

HOUSE BILL REPORT

HB 1906

As Reported by House Committee On:

Education
Appropriations

Title: An act relating to improving mathematics and science education.

Brief Description: Improving mathematics and science education.

Sponsors: Representatives Hunter, Anderson, Wallace, Seaquist, Eddy, P. Sullivan, McDermott, Ormsby, McIntire, Pedersen, Rolfes, Barlow, Goodman, Rodne, O'Brien, Kenney, McDonald, Morrell, Newhouse, Hurst, Skinner, Wood and Bailey.

Brief History:

Committee Activity:

Education: 2/8/07, 2/26/07 [DPS];

Appropriations: 3/19/07, 3/26/07 [DP2S(w/o sub ED)].

Brief Summary of Second Substitute Bill

- Creates an after school mathematics support program with community based organizations.
- Creates a mathematics and science instructional coach program.
- Directs the State Board of Education (SBE), with advice of citizen advisory panels, to recommend revisions to the Essential Academic Learning Requirements (EALRs) and Grade Level Expectations (GLEs) in mathematics and science.
- Requires, by January 31, 2008, that the Superintendent of Public Instruction (SPI) revise the EALRs and GLEs for mathematics and present the revised standards to the SBE and the Legislature. Requires revisions of science standards to be presented by December 1, 2008.
- Requires the SPI to present to the SBE recommendations for no more than three basic mathematics and science curricula each for elementary, middle, and high school grade spans. Requires the mathematics curricula recommendations by May 15, 2008, and the science recommendations by May 15, 2009.

This analysis was prepared by non-partisan legislative staff for the use of legislative members in their deliberations. This analysis is not a part of the legislation nor does it constitute a statement of legislative intent.

- Creates two new alternative routes to teacher certification for mathematics and science teachers.
- Requires a common math placement test and performance standard to be used by all colleges and universities as a measure of college readiness.

HOUSE COMMITTEE ON EDUCATION

Majority Report: The substitute bill be substituted therefor and the substitute bill do pass. Signed by 9 members: Representatives Quall, Chair; Barlow, Vice Chair; Priest, Ranking Minority Member; Anderson, Assistant Ranking Minority Member; Haigh, McDermott, Roach, Santos and P. Sullivan.

Staff: Barbara McLain (786-7383).

Background:

The Washington Learns comprehensive education study, chaired by Governor Gregoire, issued final recommendations in November 2006. The Governor proposes implementation of a number of the recommendations regarding mathematics and science education through her proposed budget for the 2007-09 biennium and proposed legislation.

Mathematics and Science Review. The Superintendent of Public Instruction (SPI) is responsible for developing and periodically revising the Essential Academic Learning Requirements (EALRs) and Grade Level Expectations (GLEs) that form the state's learning standards. The State Board of Education (SBE) has responsibility for developing a state accountability system to improve student achievement.

In February 2007, the SBE issued a request for proposals for an independent review of Washington's mathematics standards. The SBE also intends to develop recommendations regarding an accountability system by December 2007.

After School Support. One of the Washington Learns report recommendations was that the state should work with local community organizations and partnerships on student activities to reinforce mathematics and science concepts and skills.

Instructional Coaches. Another recommendation was to create training programs for mentors and instructional coaches who would teach alongside classroom teachers to provide encouragement, ideas, feedback, and examples related to effective practice. The report recommended that an initial focus be on mathematics coaching.

The Legislature currently supports mathematics coaches through the Math Helping Corps (MHC), which provides assistance to schools with low student performance in mathematics. The 13 MHC facilitators are employed by the SPI and are typically assigned to work directly in one school. They spend the rest of their time providing training and assistance to other teachers in the region.

Alternative Routes to Teacher Certification. There are several alternative routes for individuals to earn a teaching certificate other than completing a traditional teacher preparation program. Alternative route programs must be approved by the Professional Educator Standards Board (PESB). Route One is designed for paraeducators with an associate's degree seeking certification in special education or English as a Second Language (ESL). Subject to funding, alternative route candidates are eligible for conditional scholarships of up to \$8,000 per year, with the condition of two years of school service for every year of scholarship.

The PESB has also adopted pathways for currently certificated teachers to add a subject area endorsement. One of these pathways allows the teacher to pass the state subject area assessment (Praxis II) and have their instructional performance in that subject evaluated by a college or university teacher preparation program. Some teachers may need to take additional coursework to pass the assessment. One of the Washington Learns report recommendations was to expand the alternative route programs to prepare more mathematics and science teachers.

