
SUBSTITUTE HOUSE BILL 1872

State of Washington

63rd Legislature

2013 Regular Session

By House Education (originally sponsored by Representatives Maxwell, Dahlquist, Lytton, Sullivan, McCoy, Upthegrove, Bergquist, Sequist, Morrell, Wylie, Goodman, Ryu, Tarleton, Tharinger, Springer, Stonier, Jinkins, Orwall, Pollet, Fey, Hansen, Lias, and Freeman; by request of Governor Inslee)

READ FIRST TIME 02/22/13.

1 AN ACT Relating to establishing a comprehensive initiative to
2 increase learning opportunities and improve educational outcomes in
3 science, technology, engineering, and mathematics through multiple
4 strategies and statewide partnerships; amending RCW 28B.77.020 and
5 28A.290.010; adding a new section to chapter 28A.230 RCW; adding a new
6 section to chapter 28A.630 RCW; adding a new chapter to Title 28A RCW;
7 and recodifying RCW 28A.300.515, 28A.630.065, 28A.630.066, 28A.700.120,
8 28A.625.200, 28A.625.210, 28A.625.220, 28A.625.230, and 28A.625.240.

9 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

10 NEW SECTION. **Sec. 1.** STEM LITERACY. (1) As used throughout this
11 chapter, "STEM" means science, technology, engineering, and
12 mathematics.

13 (2) To provide focus and clarity to efforts to increase learning
14 opportunities and improve educational outcomes in STEM, the following
15 definition of STEM literacy is adopted: STEM literacy means the
16 ability to identify, apply, and integrate concepts from science,
17 technology, engineering, and mathematics to understand complex problems
18 and to innovate to solve them. STEM literacy is achieved when a
19 student is able to apply his or her understanding of how the world

1 works within and across the four interrelated STEM disciplines to
2 improve the social, economic, and environmental conditions of the local
3 and global community.

4 (3) The component parts of STEM literacy are:

5 (a) Scientific literacy, which is the ability to use scientific
6 knowledge and processes in physics, chemistry, biology, and earth and
7 space science to understand the natural world and to participate in
8 decisions that affect it;

9 (b) Technological literacy, which is the ability to use new
10 technologies, understand how technologies are developed, and have
11 skills to analyze how new technologies affect individuals, the nation,
12 and the world. Technology is the innovation, change, or modification
13 of the natural environment to satisfy perceived human needs and wants;

14 (c) Engineering literacy, which is the understanding of how
15 technologies are developed through the engineering design process.
16 Engineering design is the systematic and creative application of
17 scientific and mathematical principles to practical ends, such as the
18 design, manufacture, and operation of efficient and economic
19 structures, machines, processes, and systems; and

20 (d) Mathematical literacy, which is the ability to analyze, reason,
21 and communicate ideas effectively through posing, formulating, solving,
22 and interpreting solutions to mathematical problems in a variety of
23 situations.

24 NEW SECTION. **Sec. 2.** STEM EDUCATION INNOVATION ALLIANCE. (1) The
25 STEM education innovation alliance is established to advise the
26 governor and to provide vision, guidance, assistance, and advice to
27 support the initiatives under this chapter, as well as other current or
28 proposed programs and initiatives across the spectrum of early learning
29 through postsecondary education, that are intended to increase learning
30 opportunities and improve educational outcomes in STEM.

31 (2) The governor's office, in consultation with the superintendent
32 of public instruction, shall invite representatives of STEM businesses,
33 business and labor organizations with expertise in STEM fields, one or
34 more nonprofit organizations with a mission to enhance STEM education
35 from early learning through postsecondary education, school districts
36 and institutions of higher education that have demonstrated leadership
37 and innovation in STEM education, and STEM educators to participate in

1 the alliance. Representatives from the governor's office, the office
2 of the superintendent of public instruction, and other state education
3 agencies shall also participate as members of the alliance.

