

7 Simple Ways to Improve Education in Marylandⁱ

By **Jerome Dancis**, Associate Professor Emeritus, Math Dept., Univ. of MD

→ **Recommendation 1.** Schools in poor neighborhoods could have a school pediatrician, school dentist, school psychological counseling in addition to the school nurse. A student with a toothache, or an illness or who cannot see the board clearly is a student not ready to learn. Provide behavior therapy for students with ADHD and counseling for students with PTSD. Medicaid might fund much of this.

Community schools may choose to implement Recommendation 1 and more under the Kirwan Commission Report (if enough money is allocated).

All the other recommendations fall outside the Kirwan Commission Report; also, they are freebies, no funds required.

→ **Recommendation 2:** Only students who exceed the expectations on the PARCC Math 7 exam will skip Math 8 and take Algebra I in Grade 8?

* 9,000 (43% of) Grade 8 Algebra I students were not proficient on the 2017 state Algebra I exam. But, students studying Algebra in Grade 8 are supposed to be exceptionally good ones.

* 8,000 students, who scored less than proficient on the 2016 PARCC Math 7 exam took Algebra I in 2016-2017. This suggests social promotion into Grade 8 Algebra.

→ **Recommendation 3. Intervention** needed for the almost four out of five (78%) Grade 9 Algebra I students who scored less than proficient on the PARCC Math 8 exam. **Example.** They will study Algebra over two years (Algebra I Part I, which will largely be Arithmetic and Algebra I Part II).

→ **Recommendation 4.** Middle and high schools should start at 9 am at the earliest. Science says that teenagers are not ready to learn at 8 am; they are ready to sleep in class. High schools that open at 8 am say to students that they do not believe in science.

→ **Recommendation 5.** Fill in the loopholes in the Common Core middle school math curriculum.

Example. If the state wants high school students to know that 50 % is a half, the state needs to add it to the middle school math curriculum. (Knowing that 50 % is a half was not one of my suggestions to the Common Core math writing team that was accepted.)

Example. If the state wants students to learn how to do the many Arithmetic problems on the Math SAT, the state needs to add Math SAT Arithmetic problems to the middle school math curriculum. Teaching the Common Core math curriculum is not sufficient.

→ **Recommendation 6.** Raise the standards on the teacher licensing tests so that passing the tests will ensure that all teachers (not just some teachers) are knowledgeable in the subjects listed on their licenses. If the state wants that all classes (not just some classes) will be taught by a teacher knowledgeable in the subject, then the state needs more demanding teacher licensing tests and requirements to ensure this.

If the state wants that all teachers (not just some teachers), will write and speak coherently, clearly, comprehensively, logically, accurately and precisely without being cryptic, vague, ambiguous, or obscure, then the state needs to add teacher licensing tests which will require this.

→ **Recommendation 7.** Provide good textbooks. For the elementary grades, use the Singapore Math textbooks (which were written in simple English for Singapore students for whom English was not their native language.)

In 2007, I was a duly sworn official of the state of California. I was a Content Review Panel (CRP) member charged with review of four Grades 4-7 Math textbooks series, which are supposed to help students, who are a year behind in Math, to catch up. What jumped out at me was that the textbook writers had little training on how to write mathematics coherently, clearly, comprehensively, logically, accurately and precisely without being cryptic, vague, ambiguous, or obscure as well as how to distinguish a correct mathematical argument from an *incorrect or incomplete* mathematical argument.

Use the one good set of Math textbooks for elementary school, namely Singapore Mathematics Textbooks.

Here is how switching to Singapore mathematics textbooks jumped scores at Ramona Elementary School's Grade 5 results on the California Standards Math Test for the three years before and the three years after switching (in 2007) to Singapore Mathematics Texts under the guidance of Mathematics Professor Yoram Sagher. (About one teacher in four chose to ignore the guidance):

2003-2005: Percent of Students scoring Proficient and Advanced: **43%-56%**

2006-2008: Percent of Students scoring Proficient and Advanced: **71%-76%**

Before: Percent advanced: 15%-26%	Average Scaled scores (all students)	349- 378
After: Percent advanced: 35%-43%	Average Scaled scores	395- 412

Ramona Elementary School is an inner-city title 1 school in Los Angeles. Nine of every 10 students at the school are eligible for free or reduced-price meals (FARM). Mostly, these were immigrant children, the majority from Central America, some from Armenia. Nearly six in 10 students spoke English as a second language. (The data is from the California Department of Education's (CDE) website.)

¹ This report is similar to my presentation to the "[Kirwan] Commission on Innovation and Excellence in Education [in Maryland]" at its Oct. 25, 2017 hearing. That version was entitled "6 Simple Ways to Improve Public Schools in Maryland". It was reprinted by The Nonpartisan Education Review on its web at <http://nonpartisaneeducation.org/Review/Resources/DanCisKirwanTestimony.pdf>. It may also be found (with difficulty) on the commission's website at <http://mgaleg.maryland.gov/Fubs/CommitWorkgrp/2017-Innovation-Excellence-in-Education-Commission-2017-10-25-Public-Hearing.pdf>