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FISCAL IMPACT REPORT

ORIGINAL DATE 2/1/22

SPONSOR Lujan/Herndon LAST UPDATED _____ HB 115

SHORT TITLE School STEM Pilot Program SB _____

ANALYST Liu/Taylor Garcia

APPROPRIATION (dollars in thousands)

Appropriation		Recurring or Nonrecurring	Fund Affected
FY22	FY23		
	\$5,000.0	Recurring	General Fund

(Parenthesis () Indicate Expenditure Decreases)

Relates to SB32, SB195
 Relates to Appropriation in the General Appropriation Act

SOURCES OF INFORMATION

LFC Files

Responses Received From

Higher Education Department (HED)
 New Mexico Institute of Mining and Technology (NMT)

No Response Received

Public Education Department (PED)
 New Mexico Highlands University (NMHU)
 Western New Mexico University (WNMU)

SUMMARY

Synopsis of Bill

House Bill 115 creates a science, technology, engineering and mathematics (STEM) plus fund and appropriates \$5 million from the general fund to the STEM plus fund to carry out a STEM plus pilot project. The bill requires PED to partner with NMT, NMHU, and WNMU to provide STEM professional development for teachers; programs and research projects for high school students; and after-school programming and tutoring for kindergarten through fourth-grade students in Socorro, Santa Fe, and two other school districts selected through an application process. The pilot project includes data collection and analysis of teacher, student, and programs to determine efficacy of the project. There is no effective date of this bill. It is assumed the effective date is 90 days following adjournment of the Legislature.

FISCAL IMPLICATIONS

The appropriation of \$5 million dollars contained in this bill is a recurring expense to the general fund. Any unexpended or unencumbered balance remaining at the end of FY23 shall not revert to the general fund. Although HB115 does not specify future appropriations, establishing a new grant program could create an expectation that the program will continue in future fiscal years, therefore this cost is scored as recurring.

This bill creates a new fund and provides for continuing appropriations. The LFC has concerns with including continuing appropriation language in the statutory provisions for newly created funds, as earmarking reduces the ability of the Legislature to establish spending priorities.

SIGNIFICANT ISSUES

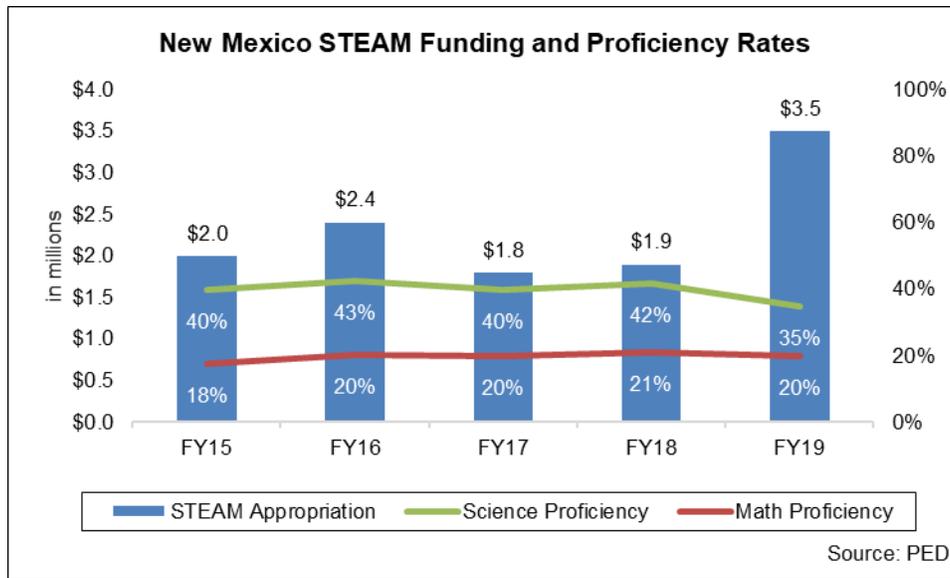
In 2017, PED adopted the New Mexico STEM-Ready Science Standards, replacing the state's existing science standards that were in place since 2003. The new standards present a shift in expectations for STEM education delivery, encouraging educators to focus more on applied learning rather than rote memorization of facts. Additionally, rather than separating the curricula into isolated subject areas such as biology or algebra, elementary- and secondary-level educators will be expected to integrate STEM-related standards and topics across all classes at all grade levels and develop interdisciplinary STEM learning experiences for all students.