4 (3) The STEM education innovation alliance shall initiate its work
5 by aligning and combining previous STEM education strategic plans into
6 a single, cohesive, and comprehensive STEM framework for action and
7 accountability. The framework must concentrate on a limited number of
8 selected and specific measures that are meaningful indicators of
9 progress in increasing STEM learning opportunities and in achieving the
10 intended longer-term outcomes of such efforts. The framework must use
11 measures that are quantifiable and based on data that are regularly and
12 reliably collected statewide.

13 (4) Staff support for the STEM education innovation alliance shall
14 be provided by the governor's office and the office of financial
15 management, with support from the office of the superintendent of
16 public instruction and other state education agencies as necessary.

17 NEW SECTION. **Sec. 3.** STEM EDUCATION REPORT CARD. (1) The STEM
18 education innovation alliance shall develop a STEM education report
19 card, based on the STEM framework for action and accountability, to
20 monitor progress in increasing learning opportunities and aligning
21 strategic plans and activities in order to prepare students for STEM-
22 related jobs and careers, with the longer-term goal of improving
23 educational, workforce, and economic outcomes in STEM.

24 (2) The report card must:

25 (a) Illustrate the most recent data for the indicators and measures
26 of the STEM framework for action and accountability;

27 (b) Provide information from state education agencies that
28 indicates the extent that activities and resources are aligned with and
29 support the STEM framework for action and accountability;

30 (c) Provide data regarding current and projected STEM job openings
31 in the state; and

32 (d) Be prominently displayed on a web site designed for this
33 purpose.

34 (3)(a) The education data center under RCW 43.41.400 must
35 coordinate data collection and analysis to support the report card.

36 (b) The state education agencies must annually report on how their
37 policies, activities, and expenditures of public resources align with

1 and support the STEM framework for action and accountability. The
2 focus of the reporting under this subsection is on programs and
3 initiatives specifically identified in law or budget proviso as related
4 to STEM education. The agencies must use a common metric for the
5 reporting, designed by the education data center in consultation with
6 the STEM education innovation alliance. For the purposes of this
7 section, "state education agencies" includes the office of the
8 superintendent of public instruction, the student achievement council,
9 the state board for community and technical colleges, the workforce
10 training and education coordinating board, the professional educator
11 standards board, the state board of education, and the department of
12 early learning.

13 (c) The employment security department must create an annual report
14 on current and projected job openings in STEM fields and submit the
15 report to the education data center for inclusion in the STEM education
16 report card.

17 (4) The STEM education innovation alliance must publish the first
18 STEM education report card with baseline data on the identified
19 measures by January 10, 2014, and must update the report card by each
20 January 10th thereafter.

21 NEW SECTION. **Sec. 4.** STATEWIDE STEM ORGANIZATION. (1) To the
22 extent funds are appropriated specifically for this purpose, the office
23 of financial management shall contract with a statewide nonprofit
24 organization with expertise in promoting and supporting STEM education
25 from early learning through postsecondary education. The purpose of
26 the contract is to identify, test, and develop scalable, cost-
27 effective, and evidence-based approaches for increasing learning
28 opportunities and improving educational outcomes in STEM that are
29 aligned with the STEM framework for action and accountability. The
30 activities to be conducted under the contract shall be as provided in
31 this section, with specific performance expectations negotiated between
32 the office of the governor, the office of financial management, and the
33 selected organization.

34 (2) Under the terms of the contract, the organization selected
35 under this section shall:

36 (a) Conduct a statewide communications campaign to expand awareness
37 of the importance of STEM literacy and the opportunities presented by

1 STEM education and careers, particularly as a strategy to close the
2 educational opportunity gap for disadvantaged students and promote
3 economic development in disadvantaged communities;

4 (b) Expand regional networks of schools, institutions of higher
5 education, educational service districts, STEM businesses, and
6 community-based organizations to align STEM learning opportunities with
7 best practices and local economic development;

8 (c) Establish an innovation fund and offer competitive grants to
9 support innovative practices in STEM education, from early learning
10 through postsecondary education, including developing models of
11 interdisciplinary instruction and project-based learning;

12 (d) Expand STEM professional development opportunities for
13 educators, faculty, and principals, including developing technology-
14 enabled learning systems to support implementation of state learning
15 standards; and

16 (e) Create opportunities to extend STEM learning into early
17 learning programs.