College Readiness. Community and technical colleges use a number of different tests to help determine whether and at what level students are prepared for college-level work. Four-year universities consider SAT or ACT scores in their decisions for admission, but rely on the Math Placement Test (MPT) developed by the University of Washington (UW) to assist them in determining the appropriate math course for incoming students.

Some high schools in Washington are working with local colleges to administer college placement tests to students in grades 10 or 11 as a way to provide early information about college readiness and for guidance and counseling purposes. One of the recommendations of the Washington Learns steering committee was expanded use of college placement tests for these purposes.

Summary of Substitute Bill:

Math and Science Review. The Governor appoints two advisory panels, one for mathematics and one for science. Membership of the panels is specified: four experts from academia, four individuals from business and industry, four educators, and four parents.

The SBE, after considering the recommendations of expert consultants and the advice of the advisory panels, must adopt revised learning standards in mathematics and science. New mathematics standards must be adopted by December 1, 2007, and new science standards by June 30, 2008. The standards must be consistent with countries with high scores on the Trends in International Mathematics and Science Study (TIMSS) and align with an end-of-course assessment system for high school. The mathematics standards must also be benchmarked to the key standards identified in the California Mathematics Frameworks for Public Schools.

The SBE must amend high school graduation requirements to include a minimum of three credits of mathematics and describe the required content. At least one of the credits can be a career and technical education course equivalent. The SBE must also consider whether required mathematics content should include Algebra II, whether students should be required to take mathematics in their senior year, and ways to demonstrate competencies in mathematics.

The SBE identifies no more than three mathematics and science curricula for elementary, middle, and high school grade spans that align with the new standards. Mathematics curricula must be identified by July 1, 2008, and science curricula by December 1, 2008. At least one of the curricula must be available online at no cost to schools and parents. The SPI enters master price agreements or master purchase agreements with vendors of the identified curricula.

Nothing requires a school district to use the identified curricula. However, the accountability plan adopted by the SBE must recommend conditions where schools would be required to use the curricula. Required use of the curricula as an intervention strategy must be authorized by the Legislature. Subject to funding, districts that purchase one or more of the curricula after they are identified by the SBE receive reimbursement for the cost. The SPI and the SBE make quarterly progress reports to the Legislature through December 2008.

After School Support. An after school mathematics support program is created. The SPI provides grants to community-based nonprofit organizations that demonstrate the capacity to provide assistance in mathematics learning, with priority for proposals to serve middle and junior high school students. The SPI evaluates program outcomes and makes recommendations regarding continuation, modification, sustainability, and possible expansion. An interim report is due November 1, 2008, with a final report due December 1, 2009.

Instructional Coaches. A mathematics and science instructional coach program is created. The program includes a coaching institute, coaching support seminars, and additional coach development services. In developing the program the SPI must draw upon research and the experiences of coaches in other programs.

Participating schools and districts select the individuals to perform the role of coach, based on characteristics of a successful coach. The coach's role is to support teachers as they apply knowledge, develop skills, polish techniques, and deepen their understanding of content and instructional practices. Each coach is assigned to two schools.

Coach Program participants ensure that coaches participate in the coach development institute and support seminars, practice coaching activities according to their defined role, collect data, and participate in program evaluation activities.

The Washington State Institute for Public Policy evaluates the program. An interim report is due November 1, 2008, with a final report due December 1, 2009.

Alternative Routes to Teacher Certification. Two new alternative routes to teacher certification are created. The Pipeline for Paraeducators program is for individuals with at least three years of classroom experience but without a college degree. A conditional scholarship of up to \$4,000 per year for no more than two years is provided for candidates to enroll in a direct transfer associate degree program in mathematics education. Upon completion of the program, the candidate is eligible to enroll in a Route One alternative route program to obtain a mathematics and special education or a mathematics and English as a Second Language (ESL) teaching certificate.

The Retooling to Teach Mathematics and Science Program is for current teachers and individuals who are not employed as teachers, but who have an elementary teaching certificate. A conditional scholarship of up to \$3,000 per year is provided for these individuals to pursue a middle level or secondary mathematics or science endorsement through one of the PESB's pathways to endorsement. Candidates with an elementary teaching certificate who are not employed as teachers can seek only a middle level endorsement.

College Readiness. By September 1, 2008, the UW, in collaboration with the other four-year colleges and universities, the State Board for Community and Technical Colleges, and the Transition Math Project, must revise the MPT to serve as a common college readiness test for all two and four-year colleges and universities. The test must be implemented by September 1, 2009, with a common performance standard for college readiness.

