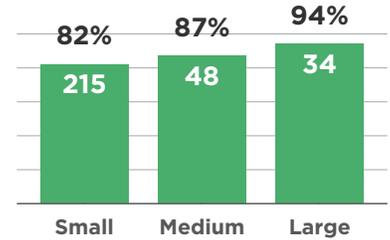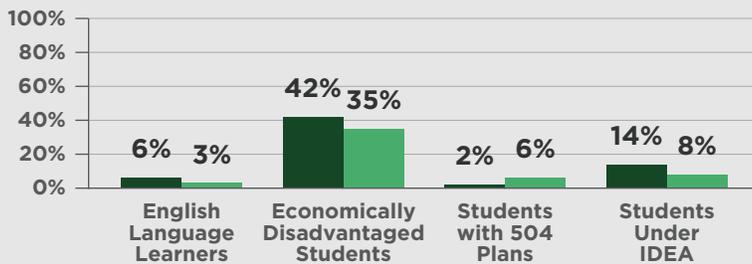
Access by School Year

- 2017-2018: 49%
- 2018-2019: 58%
- 2019-2020: 66%
- 2020-2021: 64%
- 2021-2022: 71%
- 2022-2023: 84%

Access by Geography*

- Urban: 71% (27)
- Suburban: 93% (13)
- Rural: 85% (257)

Access by School Size*

- Small: 82% (215)
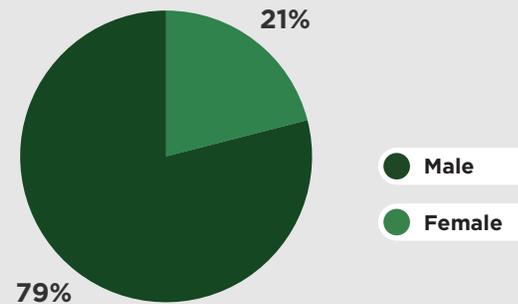- Medium: 87% (48)
- Large: 94% (34)

Data is from the most recent data school year 2022-2023

Participation in Foundational High School Computer Science by Student Demographics

Enrollment by Subgroup

- English Language Learners: 6% / 3%
- Economically Disadvantaged Students: 42% / 35%
- Students with 504 Plans: 2% / 6%
- Students Under IDEA: 14% / 8%

Enrollment by Gender

- Male: 79%
- Female: 21%

● Student Demographics 9–12
● Participation in Foundational Courses

5% of high school students took foundational computer science in 2022-2023

Enrollment by Race / Ethnicity

- Black / African American: 6% / 4%
- Hispanic / Latino / Latina / Latinx: 12% / 9%
- Native American / Alaskan: 0.3% / 0.3%
- Native Hawaiian / Pacific Islander: 0.4% / 0.2%
- Asian: 2% / 5%
- White: 75% / 78%
- Two or More Races: 4% / 4%
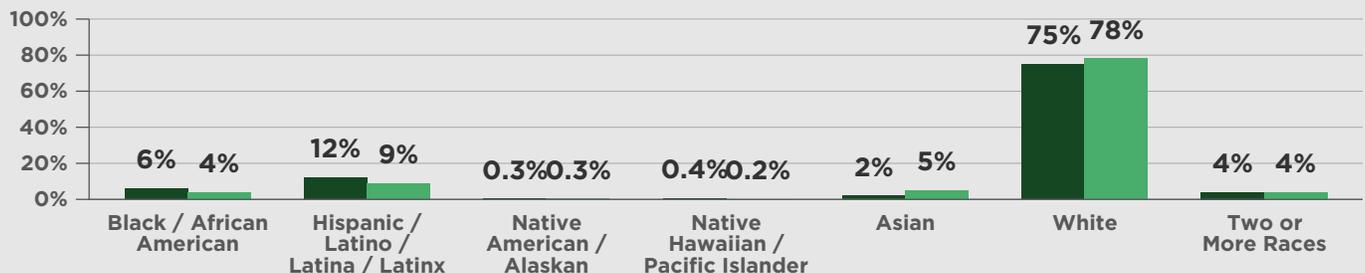
Hispanic students are 1.4 times less likely to take foundational computer science than their white and Asian peers

● Student Demographics 9–12
● Participation in Foundational Courses

UNITED STATES

Percentage of Public High Schools Offering Foundational Computer Science Nationally

57.5% — National Percentage Offering

State	Percentage
AR	99%
MD	99%
NV	96%
AL	95%
SC	94%
IN	91%
CT	84%
IA	84%
MA	83%
NJ	82%
NH	81%
RI	80%
KY	79%
MS	78%
WV	78%
UT	77%
VT	76%
VA	74%
HI	72%
GA	71%
NC	71%
PA	71%
ME	66%
OK	64%
OR	64%
TN	64%
WY	63%
OH	62%
WI	56%
MI	55%
CO	54%
IL	54%
TX	54%
AK	51%
MO	50%
NE	50%
NM	50%
NY	48%
WA	48%
ND	47%
CA	45%
DC	45%
SD	44%
FL	41%
DE	40%
ID	38%
AZ	36%
KS	36%
LA	35%
MT	34%
MN	28%