18 NEW SECTION. **Sec. 5.** INTERDISCIPLINARY INSTRUCTION AND PROJECT-
19 BASED LEARNING. (1) The office of the superintendent of public
20 instruction, in consultation with the STEM education innovation
21 alliance, must identify and disseminate resources and materials to
22 elementary, middle, and high schools that are intended to encourage and
23 increase interdisciplinary instruction and project-based learning in
24 STEM.

25 (2) In collaboration with work groups of STEM educators and using
26 the work of regional STEM networks and innovation grant recipients
27 under section 4 of this act, the office of the superintendent of public
28 instruction must:

29 (a) Identify interdisciplinary STEM instructional modules
30 appropriate for different grade levels;

31 (b) Identify project-based learning models, projects, lessons, and
32 guides appropriate for different grade levels; and

33 (c) Make the information collected in this section, including
34 online resource guides, available for teachers to incorporate into
35 their classroom instruction.

36 (3) The office of the superintendent of public instruction must

1 also disseminate information and research on best practices in
2 interdisciplinary instruction and project-based learning in STEM.

3 **Sec. 6.** RCW 28B.77.020 and 2012 c 229 s 104 are each amended to
4 read as follows:

5 (1) Aligned with the state's biennial budget and policy cycles, the
6 council shall propose educational attainment goals and priorities to
7 meet the state's evolving needs. The council shall identify strategies
8 for meeting the goals and priorities by means of a short-term strategic
9 action plan and a ten-year plan that serves as a roadmap.

10 (a) The goals must address the needs of Washington residents to
11 reach higher levels of educational attainment and Washington's
12 workforce needs for certificates and degrees in particular fields of
13 study.

14 (b) The council shall identify the resources it deems appropriate
15 to meet statewide goals and also recognize current state economic
16 conditions and state resources.

17 (c) In proposing goals, the council shall collaborate with the
18 superintendent of public instruction, the professional educator
19 standards board, the state board of education, the state board for
20 community and technical colleges, the four-year institutions of higher
21 education, independent colleges and degree-granting institutions,
22 certificate-granting institutions, and the workforce training and
23 education coordinating board.

24 (2) The council shall update the strategic action plan every two
25 years with the first strategic action plan to be submitted to the
26 governor and the legislature by December 1, 2012. The ten-year roadmap
27 must be updated every two years with the first roadmap to be submitted
28 to the governor and the legislature by December 1, 2013. The council
29 must provide regular updates to the joint higher education committee
30 created in RCW 44.04.360 as needed.

31 (3) In order to develop the ten-year roadmap, the council shall
32 conduct strategic planning in collaboration with agencies and
33 stakeholders and include input from the legislature. The council must
34 also consult with the STEM education innovation alliance established
35 under section 2 of this act in order to align strategies under the
36 roadmap with the STEM framework for education and accountability

1 developed by the alliance. The roadmap must encompass all sectors of
2 higher education, including secondary to postsecondary transitions.
3 The roadmap must outline strategies that address:

4 (a) Strategic planning, which includes setting benchmarks and goals
5 for long-term degree production generally and in particular fields of
6 study;

7 (b) Expanding access, affordability, quality, efficiency, and
8 accountability among the various institutions of higher education;

9 (c) Higher education finance planning and strategic investments
10 including budget recommendations necessary to meet statewide goals;

11 (d) System design and coordination;

12 (e) Improving student transitions;

13 (f) Higher education data and analysis, in collaboration with the
14 education data center, which includes outcomes for recruitment,
15 retention, and success of students;

16 (g) College and career access preparedness, in collaboration with
17 the office of the superintendent of public instruction and the state
18 board of education;

19 (h) Expanding participation and success for racial and ethnic
20 minorities in higher education;

21 (i) Development and expansion of innovations in higher education
22 including innovations to increase attainment of postsecondary
23 certificates, and associate, baccalaureate, graduate, and professional
24 degrees; and innovations to improve precollege education in terms of
25 cost-effectiveness and transitions to college-level education; ((and))

26 (j) Strengthening the education pipeline and degree production in
27 science, technology, engineering, and mathematics fields, and aligning
28 strategies under the roadmap with the STEM framework for action and
29 accountability developed under section 2 of this act; and

30 (k) Relevant policy research.