Four-year colleges and universities that use a different test for placement in college math classes must publicize the test and the required score on the internet. Four-year colleges and universities may not offer precollege courses in mathematics.

Beginning in the fall of 2009, school districts must provide students the option of taking the MPT once at no cost and encourage junior and seniors to take it. The SPI reimburses each district for the costs of providing students this opportunity.

Substitute Bill Compared to Original Bill:

The Governor appoints two advisory panels. Membership and the purpose of the panels is specified. The SBE considers recommendations of expert consultants and the advice of the advisory panels in adopting revised mathematics and science standards and curriculum. The standards must align with end-of-course assessments for high school. Mathematics standards must be benchmarked to the California Mathematics Frameworks. Adoption of science standards is delayed from December 2007 to June 2008. One of the additional mathematics credits considered by the SBE can be a career and technical course equivalent.

The SBE, not the SPI, identifies three mathematics and science curricula that align with the new standards. Identification of science curricula is moved from July 2008 to December 2008. At least one of the curricula must be available online. The SPI enters master price agreements with vendors. The SBE accountability plan recommends, rather than includes, conditions where schools would be required to use the curricula. Required use of the curricula must be authorized by the Legislature. Subject to funding, districts that purchase one or more

curricula receive reimbursement for the cost. The SPI and the SBE make quarterly progress reports.

The UW must revise the MPT to serve as a common college readiness test. The test must be implemented by September 1, 2009, with a common performance standard. Four-year colleges and universities may not offer precollege courses in mathematics. Beginning in the fall of 2009, school districts must provide students the option of taking the test once at no cost. The SPI reimburses each district for the costs.

Appropriation: None.

Fiscal Note: Available.

Effective Date of Substitute Bill: The bill takes effect 90 days after adjournment of session in which bill is passed, except section 1, regarding the review of mathematics and science standards and curriculum, which contains an emergency clause and takes effect immediately.

Staff Summary of Public Testimony:

(Invited testimony) Teacher qualifications and effectiveness are the most important influence on student learning. Any curriculum, no matter how bad, will be overcome by a good teacher. But no curriculum, no matter how good, will be effective without a good teacher.

The instructional coach proposal is strongly opposed. Coaches need to be under district direction and implementing district priorities. Math standards must be more focused on basic skills. The definition of a math "expert" must be someone with demonstrated experience in teaching students. Three state-approved curriculum is too limiting. Districts need to be able to intervene based on student needs.

Coaches don't mandate what teachers teach, they only make suggestions. The model of coaching is "job-embedded" professional development that takes place in the classroom with teachers and students, not at an isolated workshop. Schools need to be ready to benefit from coaching.

The alternative routes programs should be expanded in number of slots and number of options. There is a surplus in teachers in certain areas. The alternative routes have great appeal to someone who has chosen a different career trajectory and/or needs to continue working while gaining the certification. Alternative route teachers have life experience and maturity.

(In support) This is one of the most significant pieces of legislation that must be addressed this session. We must examine our math and science standards. We need a narrow set of curricular materials to be able to offer professional development. We can't hire enough teachers to meet the demand; we must find ways to retrain the existing workforce.

Washington's math standards are a mile wide and an inch deep with no opportunity for mastery. The standards shouldn't just be thrown out. Students need to be able to do basic

math operations but also have a sense of math and its use and purpose. The WASL scores are strong evidence that math is an important issue. Parents feel very strongly about the importance of improving math and science education in our schools. There should be recognition and alignment of any new standards with the college readiness standards adopted by the Transition Math Project. The review should be comprehensive, transparent, and result in clear and balanced standards.

More work is needed in math and science education. The community must be a part of what schools do successfully with students. Both coaches and mentors are important. Not all school districts have what it takes to do highly effective professional development. Community organizations already have the infrastructure to offer more academic programming; they also have the kids who need the help and partnerships with school districts, often on-campus. Community and technical colleges are ready to help paraeducators move into the teaching pipeline.

(In support with concerns) There must be an independent panel outside of the SBE or the SPI to review standards. All standards should be reviewed, not just math and science. There are pros and cons with coaches. The program must be fully funded and evaluated carefully. Limiting the curriculum eliminates local control. Alternative routes are a good idea, but should not be limited to math and science. Don't lose sight of the whole system. Alternative routes are valuable, but the scholarships should be available for teachers in regular certification programs also.

