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2020 Momentum of Computer Science in Virginia

RICHMOND, VA: Computer science education in Virginia has and continues to make massive strides, even while overcoming obstacles presented during the last year, as illuminated in two reports released during October.

Each year, CodeVA is required by law to submit a data report to the Virginia General Assembly on the state of teacher professional development programs. Meanwhile, a joint national report, titled "2020 State of Computer Science Education: Illuminating Disparities," is released annually by the National Computer Science Teachers Association (CSTA), Code.org and the Expanding Computing Education Pathways Alliance (ECEP Alliance). CodeVA is a member and partner of each of these national groups. Both reports show gains for Virginia students and teachers in the state's move towards complying with the mandate legislation passed in 2016 that added Computer Science to the Standards of Learning and Standards of Quality for all public schools as a required subject for all students.

"We're very proud of the work Virginia teachers and school divisions have done in bringing computer science literacy to students," said Virginia Secretary of Education Atif Qarni, of the reports' findings. "And we're very proud that Virginia's computer science literacy initiative, a partnership between the Virginia Department of Education and CodeVA, continues to serve as an innovative national model in the CSforALL movement."

As referenced in CodeVA's 2019-2020 State Report and the 2020 State of Computer Science Education: Illuminating Disparities report released today, CodeVA's state training effort, which provides free teacher professional development and school division resources through CodeVA, provided more than 20,000 hours of virtual professional learning to more than 1,000 teachers from over 300 schools across the state. These educators, according to the report, have nearly all reported that in spite of new challenges brought on by covid-19 and virtual instruction they plan to implement what they learned during the current school year.

In that seven year period, Virginia has adopted seven of nine policies recommended by the Code.org Advocacy Coalition, which includes CSTA and ECEP Alliance. The remaining two, adoption of an overall state plan for computer science, and allowance for computer science high school courses to count toward university admissions, remain outstanding goals. Though Virginia did recently adopt its first STEM plan for K-12 education, after a year-long effort by the Virginia STEM Commission, of which CodeVA was a member.

Of the nine recommended policy goals, Virginia was the first in the nation to adopt mandatory computer science education requirements for all students with passage of a law in 2016 that established grade-level Standards of Learning for computer science. These standards are required from kindergarten to eighth grade. Middle and high school elective courses are not required, but when taught are required to adhere to Standards of Learning for these classes.

"Virginia's computer science education initiative has taken a strategic approach since the start," said Chris Dovi, CodeVA's executive director. "By exposing all students early to computer science and computational thinking concepts early, as early as kindergarten, the goal is to spark interest and excitement about computer science that will carry through to high school and into career choices that these students make as they grow up.

"As teachers begin integrating CS in their classroom, we can expect to see continued gains in the number of students - but also in the diversity of students - pursuing CS in high school and higher education as evidenced by the information provided by these two reports."

Other notable achievements during the past year in Virginia include the receipt of two National Science Foundation grants by CodeVA, and the addition of a major private funding partner, Amazon Future Engineer, which in January pledged funding to CodeVA of \$3.9 million over three years. That funding, paired with other state and private resources, are targeted toward the creation of the CS-Ready School program, currently in its pilot phase in collaboration with 19 Virginia schools, as a tool to assist schools coordinating and measuring their computer science implementation efforts..

The two NSF-funded grants, which total nearly \$5 million, both focus on equitable access to computer science education for students of diverse racial, cultural, and socioeconomic backgrounds, and both involve creation of new culturally-responsive tools, curricula and strategies for integration of computer science in elementary classrooms and in middle school social science classrooms.

About CodeVA: CodeVA is a non-profit that partners with schools, parents, and communities to bring equitable CS education to all of Virginia's students based in Richmond, VA. Since 2014, CodeVA has provided no-cost professional development for Virginia teachers. CodeVA's direct student programs serve students in the Richmond region and statewide, and its advocacy has helped define Virginia's CS K-12 landscape. Learn more at codevirginia.org.