31 (4) As needed, the council must conduct system reviews consistent
32 with RCW 28B.77.080.

33 (5) The council shall facilitate the development and expansion of
34 innovative practices within, between, and among the sectors to increase
35 educational attainment and assess the effectiveness of the innovations.

36 (6) The council shall use the data and analysis produced by, and in
37 consultation with, the education data center created in RCW 43.41.400

1 in developing policy recommendations and proposing goals. In
2 conducting research and analysis the council at a minimum must:

3 (a) Identify barriers to increasing educational attainment,
4 evaluate effectiveness of various educational models, identify best
5 practices, and recommend methods to overcome barriers;

6 (b) Analyze data from multiple sources including data from academic
7 research and from areas and agencies outside of education including but
8 not limited to data from the department of health, the department of
9 corrections, and the department of social and health services to
10 determine best practices to remove barriers and to improve educational
11 attainment;

12 (c) Assess educational achievement disaggregated by income level,
13 age, gender, race and ethnicity, country of origin, and other relevant
14 demographic groups working with data from the education data center;

15 (d) Track progress toward meeting the state's goals;

16 (e) Communicate results and provide access to data analysis to
17 policymakers, the superintendent of public instruction, institutions of
18 higher education, students, and the public; and

19 (f) Use data from the education data center wherever appropriate to
20 conduct duties in (a) through (e) of this subsection.

21 (7) The council shall collaborate with the appropriate state
22 agencies and stakeholders, including the state board of education, the
23 office of the superintendent of public instruction, the state board for
24 community and technical colleges, the workforce training and education
25 coordinating board, and the four-year institutions of higher education
26 to improve student transitions and success including but not limited
27 to:

28 (a) Setting minimum college admission standards for four-year
29 institutions of higher education, including a requirement that
30 coursework in American sign language or an American Indian language
31 satisfies any requirement for instruction in a language other than
32 English that the council or the institutions may establish as a general
33 undergraduate admissions requirement;

34 (b) Proposing comprehensive policies and programs to encourage
35 students to prepare for, understand how to access, and pursue
36 postsecondary college and career programs, including specific policies
37 and programs for students with disabilities;

1 (c) Recommending policies that require coordination between or
2 among sectors such as dual high school-college programs, awarding
3 college credit for advanced high school work, and transfer between two
4 and four-year institutions of higher education or between different
5 four-year institutions of higher education; and

6 (d) Identifying transitions issues and solutions for students, from
7 high school to postsecondary education including community and
8 technical colleges, four-year institutions of higher education,
9 apprenticeships, training, or workplace education; between two-year and
10 four-year institutions of higher education; and from postsecondary
11 education to career. In addressing these issues the council must
12 recognize that these transitions may occur multiple times as students
13 continue their education.

14 (8) The council directs the work of the office, which includes
15 administration of student financial aid programs under RCW 28B.76.090,
16 including the state need grant and other scholarships, the Washington
17 advanced college tuition payment program, and work-study programs.

18 (9) The council may administer state and federal grants and
19 programs including but not limited to those programs that provide
20 incentives for improvements related to increased access and success in
21 postsecondary education.

22 (10) The council shall protect higher education consumers
23 including:

24 (a) Approving degree-granting postsecondary institutions consistent
25 with existing statutory criteria;

26 (b) Establishing minimum criteria to assess whether students who
27 attend proprietary institutions of higher education shall be eligible
28 for the state need grant and other forms of state financial aid.

29 (i) The criteria shall include retention rates, completion rates,
30 loan default rates, and annual tuition increases, among other criteria
31 for students who receive state need grant as in chapter 28B.92 RCW and
32 any other state financial aid.

