

Why Colorado business leaders want more kids in computer science classes

By Caitlin Hendee, *Denver Business Journal* | May 5, 2016



Many Colorado business leaders concerned about education have been pushing to arm students with the skills they need to succeed in the workforce (and to become the workers that employers need).

And lately, one key focus of that drive is to get more computer science classes into K-12 schools.

Nationally, just one in four schools teach computer programming. Out of Colorado's 485 high schools, students in only 55 of them took an AP Computer Science exam in 2015.

And of the 661 out of Colorado's 254,497 high school students who took the exam last year, just 72 qualified for a free and/or reduced lunch (a common measure of poverty), 67 were students of color and 57 were in rural schools.

Only 51 Colorado female students took the AP Computer Science exam last year — less than 0.05 percent of Colorado's female high school population.

The numbers paint a dismal picture for the state of computer science education in Colorado because they show that kids are not getting introduced to computer skills early enough, said [Angela Baber](#), director of STEM at the Colorado Education Initiative (CEI). (STEM stands for science, technology, engineering and math).

"We really need a comprehensive approach to this for our schools and students," Baber said. "Without that, we're not going to move the needle."

CEI — a nonprofit that funds initiatives and promotes innovation in Colorado schools — is working with the [Colorado Technology Association](#) (CTA), the National Center for Women & Technology and Oracle Academy on an initiative called "Compute Colorado."

Compute Colorado's goal is to increase the number and diversity of Colorado students who take computer science classes to prepare them for high-wage, high-demand jobs in technology.

"The demand for tech talent continue to grow [and] we still import a lot of our talent," said [Wendy Nkomo](#), chief operating officer at CTA. "The focus is on growing a local talent pipeline to address the needs today and the forecast growth for technology."

One of the prime strategies to do that is by bumping up the number of K-12 kids, especially kids in low-income and rural areas, who are taking a computer science class.

"Computational thinking and computer science are the foundation to growing the tech workforce for all industries," Nkomo said, adding that even workers outside technology must be tech-savvy if they are to compete for jobs. "Having an understanding means when I pick up my phone and am using an app, I start to think about what drives it, what enables it, rather than just using it."

It's also important to ensure kids will be safer when they come into adulthood, added [Alison Derbenwick Miller](#), vice president at Oracle Academy.

Oracle Academy — a program of tech giant [Oracle Corp.](#) (Nasdaq: ORCL) — provides free teacher training, coursework and curriculum and student workshops to schools around the world to support computer science programs and classes.

"When you think about how ubiquitous tech has come in how we engage with the world — we bank with technology, it's how we access medical records, everything's managed with computers — there's a risk if students aren't learning... that computers aren't magic, that people are programming them," Miller said. "There's a risk they'll be taken advantage of by people who do understand that. We owe it to our kids to give them the skills they need to be contributing adults."

[Greg Hessee](#), director of Colorado Legacy Schools at CEI, said although providing the right kind of equipment and coursework is important, it really comes down to the teachers.

"You don't need kids sitting in front of a computer all day to be computer literate," Hessee said. "One of the issues we face is not necessarily accessibility, it's access to quality educators. They're in high demand."

Hessee and other Colorado Legacy Schools' employees, along with Oracle Academy staff, work with 47 Colorado schools to train teachers on how to teach computer science framework, as well as orchestrate study sessions between students and real-world technology executives where teachers observe.

"It provides a modeling experience for teachers to see what an experienced person looks like in the field," Hessee said.

CTA also supported House Bill 1198 in the 2016 Colorado Legislative session. The bill — which passed both the state House and Senate with overwhelming bipartisan support and which Gov. John Hickenlooper signed into law in late April — gives high schools the ability to make computer science classes count towards core math or science credits.

Caitlin Hendee is digital producer and social engagement manager for the Denver Business Journal, is lead editor of the Morning Edition email newsletter and contributes to the "17th & Lincoln" blog. Email: chendee@bizjournals.com. Phone: 303-803-9226.