

**LEGISLATIVE EDUCATION STUDY COMMITTEE
BILL ANALYSIS**

Bill Number: *SB 161a

51st Legislature, 2nd Session, 2014

Tracking Number: .196006.1

Short Title: Science Early Education Program

Sponsor(s): Senator Mary Kay Papen and Representatives W. Ken Martinez and Bill McCamley

Analyst: Ian Kleats

Date: February 19, 2014

AS AMENDED

The Senate Education Committee amendments make the Science Early Education Program based solely on the incorporation of physics into the sixth through eighth grade curriculum by removing references to computer programming and chemistry.

Original Bill Summary:

SB 161 adds a new section of the *Mathematics and Science Education Act* in the *Public School Code* to create the:

- Science Early Education Program as a five-year pilot project based on three-year student cohorts that incorporates hands-on, age-appropriate physics, computer programming, and chemistry education into grades 6-8; and
- Science Early Education Fund to financially support the pilot.

Among its provisions, the bill requires that the program:

- provide professional development and teaching materials to teachers to introduce:
 - physics curricula for grades 6 through 8;
 - computer programming curricula into grades 7 and 8; and
 - chemistry curriculum into grade 8; and
- be designated for “high-poverty public schools,” which are defined as having 85 percent or more of students eligible for free or reduced-fee lunch at the time of application;

Other provisions of SB 161 require the Public Education Department (PED) to:

- administer the program and contract for the professional development and teaching materials to teachers;
- select four schools that are based in regions of the state that are distinct in their locations and population densities;

- establish reporting and evaluation requirements for participating schools, including student and program assessments; and
- provide interim and final reports annually to the Legislature and the Governor on the efficacy of the program.

SB 161 also makes the following requirements and allowances for school districts, participating schools, and participating students:

- allows school districts to apply on behalf of their schools;
- requires PED to select four schools for participation in the pilot;
- requires that participating schools provide one-half of funding for the program;
- requires participating students to be evaluated at the beginning of the program (see “Technical Issues,” below); and
- requires that students’ progress be measured through standardized assessments in science and mathematics at the end of grades 6-8.

Provisions relating to the Science Early Education Fund require that:

- PED administer the fund to carry out the purposes of the Science Early Education Program;
- PED seek public and private grants and donations for the program;
- allows PED to expend up to 10 percent of the fund to administer the program (see “Technical Issues,” below); and
- fund balances revert to the General Fund at the end of the program, unless otherwise specified by the terms of a grant or donation.

*SB 161 contains an emergency clause.

Fiscal Impact:

\$110,000 is appropriated from the General Fund to the Science Early Education Fund for expenditure in FY 14 through FY 19.

Fiscal Issues:

The Legislative Finance Committee (LFC) Fiscal Impact Report (FIR) for SB 161 suggests it is unclear whether the appropriation is sufficient for the bill’s various provisions, including PED’s administration of the program and contracts with an organization to provide teacher professional development and teaching materials.

SB 161 requires at least eight standardized assessments per participating student, which are comprised of the pre-program evaluation and assessments at the end of grades 6, 7, and 8 for both math and science. It is unclear whether the development, grading, and administering of these assessments will be funded through schools’ grant awards, by the PED’s administrative expenses, or other sources.

Technical Issues:

On Page 2, line 24 through Page 3, line 1, SB 161 requires that students participating in the program shall be evaluated at the beginning of the program. However, the program is a five-year

pilot that fully covers at least three student cohorts. It is unclear how two of those cohorts would be evaluated at the beginning of the program itself when those students are in grades 4 and 5. As a result, the sponsor may wish to offer a clarifying amendment changing “beginning of the program” to “beginning of their program participation.”

On Page 3, line 25 through Page 4, line 1, SB 161 allows PED to expend up to 10 percent of the Science Early Education Fund to administer the program. This language could raise the following concerns:

- (1) Money from grants and donations may only be expended in accordance with the terms of the grant or donation, which might not provide for administrative expenses.
- (2) As written, the language appears to allow PED to expend money from the fund for administrative expenses multiple times, so long as each individual expenditure is less than or equal to 10 percent of the fund balance at that time. This could allow PED to expend more than 10 percent of the fund’s receipts for program administration.

To address the issue raised by (1), the sponsor may wish to consider amending that language to include the phrase, “unless otherwise specified by the terms of a grant or donation.”

To address the issue raised by (2), the sponsor may wish to consider amending this language to mirror provisions of other targeted programs, such as K-3 Plus, which limit expenditures for program administration to a percentage of appropriations or other fund receipts.

Substantive Issues:

CS/HB 2 et al., *General Appropriations Act of 2014*, appropriates \$2.0 million dollars to PED for the science, technology, engineering and mathematics (STEM) initiative. This appropriation includes \$500,000 for professional development of mathematics and science teachers statewide.

Background:

New Mexico Science Content Standards, Benchmarks, and Performance Standards

The current science standards include science content standards, benchmarks, and performance standards, that:

- specify benchmarks for each of three grade bands (K-4, 5-8, and 9-12);
- articulate grade-specific performance standards, describing how students will demonstrate mastery of each benchmark at each grade; and
- are organized into three strands:
 - Strand 1: Scientific Thinking and Practice: to understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically;
 - Strand 2: Content of Science for:
 - *Physical Science* to understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy;

- *Life Science* to understand the properties, structures, and processes of living things and the interdependence of living things and their environments; and
 - *Earth and Space Science* to understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems; and
- **Strand 3: Science and Society:** to understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by individuals and societies.

In 2005, the Thomas B. Fordham Institute published its annual *The State of State Science Standards*, a report that evaluated K-12 science standards nationwide, and gave each state's science standards a letter grade of A-F. In this report, New Mexico was one of seven states to receive an "A" – an improvement from the "F" the state received in 2000.

In 2007, legislation was enacted to create the Math and Science Bureau in PED and a statewide Math and Science Advisory Council composed of 12 members appointed by the Secretary of Education for staggered terms of four years.

In 2011, legislation was enacted to temporarily suspend, for school year 2011-2012, the statutory requirements that:

- PED, school districts, charter schools, and state educational institutions administer certain student assessments; and
- students demonstrate competence through an exit test or portfolio in order to graduate.

According to the *New Mexico Standards-based Assessment 2011-2012 Technical Report*, the New Mexico Standards-based Assessment in science was administered to students in grades 4, 7, and 11 in the spring of 2012. The purpose of the standards-based assessment in science is to measure students' achievement as articulated by New Mexico Assessment Standards, which are a subset of the broader New Mexico Content Standards with Benchmarks and Performance Standards. For school year 2011-2012, the PED website only posted standards-based assessment data for students in the subjects of reading and math.

Committee Referrals:

SCC/SEC/SFC

Related Bills:

CS/HB 258 *Science & Math Teacher Development*
 HM 19 "*NM STEM Education Week in the House*"
 SM 38 "*NM STEM Education Week*"