33 (ii) The council may remove proprietary institutions of higher
34 education from eligibility for the state need grant or other form of
35 state financial aid if it finds that the institution or college does
36 not meet minimum criteria.

37 (iii) The council shall report by December 1, 2014, to the joint
38 higher education committee in RCW 44.04.360 on the outcomes of students

1 receiving state need grants, impacts on meeting the state's higher
2 education goals for educational attainment, and options for
3 prioritization of the state need grant and possible consequences of
4 implementing each option. When examining options for prioritizing the
5 state need grant the council shall consider awarding grants based on
6 need rather than date of application and making awards based on other
7 criteria selected by the council.

8 (11) The council shall adopt residency requirements by rule.

9 (12) The council shall arbitrate disputes between and among four-
10 year institutions of higher education and the state board for community
11 and technical colleges at the request of one or more of the
12 institutions involved, or at the request of the governor, or from a
13 resolution adopted by the legislature. The decision of the council
14 shall be binding on the participants in the dispute.

15 (13) The council may solicit, accept, receive, and administer
16 federal funds or private funds, in trust, or otherwise, and contract
17 with foundations or with for-profit or nonprofit organizations to
18 support the purposes and functions of the council.

19 (14) The council shall represent the broad public interest above
20 the interests of the individual institutions of higher education.

21 **Sec. 7.** RCW 28A.290.010 and 2011 1st sp.s. c 21 s 54 are each
22 amended to read as follows:

23 (1) The quality education council is created to recommend and
24 inform the ongoing implementation by the legislature of an evolving
25 program of basic education and the financing necessary to support such
26 program. The council shall develop strategic recommendations on the
27 program of basic education for the common schools. The council shall
28 take into consideration the capacity report produced under RCW
29 28A.300.172 and the availability of data and progress of implementing
30 the data systems required under RCW 28A.655.210. Any recommendations
31 for modifications to the program of basic education shall be based on
32 evidence that the programs effectively support student learning. The
33 council shall update the statewide strategic recommendations every four
34 years. The recommendations of the council are intended to:

35 (a) Inform future educational policy and funding decisions of the
36 legislature and governor;

1 (b) Identify measurable goals and priorities for the educational
2 system in Washington state for a ten-year time period, including the
3 goals of basic education (~~and~~), ongoing strategies for coordinating
4 statewide efforts to eliminate the achievement gap and reduce student
5 dropout rates, and strategies to increase learning opportunities in
6 science, technology, engineering, and mathematics that are aligned with
7 the STEM framework for action and accountability developed under
8 section 2 of this act; and

9 (c) Enable the state of Washington to continue to implement an
10 evolving program of basic education.

11 (2) The council may request updates and progress reports from the
12 office of the superintendent of public instruction, the state board of
13 education, the professional educator standards board, and the
14 department of early learning on the work of the agencies as well as
15 educational working groups established by the legislature.

16 (3) The chair of the council shall be selected from the
17 councilmembers. The council shall be composed of the following
18 members:

19 (a) Four members of the house of representatives, with two members
20 representing each of the major caucuses and appointed by the speaker of
21 the house of representatives;

22 (b) Four members of the senate, with two members representing each
23 of the major caucuses and appointed by the president of the senate;

24 (c) One representative each from the office of the governor, office
25 of the superintendent of public instruction, state board of education,
26 professional educator standards board, and department of early
27 learning; and

28 (d) One nonlegislative representative from the educational
29 opportunity gap oversight and accountability committee established
30 under RCW 28A.300.136, to be selected by the members of the committee.

31 (4) The council shall meet no more than four days a year.

32 (5)(a) The council shall submit an initial report to the governor
33 and the legislature by January 1, 2010, detailing its recommendations,
34 including recommendations for resolving issues or decisions requiring
35 legislative action during the 2010 legislative session, and
36 recommendations for any funding necessary to continue development and
37 implementation of chapter 548, Laws of 2009.

