

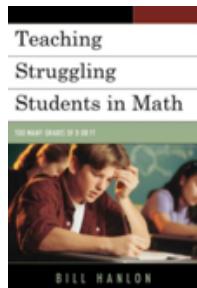
# Nevada Public Education News



## Common Core - not the perfect solution

~ Bill Hanlon

It is way past time to look deeper into the common core standards. The common core, along with the testing consortiums, were supposed to allow us to compare our students' achievement with students across the nation. The fact is, about half the states have opted out of the consortium testing. Those comparisons are not going to happen. And, as we find out, student performance on these tests varied depending upon if they took the tests online or with paper and pencil.



Like most things in life, there are things we support, but don't support totally. I support the common core, but this is not the perfect document it has been made out to be. As I would tell my colleagues: If you know the subject, you should be able to win an argument supporting your position, but you should also be able to win the argument against the position. Otherwise you just don't know enough.

I support the common core standards in math because the standards require students to not only know the math, but understand where the math they are learning comes from (derive), the students should be able to link the math they are learning to previously learned math and outside experiences, they are able to use the math to solve problems they may encounter in their life. Those standards were a welcome change from previous testing that only required students to know a formula or algorithm with little or no understanding. No matter what people say about standards, testing still drives instruction.

There are issues with the common core and they start early in the curriculum. For instance, most states have reading as a very high priority by a certain grade. The brain research strongly suggests a correlation between cursive handwriting and learning to read. But the common core pushes keyboarding. Such a disconnect on this important goal deserves to be investigated so students have a better chance at learning to read at the earliest possible age.

The one-size-fits-all model is also troublesome. The National Governors' Association, Achieve, and the Council of Chief State School Officers wrote a white paper clearly indicating these standards are meant for all students. One-size-fits-all models should

always draw a red flag. This means that all students will be required to enroll in college prep classes. Let's be clear, not all students have the aptitude or interest in attending college.

Students need greater opportunities to enroll in vocational programs and courses. To drive this point home, imagine being a student in a Nevada classroom with 38-42 students, some special education students, some regular students with vocational interests, and some students whose goal is to go to college. The new standards, and why I support them, require college prep students to know where the math comes from, to derive the formula they use. Under the common core, all students would have to derive the formula for a parabola that appears in the next paragraph. My point is, for students who just want to a vocational career, how does that help them? What about special education students, many of whom who just can't do it? And, for the students whose goal is to go to college, all the distractions caused by other students' needs and classroom management issues place their education in jeopardy. And then, place yourself in the teachers' shoes trying to deal with these disparities.

You might want to breeze over the derivation of the formula of a parabola, which is relatively simple mathematically, and see if you think this is appropriate for *all* of the before-mentioned students.

By definition

$$FP = PD$$

Distance Formula

$$\sqrt{(x-0)^2 + (y-c)^2} = \sqrt{(x-x)^2 + (y+c)^2}$$

Squaring,

$$x^2 + (y - c)^2 = 0^2 + (y + c)^2$$

Expanding

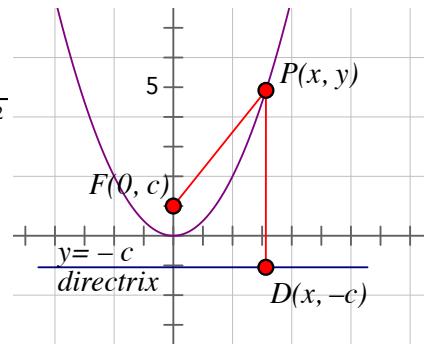
$$x^2 + y^2 - 2yc + c^2 = y^2 + 2yc + c^2$$

Subtracting  $c^2$  &  $y^2$

$$x^2 - 2yc = 2yc$$

$$x^2 = 4yc$$

$$y = \frac{1}{4c}x^2$$



In geometry, Euclidean Geometry was replaced by Transformational Geometry. That's a clear indicator that these standards were not written by hundreds of math teachers as is professed. A college prof, what the Achieve Group calls a primary writer, wrote these standards. Transformational geometry has taken the informality of the geometry students previously learned and made that the formality. An example might be helpful to understand that. A Euclidean geometry proof that a diagonal of a parallelogram divides

the parallelogram into two congruent triangles would be accomplished by examining angles formed by parallel lines and the ASA Congruence Theorem. Then, most teachers would often show the students that if they cut a parallelogram along the diagonal, the two triangles formed would fit on top of each other - a visual confirmation of the proof.

Well, in transformational geometry, that's what the teacher is doing, showing the students the triangles fit on top of each other by transforming them. With the watering down of geometry in the standards, we can now see that the SAT has also cut back on geometry on their new test. I'm not sure how these primary university writers of the common core believe that this will make our students more competitive internationally.

The common core was supposed to be the answer to the "mile wide - inch deep" curriculum. They accomplished some of that by just leaving out standards. Those deleted standards are still math concepts and skills that teachers need to teach for students to learn subsequent standards. As an example, to teach students to solve higher degree equations using the Rational Root Theorem, students would have to know synthetic substitution. But, that's no where to be found in the common core standards.

Then, we get these so called instructional shifts as a result of the common core. I'm perplexed by the idea that students should not be taught procedures in math. Procedures in math, algorithms, are directions that guide students through a process. As an example, to solve quadratic equations using the Zero Product Property, we would develop the following algorithm, 1) Place everything on one side, zero on the other side, 2) factor completely, 3) set each factor equal to zero, and 4) solve the resulting equations. When first learning, students need that procedure as a guide, with use, it later becomes automatic. But just as importantly, procedures act as a language acquisition strategy. They teach students how to read, write and speak mathematically. And to say that's an issue in mathematics would be a gross understatement.

Another instructional shift is students don't need to practice the math they learn. Maybe that helps answer the question why students still don't know their basic facts and procedures. Another shift is students should be engaged in learning somehow has been translated to students should not take notes. That, if a student is taking notes, they are not engaged in learning. Last time I checked, the research seemed to indicate that students who took handwritten notes more quickly remembered what was taught and the information stayed with them longer. I'm pretty sure that's called "learning" in education. Notes are also used to complete homework assignments, place information into perspective, study for unit tests and review for high stakes tests like the end-of-year tests or college entrance exams.

These are just some of the issues with the common core that need to be addressed. But, two greater issues have been with the attitude of the organizations sponsoring the common core and their primary authors. Any attempt to resolve issues have been met

with total resistance from these people - the notion that anyone questioning their standards does not believe in high academic standards is insulting. And secondly, since the National Governors' Association with their state superintendents (CCSSO) are two of the groups behind these standards, why didn't they fund the implementation of them.

Nevada's Governor Sandoval, who fancies himself as an education governor, cut the professional development budget by over 60% when the math and ELA standards were introduced and being implemented, then complained mightily and called for "accountability" when students did perform well a couple of years later.

And, to ensure his legacy, with the rollout of the new Next Generation Science Standards (NGSS) this year, southern Nevada, which constitutes over 80% of the state's student population, got no funding to introduce and implement the new science standards.

So, while I support the common core standards, there are holes, contradictions, and philosophical areas that I don't support. And unfortunately, Nevada's Governor and State Board of Education, along with its former state superintendent don't know enough to address any of these issues thoughtfully, so they would not address them when these deficiencies were brought to their attention. All they can say is what is politically correct – they support the standards, then bury their collective heads in the sand. Ignorance is bliss.

So, even with these deficiencies, I still support the common core. But that support does not mean areas of concern should not be addressed.