

Date of Hearing: July 15, 2015

ASSEMBLY COMMITTEE ON EDUCATION

Patrick O'Donnell, Chair

SB 359 (Mitchell) – As Amended June 24, 2015

SENATE VOTE: 40-0

SUBJECT: California Mathematics Placement Act of 2015.

SUMMARY: Requires local educational agencies and charter schools serving students in grades 8 and 9 to adopt and implement a fair, objective, and transparent mathematics placement policy. Specifically, **this bill:**

- 1) Makes findings and declarations regarding the problem of students being inappropriately placed in mathematics courses at the secondary level.
- 2) States that the act shall be known as the California Mathematics Placement Act of 2015.
- 3) Requires governing boards of local educational agencies serving pupils in grade 8 or 9, or both, that do not have a mathematics placement policy as of January 1, 2016, to develop, adopt in a regularly scheduled public meeting, and implement a fair, objective, and transparent mathematics placement policy that:
 - a) systematically takes multiple, objective academic measures into consideration, such as year-end 8th grade statewide assessments, pupil grades, and coursework
 - b) includes at least one placement checkpoint within the first month of the academic year to ensure accurate placement
 - c) requires examination of aggregate pupil placement data annually to ensure that there is no disproportionate impact in the course placement of pupils by race, gender, ethnicity, or socioeconomic background
 - d) requires LEAs to report the aggregate results of this examination to the governing board of the local educational agency and prominently post the examination results on its website. States that this report may be included as part of the local educational agency's accountability report of its local control and accountability plan.
 - e) offers clear and timely recourse for each pupil and his or her parent or legal guardian who questions the pupil's placement
- 4) Requires each governing board of a local educational agency shall ensure that its mathematics placement policy is posted prominently on its Internet Web site.
- 5) Defines "local educational agency" to mean a county office of education, school district, state special school, or direct-funded charter school.

EXISTING LAW:

- 1) Requires completion of two courses in mathematics before graduation from high school.
- 2) Requires that one of those courses, or “a combination of the two courses” required for graduation meet or exceed the rigor of the 1997 content standards for Algebra 1.
- 3) Establishes the Academic Content Standards Commission and requires it to develop standards in language arts and mathematics, at least 85% of which must be those developed by the Common Core State Standards (CCSS) Initiative. Requires the State Board of Education (SBE) to accept or reject these standards by August 2, 2010.
- 4) Authorizes the Superintendent of Public Instruction to recommend modifications to the adopted CCSS in mathematics to the SBE, and authorizes the SBE to adopt modifications to the standards.

FISCAL EFFECT: According to the Senate Appropriations Committee, “Unknown, potentially significant costs for LEAs without a mathematics placement policy to develop and implement one in accordance with the requirements of this bill. Costs to the state would depend on the number of LEAs that would be required to develop a placement policy as these activities, as well as implementing the policy, could be determined to be a reimbursable state mandate.”

COMMENTS:

Need for the bill. According to the author’s office, “Math misplacement occurs when 9th grade students are held back to repeat their 8th grade math course despite achieving a “B” grade or better, or testing at proficient or advanced on state assessments, instead of being placed in the next course in the recommended math sequence as a freshman in high school. Most universities, including the California State University and the University of California, require at least three years of math for college eligibility and prefer students who have taken high-level math courses such as Calculus or Advanced Placement Statistics. Failing to take high level math classes in high school can have significant ramifications on the student’s future economic success.”

Study finds many students who successfully pass Algebra in 8th grade placed in same course in 9th grade. A 2010 study by the Noyce Foundation which examined the math placement practices of nine school districts and their effect on 1,700 students found:

- Nearly 65% of students who were placed in Algebra in 8th grade were placed in Algebra again in 9th grade.
- 46% of 8th grade Algebra students who earned a grade of B- or better were placed in Algebra again in 9th grade, or dropped to a less advanced course.
- 45% of 8th grade Algebra students who met or exceeded standards on standardized assessments (California Standards Test or the formative Mathematics Assessment Resource Service assessments) were placed in Algebra again in 9th grade.
- Nearly half of the students who were successful in Algebra in the eighth grade and who were placed again in Algebra in ninth grade were no more successful in their second experience.