38 (b) The initial report shall, at a minimum, include:

1 (i) Consideration of how to establish a statewide beginning teacher
2 mentoring and support system;

3 (ii) Recommendations for a program of early learning for at-risk
4 children;

5 (iii) A recommended schedule for the concurrent phase-in of the
6 changes to the instructional program of basic education and the
7 implementation of the funding formulas and allocations to support the
8 new instructional program of basic education as established under
9 chapter 548, Laws of 2009. The phase-in schedule shall have full
10 implementation completed by September 1, 2018; and

11 (iv) A recommended schedule for phased-in implementation of the new
12 distribution formula for allocating state funds to school districts for
13 the transportation of students to and from school, with phase-in
14 beginning no later than September 1, 2013.

15 (6) The council shall submit a report to the legislature by January
16 1, 2012, detailing its recommendations for a comprehensive plan for a
17 voluntary program of early learning. Before submitting the report, the
18 council shall seek input from the early learning advisory council
19 created in RCW 43.215.090.

20 (7) The council shall submit a report to the governor and the
21 legislature by December 1, 2010, that includes:

22 (a) Recommendations for specific strategies, programs, and funding,
23 including funding allocations through the funding distribution formula
24 in RCW 28A.150.260, that are designed to close the achievement gap and
25 increase the high school graduation rate in Washington public schools.
26 The council shall consult with the educational opportunity gap
27 oversight and accountability committee and the building bridges work
28 group in developing its recommendations; and

29 (b) Recommendations for assuring adequate levels of state-funded
30 classified staff to support essential school and district services.

31 (8) The council shall be staffed by the office of the
32 superintendent of public instruction and the office of financial
33 management. Additional staff support shall be provided by the state
34 entities with representatives on the council. Senate committee
35 services and the house of representatives office of program research
36 may provide additional staff support.

37 (9) Legislative members of the council shall serve without
38 additional compensation but may be reimbursed for travel expenses in

1 accordance with RCW 44.04.120 while attending sessions of the council
2 or on official business authorized by the council. Nonlegislative
3 members of the council may be reimbursed for travel expenses in
4 accordance with RCW 43.03.050 and 43.03.060.

5 NEW SECTION. **Sec. 8.** A new section is added to chapter 28A.230
6 RCW to read as follows:

7 (1) The state board of education must adopt rules under RCW
8 28A.230.090 to increase the number of course credits in science that
9 are required for high school graduation to three credits, to take
10 effect with the graduating class of 2018.

11 (2) Funds shall be appropriated in the omnibus appropriations act
12 beginning with the 2014-15 school year for additional materials,
13 supplies, and operating costs such as laboratory equipment, technology,
14 and textbooks associated with additional science courses.

15 (3) Funds shall also be appropriated in the capital appropriations
16 act to provide supplemental allocations for modernization and new
17 construction of science laboratory facilities to increase the physical
18 capacity of school districts to offer additional and more advanced
19 science courses.

20 (4) This section, and the funding appropriated for the purposes of
21 this section, constitute the authorization and funding necessary under
22 RCW 28A.230.090(2)(c) to implement the increased graduation
23 requirement.

24 NEW SECTION. **Sec. 9.** A new section is added to chapter 28A.630
25 RCW to read as follows:

26 Funds must be appropriated each school year in amounts sufficient
27 to provide twenty grants of five thousand dollars to support student
28 participation in team-based STEM activities and projects that involve
29 robotics and engineering competitions. The office of the
30 superintendent of public instruction shall allocate the funds each year
31 to elementary, middle, and high schools using a lottery system. The
32 allocated funds are for a one-year period, but a recipient school is
33 eligible to participate in the lottery in subsequent years.

34 NEW SECTION. **Sec. 10.** RCW 28A.300.515, 28A.630.065, 28A.630.066,

1 28A.700.120, 28A.625.200, 28A.625.210, 28A.625.220, 28A.625.230, and
2 28A.625.240 are each recodified as sections in the new chapter created
3 in section 11 of this act.

4 NEW SECTION. **Sec. 11.** Sections 1 through 5 of this act constitute
5 a new chapter in Title 28A RCW.

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