Expand Access to K-8 Computer Science Education in Maryland

Computer science is a necessary foundational subject for all Kindergarten to 12th-grade students that develops students' computational and critical thinking skills and teaches them how to create—not just use—new technologies. Given the rapid pace of technological advancement and artificial intelligence, the importance of a foundational understanding of computer science for all students is critical. However, for K-8 students in Maryland, access to computer science courses is limited. Every Maryland student must be equipped with the knowledge and skills to harness the power of computer science.

In 2019, House Bill 281 mandated that all high schools offer at least one high-quality computer science course. Since its implementation, Maryland has expanded access to courses, narrowing socially, culturally, and economically diverse enrollment gaps. Today, 99% of Maryland high schools offer computer science. However, while high schools have seen significant progress, HB 281 asked school systems to "make efforts" to provide computer science instruction in grades K-8. While these voluntary efforts have moved us forward, just one-quarter of Maryland public elementary schools deliver at least ten hours of computer science instruction annually.

Maryland must expand K–8 computer science education to prepare students and broaden equitable participation. We call on our Maryland leaders to pass Senate Bill <u>SB</u> <u>980</u> to extend the high school computer science requirement to require instruction in computer science education from Kindergarten to 8th grade.

The significance of early exposure to computer science cannot be overstated. Research has shown that introducing computer science in the early years has a profound and lasting impact on a student's creative thinking, mathematical skills, metacognitive skills, reasoning skills, spatial skills, student achievement¹, executive functioning², and literacy³. By providing this foundation, we are setting the stage for lifelong learning.

The post-pandemic landscape has unveiled glaring inequities in education along racial and economic lines. Early access to computer science education is essential to combat disparities⁴⁵. An early investment in comprehensive computer science education can level the playing field, ensuring that every student, regardless of their background, has access to the skills and knowledge needed to thrive in the 21st-century workforce.

We, the undersigned, urge you to take bold action to support this critical initiative. Together, we can make a lasting impact on the lives of all Maryland public school students.

¹ <u>The Cognitive Benefits of Learning Computer Programming: A Meta-Analysis of Transfer Effects</u>

² Coding in Primary Grades Boosts Children's Executive Functions

³ <u>Supporting Literacy with Coding</u>

⁴ Career ambitions 'already limited by age of seven'

⁵ U.S. Students' Computer Science Participation Lags Interest



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