Success of a coaching program is dependent on the quality of the individual. Paraeducator teacher training programs are only viable if the individuals can work at the same time. The inclusion of well-trained paraeducators working directly with students is what will really work to improve student achievement. As we deal with math and science proposals, we must not forget integration of career and technical course equivalencies.

(Opposed) There is insufficient attention to the key issue: weak math standards. This proposal relies on the idea that the SPI can objectively review its own standards. More professional development and coaching is a waste of money if it's focused on the wrong standards. Each school must have the opportunity to choose its own curriculum. Don't put the same people responsible for the problem in charge of the solution.

Persons Testifying: (Invited testimony) Dr. Loyce Adams, University of Washington; Dr. Sondra Bright, Tacoma School District; Deborah Lane, Math Helping Corps; Lin Douglas, Professional Educator Standards Board; and Phil Allen, Bellevue School District.

(In support) Representative Hunter, prime sponsor; Virginia Warfield, Washington Teachers of Teachers of Mathematics; Laura Bay and Beverly Young Reed, Washington State Parent Teachers Association; Bill Tsoukalas, Boys & Girls Club of Snohomish County; Fred Yancey, Washington Alliance of Boys & Girls Clubs; Loretta Seppanen, State Board for Community and Technical Colleges; Brian Jeffries, Transition Math Project; and Kyra Kester, Office of the Superintendent of Public Instruction.

(In support with concerns) Elliott Paull, Shalimar Backman, and Julie Wright, Where's the Math; Lucinda Young, Washington Education Association; Bob Cooper, Washington Association of Colleges of Teacher Education; Kathleen Lopp, Washington Association for Career and Technical Education; Jerry Bender, Association of Washington School Principals; and Tom Lopp, Public School Employees.

(Opposed) Joyce Fiess, Citizens United for Responsible Education; and Sharon Hanek.

Persons Signed In To Testify But Not Testifying: None.

HOUSE COMMITTEE ON APPROPRIATIONS

Majority Report: The second substitute bill be substituted therefor and the second substitute bill do pass and do not pass the substitute bill by Committee on Education. Signed by 32 members: Representatives Sommers, Chair; Dunshee, Vice Chair; Alexander, Ranking Minority Member; Bailey, Assistant Ranking Minority Member; Haler, Assistant Ranking Minority Member; Anderson, Buri, Chandler, Cody, Conway, Darneille, Ericks, Fromhold, Grant, Haigh, Hinkle, Hunter, Kagi, Kenney, Kessler, Kretz, Linville, McDermott, McDonald, McIntire, Morrell, Pettigrew, Priest, Schual-Berke, Seaquist, P. Sullivan and Walsh.

Minority Report: Without recommendation. Signed by 1 member: Representative Hunt.

Staff: Ben Rarick (786-7349).

Summary of Recommendation of Committee On Appropriations Compared to Recommendation of Committee On Education:

Rather than directing the University of Washington to revise the math placement test, the second substitute bill gives the responsibility to the Transition Math Project, in collaboration with several public institutions of higher education, to jointly revise the test.

A prohibition on four-year institutions providing precollege-level math courses is removed.

Implementation of the test by school districts and the reimbursement of districts for the costs is subject to funding appropriated for this purpose.

The SBE, rather than the Governor, appoints 16-member advisory panels in math and science.

Rather than the SBE adopting revised EALRs and GLEs, the SBE recommends the revisions to the SPI, who makes the revisions and presents them to the Legislature for review before final adoption.

Rather than the SBE adopting three recommended curricula in math and science, OSPI presents recommendations to the SBE and seeks input from the advisory panel(s) before adopting the recommended curricula.

The Superintendent of Public Instruction may establish conditions for districts to receive reimbursement for purchasing a recommended curricula.

Appropriation: None.

Fiscal Note: Available.

Effective Date of Second Substitute Bill: The bill takes effect 90 days after adjournment of session in which bill is passed, except section 1, relating to the review of mathematics and science standards and curriculum, and section 2, regarding advisory panels for math and science curricula, which contains an emergency clause and takes effect immediately.

Staff Summary of Public Testimony:

(In support) The Washington State PTA supports this bill. It is important to have a comprehensive solution to the problem of math and science standards that benefits all children and gives districts necessary incentives to adopt rigorous curriculum. As parents, our main concern is to make sure our kids are prepared to succeed in college and in the workplace.

