

Nevada Public Education



Let's Give Our Students a Damn Chance

Bill Hanlon

For sports teams to be successful, they have to have the players. Anyone who has watched sports knows that. That axiom also applies to business and education. Nevada not only has a teacher shortage, we have a substitute shortage. What does that same about the quality of play in our classrooms.



Nevada's shameful place in national education rankings is a direct result of not hiring the best teachers and not providing professional development to teachers to help our students succeed.

Nevada is sticking warm bodies in classrooms and then wondering why our students are ranked dead last on the ACT. Anyone that couldn't see this coming is either willfully blind or hasn't been paying attention.

Just look how we attract and retain teachers; at the airport, there are signs to become a "superhero", cape and all. Just walk in and the district will train you in weeks to become a teacher. Really? At UNLV, they have a four-week training program, called the Rebel Program to become a teacher. Non-profits like Teach for America (TFA) \$contract\$ with the district to place people in our students' classrooms. Yet, they like other educational non-profits, pay their national directors over \$400,000 per year. These people are not qualified math teachers!

So, does anyone really think that these non-math people can go into our classrooms and teach math well? Would those people know how to connect the Pythagorean Theorem to the Distance Formulas to the Equation of a Circle or trig identity $\cos^2x + \sin^2x = 1$. Those are all the same formula, just written differently because they are used in different contexts. Would they know the procedures for computing with fractions are the same as the procedures for computing with decimals? Would they connect the rules for exponentials to the rules in logarithms? Would they know the definition of parabola and derive the formula or explain how a paraboloid is used in flashlights, headlights, satellite dishes and amphitheatres that direct sound and light waves? Because too many of our students' math teachers don't have a math background, those concepts and skills are all too often taught in isolation. Brain research clearly wouldn't support that.

To be frank, while these people volunteering to "teach" are typically nice, well-meaning, and hardworking people, they don't have the math backgrounds to serve our students well – nor do they have a commitment to stay. Groups like TFA will tell you that a person with a business degree has a math background and can teach math in our high schools. Well, monetarily, that

does fit TFA's needs to get paid, but not the needs of our students. A business degree's "highest" math requirement is normally one course "lower" than the "entry" course of a math major.

Teachers make a difference! Just like players on sports teams, if you don't have good players, you don't have a winning season. If students don't have well-qualified teachers with the content knowledge, instructional and assessment strategies and resources to support those, then our students linger at the very bottom of educational rankings. Students experiences learning in a classroom matter.

What has the state done to help better prepare students in math besides hiring the underqualified? They require teachers to take professional development classes in **ELL and Family Engagement** to renew their licenses. For Pete's sakes, if these teachers don't know or understand the math they are assigned to teach, how do those classes help them? Those requirements are a waste of time and money and a reason why so many people leave teaching. Give our students a damn chance!

I'd like to think that a teacher would teach strategies and link concepts and skills to help students learn, so they wouldn't be learning everything in isolation. For instance, in teaching basic subtraction facts, we know students can subtract mentally $12 - 12$ and come up with zero without counting on their fingers because they recognize the pattern. But, there are other patterns, subtracting with consecutive numbers the units column results in 9 or a number ending in 9; $12 - 3$; $16 - 7$, $14 - 5$; etc. Or, when subtracting numbers with consecutive even or odd numbers in the units column, the answer is always 8; $12 - 4$, $13 - 5$; $15 - 7$, etc. Seeing these patterns helps the students learn and memorize important information. Math does not have to be hard to learn.

Operations (+ - x ÷) with polynomials is the same as operations in arithmetic, the only things that change are the vocabulary and notation. You'd never know that the way that is taught by people without a "real" math background. Taught correctly, those should be easy for students to learn. Problems arise when underqualified teachers teach math, first, they make math difficult. Second, they don't recognize how concepts and skills are linked and will be used later. For instance, the division algorithm, now taught in 6th grade, is used when dividing polynomials, is used again in synthetic division, then in synthetic substitution to evaluate functions and later in solving higher degree equations using the Rational Root Theorem. Putting it simply, not "mastering" the division procedure will make math more difficult for students later.

So, besides requiring your students' teachers to take classes in ELL and Family Engagement, teachers are also pushed into classes like "Lesson Planning" or "Unpacking the Standards". You can see how that's going to help your child in math, right? This is foolishness. Let's give our students a damn chance. Let's provide them with teachers who know the content, know how to teach the concepts so students understand it, how to assess that information and have resources that help our students learn it. And if they don't have that content knowledge, let's provide it to them in professional development.

Investing in education means investing in players, the teachers. We need to be competitive to hire the best teachers nationwide, that includes salaries and benefits so teachers are not working two jobs. Investing also means providing professional development based on what they teach,

how they teach and assess and resources to support that – not lesson planning, unpacking standards, not ELL, not Family Engagement. Investing that also includes reasonable class sizes (38-42 students in algebra and geometry is not acceptable), and supplies so teachers don't have to use their own money to buy needed supplies. Working conditions matter.

If we want to increase student achievement achievement, let's stop all these categorical programs and special interest non-profit groups that result in funds being diverted from the classroom. Let's concentrate on our students' experiences learning in the classroom. Let's give our students a damn chance to succeed by ensuring they have experienced qualified teachers!

Bill Hanlon, is a noted speaker, an author, educator, consultant and coach for schools, former Director of the Southern Nevada Regional Professional Development Program, and is a national presenter for organizations such as AASA, ASCD, ALAS, NMSA, NASSP, NSBA, and NCTM. He was the coordinator of Clark County School District's Math/Science Institute and was also responsible for K-12 math audits. He served on the Nevada State Board of Education, Regional Director of the National Association of State Boards of Education (NASBE) and as a member of the National Council for Accreditation of Teacher Education (NCATE) States Partnership Board. He also hosted a television series, "Algebra, *you can do it!*" on PBS Las Vegas.

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