- Evidence suggesting (but is not generalizable because of the methodology of this study) that Latino, African American, and Pacific Islander students who were successful in 8th grade Algebra were less likely than other students to be placed in Algebra again in 9th grade.
- There are a “large and confusing array of names for math classes” in 8th and 9th grades among the districts surveyed.

Math placement in 8th and 9th grade key to future achievement and college-readiness.

Placement in 8th grade algebra, often described as a “gatekeeper” or “gateway” course, has long term implications, generally determining whether students to advanced mathematics in high school.

The state’s Mathematics Framework, adopted by the SBE in 2013, describes 8th grade math placement as predictive of course taking patterns in high school. In many districts, students who are not on this track in 8th grade will only progress to advanced mathematics in 12th grade by taking the extraordinary measure of taking two math courses in one year. This has implications for postsecondary options, as calculus or other high level mathematics courses are preferred by many institutions of higher education. The Mathematics Framework also characterizes 9th grade as “a key year for students in terms of future academic success,” citing research showing that most students who fall off track for college eligibility do so in the 9th grade.

A new definition of “math misplacement.” Prior to the publication of the above data, “math misplacement” was typically considered to mean the placement of students in courses for which they were academically unprepared. The state’s Mathematics Framework states that “[math] misplacement is common,” and devotes the discussion of this problem predominantly to the problem of students’ lack of readiness for the course.

Enrollment in 8th grade algebra has increased dramatically in recent years, from 32 percent to 54 percent between 2003 and 2009, according to the CDE. Scores on the California Standards Test in algebra increased for students overall during this period, but scores have risen more dramatically for low income, English learner, African American, and Latino students, as well as students with disabilities.

Yet concerns persist about inappropriate placement in this course. These concerns are based in part on proficiency scores on the California Standards Test, but also on the observations that many students *retake* Algebra in 9th grade, and that many *retake* the algebra CST (which occurs each time a student takes the course).

Given the data presented above, coupled with research presented below, ***the Committee may wish to consider*** if any part of California’s students’ math “failure” could actually be success in disguise.

How do schools determine math placement? Current law is silent with regard to mathematics placement policies and practices. The state’s Mathematics Framework states:

Most districts typically rely on teacher recommendations and course grades to determine course placement (Bitter and O’Day 2010, p. 6), with standardized mathematics test scores, student/parent preferences, and counselor recommendations

also factoring into the decision (Hallinan 2003). Teacher and counselor placement recommendations include subjective judgments about “**students’ personalities, behavior and motivation**” in addition to test score performance. [emphasis added]

What causes math misplacement? There are several factors which have been identified as leading to students’ misplacement in math courses in 9th grade. Among them are:

- ***Over-reliance on subjective measures.*** Use of subjective measures to determine placement may be a significant factor in math misplacement. Research on math placement illustrates the potential consequences of over-reliance on subjective judgments in placement decisions:

A 2014 longitudinal study of placement of students in algebra in 8th grade investigated the relationship between standardized test scores and teacher evaluation of students’ math skills on math placement. It found that African American students had 2/3 the chance of being placed in algebra than other students of the same ability. For white students, test scores were a stronger predictor of algebra placement than teacher evaluation, but for African American students teacher evaluations significantly outweighed test scores. Students who had high test scores but low teacher evaluations had only 1/10th the rate of algebra placement as students who had high test scores and high teacher evaluations. For high-achieving African American students, the rate of algebra placement was 40% lower than for high-achieving white students. Even for African American students with high test scores and high teacher evaluations, the rate of placement was no higher than for those African American students with average scores and evaluations.

Another study of math placement in an urban school district found that among 8th grade students scoring in the highest quartile on a statewide standardized assessment of mathematics, placement in the 9th grade “gatekeeper” mathematics courses differed dramatically by schools *within the same district*. Overall, 27% of high scoring students were not placed in appropriate courses, and low socio-economic students were three times as likely as wealthier students to be denied appropriate placement. The school observed to have a culture of low expectations placed the least number of high-achieving students in the appropriate courses.