A 2016 LFC evaluation, *STEM Degree Production and Employment Outcomes*, found New Mexico higher education institutions were under-producing STEM graduates for an average high-tech economy. Additionally, high-tech industries within the state were hiring a lower percentage of STEM graduates from these institutions. The evaluation also found that STEM graduates from New Mexico institutions, particularly those with advanced degrees, were more likely to be students that did not attend an in-state high school. STEM graduates working in high-tech industries have higher salaries than other fields. The evaluation found a STEM graduate with an associate degree produced a direct return on investment over their lifetime for the general fund of \$17 for every one extra dollar spent on their STEM education.

According to the Workforce Solutions Department, STEM and STEM-related employment growth in New Mexico, is expected to continue growing at a faster rate than many other occupations in the next few years. Despite increasing demand for STEM graduates, science and math proficiency rates have not improved dramatically and institutions of higher education continue to produce non-STEM-related degrees and certificates at a higher rate.

PERFORMANCE IMPLICATIONS

Between FY14 and FY19, the Legislature appropriated \$13.1 million for science, technology, engineering, art, and mathematics (STEAM) initiatives; however, science and math proficiency rates declined or remained relatively flat over the period. PED's STEAM initiative funding has been used to provide support for math curriculum and innovation as well as professional learning opportunities to teachers and school leaders on content, pedagogy, and standards implementation. It is unclear if simply appropriating funds for STEM professional learning opportunities at the state level will result in improved student outcomes.



Provisions of this bill would initially target funding to three universities (NMT, NMHU, and WNMU) and school districts for the STEM plus pilot, but does not clarify how students or teachers would be selected for participation in the pilot. To ensure validity of results, the pilot should include a representative sample of students and teachers. Although the bill expands eligibility for the STEM plus pilot to other school districts after a review of progress in the Socorro, Santa Fe, and two other selected districts, the bill does not expand eligibility to other universities.

ADMINISTRATIVE IMPLICATIONS

Provisions of the bill would require PED to work with HED on data and tracking of participating students. Data collection is required for five years after high school graduation. HED notes the bill would create additional functions and duties for the department, likely increasing administrative costs without additional appropriations to cover the increased workload.

Provisions of this bill would require PED to partner with NMT, NMHU, and WNMU to provide

- Targeted STEM professional development for teachers, including project-based learning;
- STEM programs and research projects for high school students for STEM careers, including teaching; and
- After-school programming and tutoring for K-4 grades in reading and mathematics to prepare for STEM coursework.

The bill further creates a summer research project component of professional development for selected teachers who would receive a \$25 thousand stipend for participating. Participating high school teachers may nominate students.

Provisions of the bill require PED to follow participating high school students throughout high school and five years after high school to determine how many students

1. Achieved higher benchmarks than grade-level cohorts in high school and in post-secondary education;
2. Graduated from high school with a diploma of excellence or received a general equivalency credential;

3. Placed higher in college-level mathematics courses due to participation;
4. Graduated from college with at least a bachelor's degree in a science, technology, engineering, or mathematics field;
5. Applied to graduate school or were in employed in their degree field; and
6. Chose to become or became a public school teacher in New Mexico.

PED will also report on participating students who did not receive at least a bachelor's degree but

1. Completed an associate's degree or career technical certificate in science, technology, or engineering;
2. Found technical careers reflective of educational opportunities provided through science, technology, engineering, and math and;
3. Have been employed at higher rates than non-participating students.

RELATIONSHIP

This bill relates to a \$3 million appropriation for STEAM Initiatives in the PED budget of the HAFC Substitute for HB2.

The bill also relates to Senate Bill 32, which provides funding for outdoor learning programs, and Senate Bill 195, which provides funding for media literacy school programs.

OTHER SUBSTANTIVE ISSUES

NMT, NMHU, and WNMU already provide various STEM programs. As such, it remains unclear if funding for a STEM plus pilot will create a new program or simply cover costs for existing programs. NMT hosts a summer STE²M Experience for high school juniors and seniors in the summer. Students can earn college credits for participating while learning about STEM careers and various fields of engineering. NMHU conducts the STEM Showdown for middle and high school students across Northern New Mexico. The program is offered over multiple days in September and October and includes outdoor place-based science and hands-on activities. WNMU hosts a week-long program for high school teachers and WNMU students hoping to become STEM teachers. WNMU also hosts the Expanding Your Horizons STEM event, which exposes girls to STEM fields as they interact with and complete projects with women in the STEM fields.

ALTERNATIVES

The HAFC Substitute for HB2 includes \$3 million for STEAM Initiatives and \$10 million for career technical education and equipment. Rather than creating a new grant program, PED could use these existing funding sources to cover costs of a STEM plus pilot.

SL/acv