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NCSBEE Voice

Advancing Elementary STEM

Washington state hosts innovative, growing companies in every industry whose demand for talent has far outstripped local supply. The jobs they create require postsecondary STEM credentials or STEM literacy, but Washington students have not been adequately or equitably prepared for these opportunities. Students of color, rural students, students living in poverty, and girls lack access or face barriers to these pathways.

As I engaged in some of the policy response undertaken since the mid-2000s, I have seen the work evolve. Conversations 20 years ago on math focused on reducing postsecondary remediation and have since moved toward the skills needed for success in K-12 and postsecondary pursuits. Similarly, science discussion once focused on college readiness, subject-matter content, and scientific method. That focus has shifted to mastery-based approaches, scientific and engineering practices, crosscutting concepts, and core ideas that bridge disciplines.

Throughout this period, policymakers have identified organizations and voices to help tackle STEM education challenges, including Governor Inslee's STEM Education Innovation Alliance, which developed a STEM Report Card and, more importantly, brought education leaders, business, and nongovernmental organizations around one table. The alliance backed K-12 science teacher training and professional learning, scholarship programs for recent high school graduates, and a host of policies to support postsecondary STEM.

Washington has also sought to improve access to math and science coursework in high school, added requirements for graduation, supported interdisciplinary coursework, and pushed for more technology and computer science

education. As a result, we have seen more Washington students enrolling in and completing STEM degrees and a 46 percent reduction in math remediation over the past decade.

Now we are highlighting a long-standing, systemic problem: Washington's K-5 students have widely disparate levels of access to science learning experiences, with many spending little to no instructional time on science generally, let alone in experiences aligned to state-adopted standards and laws. This seriously impedes these students' foundational learning, STEM identity and mind-set, academic progress, and future opportunities.

Washington sees integration of science with other subject areas as a key strategy to advance equitable access to science learning. The Office of Superintendent of Public Instruction (OSPI) has launched a project that supports 140 elementary teachers and 110 leaders through professional learning and collaboration to explore and apply integration flexibly. It includes school and district pilot teams that implement common units at each grade level.

The state board added equitable access to elementary science to its legislative platform for 2022 and is collaborating with OSPI on other measures and supports. For example, the board is adapting its annual collection of district data to include instructional time on science in elementary grades.

Our state's passion for industry, diversity, and ecology have made the career and innovation opportunities vast. Bringing high-quality STEM to elementary students, with progression to their middle and high school years, is essential for our state's continued success. The greatest role for our board in this work is as advocates and conveners of public and private sector partners. ■

* Former board member Jeff Estes and OSPI Associate Director of Elementary Science, Learning, and Teaching Kimberley Astle helped with the development of this column.