I represent Where's the Math?, a grassroots organization. I am an immigrant with a PhD in electric engineering. There is very little mathematical content in the curriculum in middle and high schools. I want to applaud the efforts of the Legislature, particularly the establishment of an advisory panel to guide the effort of adopting math and science standards. However, we should not artificially limit ourselves to three curricula, and funds should be appropriated to reimburse school districts for the cost of curricula.

The standards review is critical to our ability as a state to move forward. Additionally, the alternate routes and retooling programs are critical; this can help us take advantage of work our state has already done. We have capacity already in place to move this piece forward. We should take advantage of all the para-educators who want to become new math and science teachers by providing them the means to do so.

The Washington Roundtable supports this bill. In the main, this is the right set of activities to be taking on at this point. We need refinement of our standards and a rigorous set of curriculum in the areas of math and science.

Most of the initiatives from HB 1906 were recommendations from Washington Learns. We are very supportive of the coaching initiatives in this bill. Additionally, regarding section 9, we believe the task of revising the math placement test does belong with the Transition Math Project.

Regarding section 1, the SBE has undertaken a review of the math standards and we want to fast track this process, because we would like to be done by the end of August. We are working with Representative Hunter and others to clarify the State Board of Education's role relative to the OSPI in this bill. The OSPI has the staffing capacity and should be in a position to do the substantive work and we should be in an oversight and approval role.

Section 5 references the pipeline to create more math teachers by helping paraeducators that don't have an associate's degree enter onto a pathway to both receive an associate's degree quickly and then move on to get teacher certification in mathematics. The two-year colleges are currently working with the four-year institutions through a negotiated agreement to support this pipeline and are in the process of developing courses for math educators. The colleges are working on the schedules for next year to ensure courses are offered around the working schedules of the paraeducators. We support the funding of these paraeducator and teacher scholarships.

(With concerns) We are concerned about HB 1906. A major concern is the overlapping policy pieces with other legislation. There are too many moving pieces that don't appear to integrate. We ask that you collapse all of the bills that have fiscal impacts so we can see the nexus of all these moving pieces.

The Transitions Mathematics Project is a collaborative of the State Board for Community and Technical Colleges, the Office of the Superintendent of Instruction, the Higher Education Coordinating Board and the Council of Presidents and is financially supported by the Legislature and the Bill Gates Foundation. The Transitions Mathematics Project is concerned section 9 of the bill, which outlines the development of one common readiness test with one common performance standard to be used at all the two- and four-year colleges and universities. The proposal regarding the development of the college readiness test has gained agreement by all the agencies listed above as well as the two- and four-year colleges and universities. The group does not feel the statutory direction provided in the bill is necessary as they have already reached agreement and are working together.

In addition, language contained in section 9 directs the University of Washington (UW) to develop the assessment. This presents a challenge in that the UW is the lead in the development of the Washington math placement test but it is a placement test used by all the baccalaureate institutions. We appreciate the amendments made to the original bill and hope to work more with the Legislature to align this with the proposal.

As a partner with the Transitions Math Project, there is concern with regards to items in the bill regarding remediation. The substitute bill stipulates the baccalaureate institutions may not offer remedial courses in mathematics and the goal of the Transitions Math Project is to reduce remediation needs in math. Yet, there is no distinction in the bill between remedial courses for recent high school graduates or for returning adults and that is an important distinction.

Also please consider that "college ready" is not something that is an all or nothing description for a student. A student can be and usually is prepared in most areas but falls short in one area and that area is usually math. Being able to keep going to college, to stay enrolled; to not have an additional barrier to be put in front of a student is an important way to keep that student on track and to graduate.

There is a concern with section 7 regarding what has been called alternative routes for teachers is now being called conditional scholarship programs. Tying public service back to

scholarship is great and lowers the cost of entry into the teacher profession. As you fund what could be large increases in the program, request that the money be attached to candidates not the particular program. Doing so would result in spreading the availability of programs throughout the state as there are many programs that provide teacher training.

Persons Testifying: (In support) Lukas Van Ginueken, Where's the Math?; Julie Wright, Washington State Parent Teacher Association; Marc Frazer, Washington Roundtable; Loretta Seppanen, State Board for Community and Technical Colleges; Kyra Kester, Office of the Superintendent of Public Instruction; and Judy Hartmann, Office of the Governor.

(With concerns) Edie Harding, State Board of Education; Barbara Mertens, Washington Association of School Administrators; Bob Cooper, Washington Association of Colleges for Teacher Education; Brian Jeffries, Transition Math Project; and Cinda Morana, Council of Presidents.

Persons Signed In To Testify But Not Testifying: None.