- ***Poor timing of data availability from some objective measures.*** Data from statewide assessments has historically been available only after placement recommendations have been made. This should improve, however, with the state’s new, computer-based assessments, which will produce test scores for non-performance items within weeks after test administration.
- ***Absence of consistently-applied policies.*** There is no statewide data on school districts’ math policies. Some districts, such as Capistrano Unified School District, do have clear placement policies posted on their websites. But anecdotal evidence suggests that some school districts either lack a formal, publicly-accessible placement policy, or that their existing policies are not applied consistently.
- ***Lack of coordination between middle and high schools.*** A report by WestEd, “College Bound in Middle School and High School? How Math Course Sequences Matter,” found poor coordination between middle and high schools in math placement, reporting that of the districts studies, “none had focused on the relationship between students’ math performance

in early middle school and later course taking and achievement,” reflecting a “disjuncture, or lack of communication, between middle- and high-school staff.” It noted that “middle-school staff never learned how their students fared in high school; high-school teachers do not systematically seem to know how their students had performed in middle school before transitioning to high school.”

- **Wide variation in course names.** As noted above, there are many names for mathematics courses used by school districts, and this variation may result in improper course placement in the transition between schools and districts.
- **Parental involvement.** Research has demonstrated that more educated parents are more likely to intervene in mathematics course placement decisions affecting their children.
- **Concern in high schools about quality of 8th grade algebra courses.** A 2009 EdSource report notes a concern, expressed by the CDE, that “some students who pass Algebra I in grade 8 might be placed in the course again by high schools that criticize the quality of 8th grade courses.”
- **Non-unified districts.** For non-unified school districts, math placement policies may not consistently align between elementary feeder districts and high school districts.
- **Lack of sufficient counselors.** Likely contributing to the problem of math misplacement is California’s poor counselor-to-student ratio. In 2010-2011, the state ranked last in the nation, with one counselor for every 1,016 students.

What happens when districts implement a math placement policy based on objective measures? According to the Silicon Valley Community Foundation, twenty-two school districts are actively working to improve their math placement practices. One school district, the Jefferson Union High School District worked with its four feeder elementary district to adopt a common math placement protocol.

Another district, the Sequoia Union High School District, reviewed its math placement practices and found that math misplacement was occurring almost exclusively among students of color coming from a lower income area. They examined the reasons why teachers were recommending that students who had succeeded in algebra were being placed in algebra again, and found a variety of reasons, from concerns that students didn’t pay enough attention in class, to poor homework completion, to a general perception that students weren’t ready to face academic challenges.

Sequoia Union High School District began placing students in math courses based on test scores, and within a year had achieved “accurate placement” aligned to ability between 96% and 99% of the time.

Math misplacement may begin even earlier than 8th grade. While there is no statewide data on math placement practices in the transition between elementary and middle school, limited evidence suggests that math misplacement may occur at this juncture as well. For example, the Fremont Unified School district website states that 6th grade students must take a math placement test, and that “no changes may be made to a student’s math course pathway until after 9th grade.” It also states that absent students must take the placement test on the day they return to school or they will “will lose the opportunity to accelerate and will automatically be placed in the non-

accelerated course.” *The Committee may wish to consider that* while the 8th to 9th grade transition is a critical one, math misplacement may occur long before. This bill, as proposed to be amended (see Recommended Amendments below), includes a permissive statement on the inclusion of the elementary to middle school transition in math placement policies.

What math placement tests are districts using? Some school districts use placement tests in 8th grade (and earlier) to determine math placement, but there is no statewide information on what kinds of assessments are being used - whether they are aligned to state content standards, whether they are valid and reliable for placement purposes, or how they are developed. According to their websites, the Los Angeles Unified School District and the San Diego Unified School District, and developed their own math placement examinations for use with their students. This bill, as proposed to be amended (see Recommended Amendments below), lists placement tests that are *aligned to state-adopted content standards* as one possible objective measure that districts could use in their placement policies.

Model math placement policy allows subjective measures to advance students, but not hold them back. The Lawyers’ Committee on Civil Rights has created a model math placement policy which relies on objective measures of achievement. It permits subjective measures such as staff recommendations *only to advance* students, but does not allow them to hold students back. This policy would allow a school to advance a student in spite of poor test scores if, for example, the teacher knows that the student is proficient in the content but has poor test taking skills.

Two-year Algebra 1 policy. Current law requires that students complete two years of mathematics in order to graduate from high school, and that one of those courses be Algebra 1. This is currently interpreted to mean that a student may take Algebra 1 over the course of two years and satisfy the two-year mathematics graduation requirement. Enrollment in 2 year algebra has declined from a peak enrollment of 760,000 in 2010-11 to 49,000 students in 2012-13, perhaps reflecting the transition to integrated mathematics. AB 220 (Holden) of this Session allows students to enroll in a 2 year version of Mathematics 1 (integrated mathematics). *The Committee may wish to consider* if students who successfully complete Algebra 1 in 8th grade are ever subsequently enrolled in a two-year Algebra course, further degrading their chances of meeting college entrance requirements.

