



**House
Legislative
Analysis
Section**

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**SCIENCE AND MATHEMATICS COUNCIL
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MAR 30 1988

**House Bill 4142 (Substitute H-1)
First Analysis (3-22-88)**

Mich. State Law Library

**Sponsor: Rep. Wilfred Webb
Committee: Education**

THE APPARENT PROBLEM:

Many people are sounding an alarm over the state of science and math education in the United States. Consider the following news reports cited by education researchers:

- A National Science Foundation study of children in 24 countries revealed that American students at three different grade levels scored well behind their counterparts in most other countries. (This included a comparison of high school seniors specializing in science subjects.)
- Less than one-fourth of fourth, seventh, and tenth graders passed the science portion of the 1987 Michigan Educational Assessment Program (MEAP). Educators said this was due to poorly prepared teachers, inadequate equipment, and unimaginative programs that alienated many students from science before the middle school years.
- While the U.S. has perhaps the best graduate programs in engineering, math, and science, the beneficiaries are most often foreign students, in large part because of a lack of "homegrown talent." Over 55 percent of the graduate engineering degrees last year were earned by people from overseas.
- Among black and Hispanic students, the problems are magnified. For example, while they represent about 20 percent of the population, blacks and Hispanics earn less than two percent of the doctorates in physics, and are said to be "grossly underrepresented" in the sciences generally. Women, moreover, earn less than 15 percent of all technical degrees, despite recent increases. Educators say as the college-age population shrinks, much more needs to be done to encourage and assist women and minorities to become involved in math and science-related studies.
- By one estimate, some 700,000 jobs in science and engineering could go unfilled in this country by the end of the century. Meanwhile, Japan produces the same number of engineers as the U.S. each year with half the population.

Means must be found to foster student interest in science and math, and to stimulate new, creative methods of teaching if the lives of our children are to be improved and the interests of our society protected.

THE CONTENT OF THE BILL:

The bill would create a 15-member State Council for Science and Mathematics Education, whose responsibilities would include stimulating and encouraging the study and understanding of science and math by students in public and private elementary and secondary schools and distributing grants to further that cause. The members would be appointed by the governor to four-year terms (initially staggered) and would have to be broadly representative of schools, colleges and universities, civic and community organizations, and businesses that employ people in the areas of math and science. The council would

exist as an autonomous unit within the Department of Education, except for budgeting, procurement, and related management functions. The council would accept gifts and donations for distribution on the basis of need. (Grants could go to school districts, postsecondary educational institutions, or other nonprofit organizations.) It could also enter into agreements with a variety of organizations and individuals to provide services that would further science and math education and could receive assistance toward that end from the state. The governor would designate a chairperson for the council and the chairperson would appoint an executive director.

FISCAL IMPLICATIONS:

The Department of Education has estimated that the bill would require an appropriation of about \$150,000. (2-1-88)

ARGUMENTS:

For:

The bill would create a special council of gubernatorial appointees to raise the state's consciousness of the importance of science and mathematics education. There is overwhelming evidence that teachers and students alike need greater exposure to these vital subjects. Increasingly, our economy depends upon people trained in highly technical subject matters and yet many students leave school having made little effort to develop their capabilities in those areas. Many students are simply not provided adequate instruction. Designed to be autonomous and flexible, the council could raise funds from public and private sources, including from business and foundations, and make grants aimed at increasing student and teacher exposure to math and science. It could foster new, creative ways of teaching and establish useful relationships between the schools and institutions outside, such as science museums, universities, and technology-based industries. The bill is modeled on the statute creating the Michigan Council for the Arts.

Against:

While no one can doubt the worthiness of the its goals, the bill may very well duplicate other efforts already underway to improve science and math education in the state, including programs launched by the State Board of Education in the wake of the poor MEAP science scores last year. Operating independently of the Department of Education, the council might prove counterproductive. It would make more sense to have the council be appointed by the state board and function under the auspices of the department.

Response: Having members appointed by the governor will give the council more prestige and prevent it from

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becoming just another curriculum committee. The council will be able to set its own priorities and respond quickly to address them.

Against:

While the bill no longer specifically allows grants to be made to private schools and churches, it is still charged with improving science and math education for both public and private elementary and secondary school students, and it still can make grants to nonprofit organizations. Some public school representatives are concerned about the possible use of public money for private education.

POSITIONS:

The Michigan Science Museum Collaborative supports the bill. (3-15-88)

The Black Child and Family Institute supports the concept of the bill. (3-15-88)

Michigan State University supports the bill. (3-15-88)

The Michigan Association of School Boards has no position on the bill. (3-16-88)

The Michigan State Board of Education took a "nonsupport" position on the bill as it was introduced. (3-1-88)