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LEGISLATIVE EDUCATION STUDY COMMITTEE
BILL ANALYSIS
54th Legislature, 1st Session, 2019

Bill Number	<u>SJM9</u>	Sponsor	<u>Candelaria/Sariñana</u>
Tracking Number	<u>.212676.1</u>	Committee Referrals	<u>SRC/SEC</u>
Short Title	<u>Study Expanding Computer Science Ed</u>		
Analyst	<u>Ochoa</u>	Original Date	<u>2/14/19</u>
		Last Updated	<u></u>

BILL SUMMARY

Synopsis of Joint Memorial

Senate Joint Memorial 9 (SJM9) would request the Public Education Department (PED) to convene a taskforce comprised of a variety of stakeholders to study a strategic plan to expand and implement computer science education in elementary and secondary schools.

FISCAL IMPACT

Memorials do not carry appropriations, however PED would need to dedicate time and personnel to implement the provisions of SJM9.

SUBSTANTIVE ISSUES

SJM9 notes 21st century skills are addressed by computer science coursework, therefore computer science concepts should be introduced early for students to be aptly prepared for college and career. Additionally, the memorial notes the state requires a comprehensive implementation plan for computer science standards to be implemented from kindergarten through 12th grade.

SJM9 would request PED to convene a computer science taskforce consisting of representation from PED, the computer science industry, educational nonprofit organizations, the New Mexico School Superintendents' Association, the governor's office, the Higher Education Department (HED), legislators, computer science professionals from institutions of higher education, colleges of education, and the statewide association of computer science teachers. The taskforce would develop a strategic plan that would include a statement of purpose, a needs-assessment of the current status of computer science coursework in New Mexico, a five-year implementation timeline, professional learning opportunities for teachers, an evaluation process, and methods for implementing the plan systemically and sustainably. The plan would be presented to LESC and made publicly available.

New Mexico Computer Science Standards. The October, 30, 2018 issue of the *New Mexico Register* contained a proposed new rule to adopt New Mexico Science Standards. The proposed

rule would require school districts and charter schools who teach computer science to adhere to the adopted standards. The proposed standards were published by the Computer Science Teachers Association (CSTA) and the Association for Computing Machinery. If adopted, the new standards would be effective July 1, 2019.

The standards are designed to introduce computer science concepts in computing systems; networks and the internet; data and analysis; algorithms and programming; and impacts of computing. As early as kindergarten, students in computer science-related lessons should be able to describe basic hardware and software problems or write programs with simple sequences and loops to express ideas. In third through fifth grade, the standards build on the foundational concepts and ask students to perform higher order critical thinking, like describing real-world cybersecurity issues and organizing and presenting data to highlight relationships and support a claim. In sixth through eighth grade, the standards evolve in complexity to incorporate more design elements, asking students to systematically identify and fix issues in computing devices, collect and transform data to make it more useful and reliable, and design programs collaboratively with a development team. Ninth and 10th grade students would be responsible for fully understanding complex computer science principles, and the standards include an optional level for 11th and 12th grade students designed to prepare students for a career in a computer science-related field.

Implementation. Because the CSTA computer science standards would apply to all courses in which computer science is taught, school districts and charter schools wishing to offer computer science courses may be required to make significant investments in professional development and instructional materials.

Vertical Alignment. Students in New Mexico are not currently required to take computer science courses or curricula. However, the CSTA standards are vertically-aligned to build on foundational concepts as a student progresses through school. The standards are designed to increase in difficulty based on a student's grade level rather than skill level, creating the assumption that a student taking an introductory computer science course in ninth grade already has a fairly deep understanding of computer science concepts.

RELATED BILLS

HB 341, Computer Science Development Grant Program
HB 114, NM Tech Supercomputing Challenge Program
SB 310, Supercomputing Challenge

SOURCES OF INFORMATION

- LESC Files

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