

**LEGISLATIVE EDUCATION STUDY COMMITTEE
BILL ANALYSIS**

Bill Number: HB 318

50th Legislature, 2nd Session, 2012

Tracking Number: School Science Programs

Short Title: .188845.1

Sponsor(s): Representative Nick L. Salazar

Analyst: James Ball

Date: February 10, 2012

Bill Summary:

HB 318 makes an appropriation to fund inquiry science education programs in grades K- 8, for:

- comprehensive classroom instruction;
- professional development for teachers; and
- matching funds for ongoing programs.

Fiscal Impact:

\$900,000 is appropriated from the General Fund to the Board of Regents of Northern New Mexico College (NNMC) for expenditure in FY 13, FY 14, and FY 15. Unexpended and unencumbered funds revert to the General Fund at the end of FY 15.

Fiscal Issues:

According to the Higher Education Department (HED) bill analysis:

- this request was not submitted by NNMC to HED for review;
- the department has established a formal process for reviewing earmarked budget requests for higher education institutions;
- this process requires prior approval by the governing body of a university or college and provides for analysis of each request by HED, the Department of Finance and Administration, and the Legislative Finance Committee; and
- HED recommends that requests that circumvent the formal review process not receive funding in the annual budget but be resubmitted for funding in FY 14.

Background:

HED states in its analysis of HB 318 that inquiry science education programs:

- are a learning process or strategy rather than any particular set of lessons; and
- have, as its goal, the enhancement of the learning process based on:
 - increased student involvement in the tasks at hand;
 - the acceptance of multiple ways of knowing; and
 - building on previously learned knowledge.

HED further notes that the inquiry method leads to active construction of meaningful knowledge rather than passive acquisition of facts transmitted through lecture or directed instruction. An inquiry-based approach to learning is also known as project- or problem-based learning, inductive learning, and reflective thinking. The approach is essentially student-centered with a shift of focus away from teachers and to the learners.

According to the website of the National Science Resource Center (NSRC) of the Smithsonian Institution, many educators have long been convinced that inquiry-based learning and teaching of science promotes students' active involvement in their learning experiences. The inquiry approach helps students develop and retain scientific concepts and skills better than the traditional science textbook approach.

NSRC states that inquiry science is the teaching of science in the way that scientists work in the laboratory. The following examples are provided by NSRC as evidence of the effectiveness of inquiry science learning and teaching.

- Students in El Centro Public Schools in California who took inquiry science classes had average scores on the science section of the state's test almost double the average of those of students who were not participating in such classes. Students with four years of participation scored well over twice as high as non-participants. In addition, 89 percent of students participating in inquiry science classroom work also passed the California Writing Proficiency Assessment, compared to only 58 percent of non-participating students.
- Since 1996, Delaware elementary students have learned science through inquiry-based instruction. In 2001, 87 percent of Delaware public school fourth graders and 70 percent of sixth graders met or exceeded state science standards. In the 2003 assessments, 89 percent of fourth graders and 74 percent of sixth graders met or exceeded the standards.
- A sample of Pittsburgh, Pennsylvania elementary students who had been taught using inquiry methods in their science classrooms performed as well as or better than a international sample of students. Their test results were comparable to those of students from the Czech Republic, Hungary, Japan, Korea, and Singapore, whose students outperformed US middle school students in the aggregate. The Pittsburgh-area inquiry students also significantly outperformed local students who had been taught science through a traditional textbook approach.

Related Bills:

HB 240 *Northern NM Science & Tech Learning*
SB 123 *Minority Math, Engineering & Science Program*
SB 128 *NM Tech Summer Science Program*
SB 239 *Science & Technology Distance Education*