Transition to Common Core mathematics means changes in rigor and organization of math content. The transition to the state’s new Common Core aligned Mathematics standards means changes in both rigor and organization of mathematics content.

The Mathematics Framework describes the new mathematics standards for 8th grade as of “significantly higher rigor” than those forming the basis of Algebra 1 in the past. In terms of organization of content, the standards provide school districts the option of offering either the traditional sequence of secondary math courses, or an integrated math sequence. Integrated Math consists of a sequence of three courses known as Mathematics 1, Mathematics 2, and Mathematics 3 (with advanced topics in the fourth year). The integrated pathway presents secondary mathematics as a connected subject, with each course containing standards from the six conceptual categories of math content.

A November, 2013 survey published by the Consortium for the Implementation of the Common Core State Standards found that more school districts had chosen an integrated sequence (32%)

than continue with the more traditional mathematics sequence (26%), but that over 40% of school districts had not selected a mathematics sequence.

Recommended amendments. Staff recommends the following amendments:

- 1) This bill refers to districts enrolling students in grades 8 and 9, but does not specifically state that the policy must address placement in those grades. Staff recommends that Section 2(a) be amended to add “mathematics placement policy for grade 9...”
- 2) Staff recommends that the section specifying examples of objective measures which policies could include be amended to read: “Systematically takes multiple, existing and objective academic measures of pupil performance into consideration. For purposes of this section, ‘objective academic measures’ means measures, such as statewide mathematics assessments, including interim and summative assessments, authorized by Section 60640, placement tests that are aligned to state-adopted content standards in mathematics, classroom assignments and grades, and report cards.”
- 3) Staff recommends that the section requiring policies to include a placement checkpoint be amended to read: “Includes at least one placement review within the first month of the academic year to ensure accurate placement.”
- 4) Staff recommends that the first sentence of the paragraph on “disproportionate impact” be amended to read: “Requires examination of aggregate pupil placement data annually to ensure that pupils who are qualified to progress in mathematics courses based on measures of pupil performance selected for inclusion in the policy pursuant to (b)(1) are not held back in a disproportionate manner on the basis of race, ethnicity, gender or socio-economic background.”
- 5) Staff recommends deleting a reference to local educational agencies including a math placement report in their Local Control Accountability Plans.
- 6) As noted above, inconsistency between elementary and high school districts may cause math misplacement. To address this, staff recommends an amendment to Section 2, add (b)(5) to read: “For non-unified school districts, address the consistency of placement policies between elementary and high school districts.”
- 7) Staff recommends addressing earlier math placement in the transition between elementary and middle school in a permissive manner, by adding: “Local educational agencies may, at their discretion, also address in this policy mathematics placement in the transition between elementary and middle school or junior high school, as applicable.”
- 8) For clarity in describing charter schools, in Section 2 (d), staff recommends amending this section to read: ~~direct-funded charter school as described in Section 47651.~~
- 9) Staff recommends amending the intent section to be consistent with the section on “disproportionate impact”

Related legislation. AB 1012 (Jones-Sawyer) of this Session prohibits students from being placed in courses they have satisfactorily completed, except under specified circumstances. This bill is now pending in the Senate.

AB 220 (Holden) of this Session allows the course Mathematics 1 (integrated mathematics) to satisfy a mathematics graduation requirement. This bill reflects the option provided by the SBE for LEAs to offer either integrated or traditional mathematics courses aligned to the Common Core State Standards. This bill is now pending in the Senate.

SR 60 (Mitchell, 2014) asks local school boards to develop, adopt, and monitor a fair, objective, and transparent mathematics placement policy.

REGISTERED SUPPORT / OPPOSITION:

Support

Silicon Valley Community Foundation (sponsor)
Association of California School Administrators
Bayer Corporation
California Court Appointed Special Advocates Association
California School Boards Association
California State PTA
Education Trust – West
Public Advocates
San Francisco Unified School District
University of California
Numerous individuals

Opposition

None on file

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