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Opinion: Too few Bay Area students have access to computer science courses

Despite growing up under the shadow of Apple and Google, children aren't learning essential skills

It's essential that today's students obtain basic computer science skills.
(Bay Area News Group File Photo)

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What exactly is computer science, and why is it important to our children's future?

According to the California Department of Education, computer science is much more than learning how to type, manipulate Excel spreadsheets, or play video games. Computer science is a theory and practice that allows you to program a computer to do what you want it to. It is a skill that teaches us how to use computers to create, not just to consume. Computer science is a tool that helps us tell a story or make something happen with technology. Most importantly, computer science is a discipline that emphasizes persistence in problem solving — a skill that is applicable across disciplines, driving job growth and innovation across all sectors of the workforce.

So why should we care about computer science? What does it have to do with our future and the economic mobility of our children? Since 2010, the information and communication technology job sector has grown by 36%, and the demand is increasing exponentially. There are currently more than 500,000 unfilled computing jobs nationally, 72,000 of which are in California (Conference Board, 2019). Moreover, over the next decade these jobs are expected to grow at twice the rate of all other occupations (BLS Employment Statistics, 2016-2026).

To solve this problem, it is increasingly important to engage students in computer science at a younger age. Exposure through a multidisciplinary approach to computational thinking, the connective power of networks and information systems, the informational potential of data processing and analysis, and the impacts of computing on culture and society will lead to a better understanding of computer science college and career paths. Statistics indicate that young women who take an Advanced Placement computer science course in high school are 10 times as likely to major in computer science in college. African American and Latino students are over seven times more likely. A benefit to being a computer science major is that 81% find jobs closely related to their fields.

Nationwide, 91% of parents want computer science education in their children's schools, yet even here in technology-abundant California, only 11% of principals believe that there is strong parent demand for more computer science options (Google/Gallup 2017). This disconnect exists in Silicon Valley as well. Too many students in the Bay Area grow up in the shadows of Google and Apple, but have never been exposed to a computer science class in their schools.

To bridge this gap and ensure that all students have the choice and encouragement to study computer science, in 2016 the Legislature passed and the governor signed legislation that required the state Superintendent of Public Instruction to convene an advisory panel to develop recommendations for a computer science strategic implementation plan. Last month, the state Board of Education adopted the Computer Science Strategic Implementation Plan after adopting the state's first-ever Computer Science Standards last year.

To guide the state's advancement of computer science education, Assembly Bill 20 (Berman), called for the creation of a California Computer Science Coordinator. The state budget, approved earlier this year, established and funded the new position. The California Computer Science Coordinator will lead statewide efforts in implementing the new computer science standards by developing a comprehensive plan to support teachers in learning how to teach computer science to promote computer science for all California students.

While the debate as to whether computer science is a math discipline or a science discipline (or both) will continue, what is clear is that computer science is a pathway to a good career. Given these recent developments in promoting computer science, it is critical to keep the momentum moving forward. Encourage your local school district to offer computer science coursework as part of the regular school day and during extended school hours. Encourage your child to explore computer science as an area of interest. Help us achieve the goal of providing access to computer science education for all students.

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