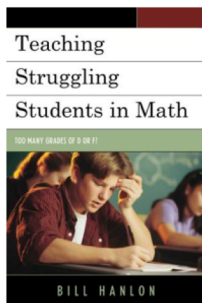# Nevada Public Education News

Common Core Standards - *One Size Fits All???*

Bill Hanlon

There are two sets of people who don't seem to know much about the common core standards, their most fervent supporters and the most fervent detractors.

I don't know which group is worse. Many of the most fervent supporters hold positions of influence. They tend to dismiss the concerns of the detractors feeling very confident in their own superiority and the belief the other group does not know anything. They really need to look in the mirror.

I was an early supporter of the common core standards. I continue to support those standards, but I have some concerns and I certainly do **not support** the idea that *one size fits all*. There are too many supporters of the common core who have absolutely no idea what they are supporting. What we can all agree is American students can achieve more and that levels of achievement can increase with just the understanding that *what works is work*.

A group that clearly supports the common core standards is the NV State Board of Education. As they were discussing the transition from testing on the older math standards to the common core, it became quite evident that no member of the board had any grasp of what is required of the common core. A board member was concerned with the alignment of the old standards still being tested and the implementation of the common core. He, nor any other member of the board, seemed to realize that if schools were really implementing the common core, then they would do extremely well on the old proficiency exam based on their 2006 standards.

Members of the board did not seem to realize that students would still need to know polynomial operations, how to factor, solve equations, graph, etc. And, if they did, they certainly were not able to articulate that knowledge during this drawn out conversation.

And now the business community, represented by many chambers of commerce, are getting into the fray, typically supporting the common core. But what is clear, they know less than the state board members. Now, if these policymakers and business professionals blindly support the common core without knowing what is required of all students, then taxpayers will be footing a very large bill to pay for needless remediation of misplaced students, some expensive legal challenges, students will lose opportunities in career and technical education, and our best students will be pulled down by the *one size fits all* model. A losing proposition for all involved.

A few states that jumped quickly so they could be on the *"cutting edge"* and be seen as *leaders* in the implementation of the common core are now licking their wounds from those poorly thought out decisions. States like Texas that so proudly led the country in the idea that *all* students should take Algebra II have now backed off that requirement.

It makes one wonder if anyone ever studied statistics, were introduced to the Standard Normal Curve (Bell Curve), and could conclude all students should be taking college prep courses, that all students should take Algebra II. Twenty-five years ago, one could argue that students who successfully completed Algebra II had a pretty good grounding in math. Today, I'm not so sure students who have successfully completed Algebra II even know *algebra* begins with the letter *"a"*.

The reason I support the common core is it brings back into focus the beauty and what is important in math – understanding, decision-making and application. The last federal initiative, No Child Left Behind, left all that depth/rigor behind. The common core requires concepts and skills be developed. It requires students learn how math concepts and skills are related to previous learning and outside experiences. For instance, when we tell students to add/subtract decimals, they learn a perfectly good algorithm; 1) line up the decimal points, 2) fill in zeros, 3) add/subtract 4) bring the decimal point straight down. We now expect that to be related to fractions. That is, when decimal points are lined up and zeros are filled in, students found the common denominator and made equal fractions, when they added the numbers, they were adding the numerators and when the brought down the decimal point, they were bringing down the denominator.

As students continue in their study of math, they see how the trig identity such as, $\cos^2 x + \sin^2 x = 1$ is related to the equation of a circle, how that equation is, in fact, the distance formula, and how the distance formula is the Pythagorean Theorem. In other words, they are all the same formula, just written differently because they are being used in different contexts. The common core unifies the math students learn.

Wouldn't be nice if students could also see the applications of the math they are learning. Besides learning how to derive, identify and graph an equation of a parabola and find the vertex, focus and directrix, students would also learn properties of parabolas and how they are used in everyday lives in the form of flashlights, satellite dishes, amphitheatres, as well as finding max and mins in typical algebra classes. etc.

One size fits all– does anyone really believe that philosophy serves the needs of *all* our students? Do special education students really need to be required to sit next to students who really want a good STEM education and not have their needs met? How about the distractions the STEM students will have to endure? How about the teachers trying to address the disparities in their classrooms?

The only thing worse than stupidity is the acceptance of that stupidity. Many state policymakers/leaders can plead guilty to that charge.

We should respect the knowledge bases of our students; not everyone is best served by taking college prep classes. When a technician fixes my air conditioner or my car, I don't feel superior because I have a math degree. I'm not better than them.

Another issue that accompanies this stupidity is if there are legitimate concerns about parts of the common core standards, the arrogance of the National Governors Association and its affiliate, Achieve, believe this document is like the Bible and can not be questioned. And if anyone does, then, of course, they can not be for high standards. That's the same attitude that was displayed with the No Child Left Behind initiative. Achieve puts out talking points so their less informed supporters appear like they know what they are talking about. There was a lot of money spent to dumb down the NCLB standards. If we can't learn from our past mistakes, why would we expect students to become critical thinkers?

The only thing worse than stupidity is the acceptance of that stupidity.

I'm betting the most fervent supporters of the common core would not only not be able to derive the following formula, but would not be able to follow it even with the reasons given. Yet they expect *all* students to do so.

The following is a derivation of the formula for an ellipse, before the common core, students would be given a definition of an ellipse, the formula, then asked to recognize it in different forms of the equation and rewrite it, graph it and been asked to solve problems. That will still occur, but the common core typically asks students to answer the "why" behind the math.

Students will be asked to derive formulas such as this: $\dfrac{(x-h)^2}{a^2} + \dfrac{(y-k)^2}{b^2} = 1$

Here's what that derivation would look like.

The sum of the focal radii is 2a. So by definition; we have

$$d(P, F_1) + d(P, F_2) = 2a$$

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

Isolate the radical $\sqrt{(x+c)^2 + y^2} = 2a - \sqrt{(x-c)^2 + y^2}$

Squaring $(x+c)^2 + y^2 = 4a^2 - 4a\sqrt{(x-c)^2 + y^2} + (x-c)^2 + y^2$

Expanding $x^2 + 2xc + c^2 + y^2 = 4a^2 - 4a\sqrt{(x-c)^2 + y^2} + x^2 - 2xc + c^2 + y^2$

Subtracting x^2, y^2, c^2 $2xc = 4a^2 - 4a\sqrt{(x-c)^2 + y^2} - 2xc$

Subtracting 2xc $0 = 4a^2 - 4a\sqrt{(x-c)^2 + y^2} - 4xc$

Divide by 4 $0 = a^2 - a\sqrt{(x-c)^2 + y^2} - xc$

Isolate the radical	$a\sqrt{(x-c)^2 + y^2} = a^2 - xc$
Squaring	$a^2\{(x-c)^2 + y^2\} = a^4 - 2a^2xc + x^2c^2$
Expanding	$a^2\{x^2 - 2xc + c^2 + y2\} = a^4 - 2a^2xc + x^2c^2$
Multiply by a^2	$a^2x^2 - 2a^2xc + a^2c^2 + a^2y^2 = a^4 - 2a^2xc + x^2c^2$
Add $2a^2xc$	$a^2x^2 + a^2c^2 + a^2y^2 = a^4 + x^2c^2$
Subtract a^2c^2, Add x^2c^2	$a^2x^2 + a^2y^2 - x^2c^2 = a^4 - a^2c^2$
Commutative Prop	$a^2x^2 - x^2c^2 + a^2y^2 = a^4 - a^2c^2$
Factor	$x^2(a^2 - c^2) + a^2y^2 = a^2(a^2 - c^2)$
Substitute $b^2 = a^2 - c^2$	$x^2b^2 + a^2y^2 = a^2b^2$
Divide a^2b^2	$\dfrac{x^2b^2}{a^2b^2} + \dfrac{a^2y^2}{a^2b^2} = \dfrac{a^2b^2}{a^2b^2}$

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

This is an equation of an ellipse with center at the origin with x-intercepts *a* and *–a* and y-intercepts *b* and *–b*.

We can move the center as we did with the circle by using ~

$$\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1$$

(h, k) is now the center, the *a* and *b* represent the distances from the center (h, k) on the major and minor axes, respectively.

The ***one-size-fits-all*** model is just one area of the common core adoption/implementation that will need to be addressed. There are many other issues that will pop up when the tests are administered. Will the tests measure what we want measured? Will the results of the tests developed by the two consortia be consistent? Will they be consistent with the results of NAEP, the nation's report card? Will the results be able to be compared fairly? Will the universities change their curriculum so it is aligned with the common core? Will the classroom teachers receive the training they need? Who is going to approve materials that publishers ***always*** say are aligned to whatever is out there? Is the pacing right?

With the implementation of the new ***one-size-fits-all*** exams this year, this ***one-size-fits-all*** curriculum model will result in needlessly high failure rates, misleading communities on public education's performance, students' needs not being met, not to mention a huge funding increase to address deficiencies that don't legitimately exist. Biggest losers - students.