

# Nevada Public Education News



## *ELL Strategies Benefit ALL Students*

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Professional development for teachers and administrators to better reach English Language Learners benefits all students.

Unfortunately, when people think about language acquisition they think only in terms of non English speaking students. Students born in this country, who only speak English, have language acquisition issues too. My experience is that many of the difficulties students experience in a math classroom are related to language acquisition. Yes, math is a language. The words we use in math classrooms are used differently on the street. For instance, when I think of volume, I'm thinking about capacity, students are thinking of turning up their ipods. Mean to me is a measure of central tendency, students think of the guy across the street who yells at them for cutting across their yard. When I'm thinking about operations, I'm thinking about adding, subtracting, multiplying or dividing, the kids are thinking about someone's surgery.

When solving equations, we ask students to *solve*, *find the solution*, *find the zeros*, or *find the roots*. These are all ways of saying find the value of the variable that makes the open sentence (equation) true. If the students are not aware of these math synonyms, if they have not acquired the language, they will miss questions on high stakes tests they actually know how to do. Vocabulary, language, should be explicitly taught and tested for students to succeed.

Read the following theorem:

*In a right triangle, the altitude drawn from the right angle to the hypotenuse divides the hypotenuse into two segments. The length of the altitude is the geometric mean of the lengths of the two segments.*

I would guess the average high school student whose first language is English would have trouble understanding that theorem. The math behind it is a simple – a proportion. My point is if students missed this problem, it was not the math causing difficulty, it was the language we call math. A visual, with emphasis on vocabulary would make this theorem very clear – for ALL students. That's not only an ELL strategy, it's a good instructional strategy.

ELL strategies are good for all students. We recommend that teachers use simple straight-forward examples that work, without variation, when first introducing a concept or skill. An example that does not bog the students down in arithmetic that actually focuses them on the

concept being taught is best for all students. Too often the examples used in initial instruction are a distraction because of the computation that takes off the concept or skill being introduced.

In ELL training, using simple straight-forward examples that work is referred to a “Comprehensible Input”. You can see it how that strategy can readily help students in math, or any other subject as well.

Now, is there anyone out there that would like to have math concepts or skills initially taught to their own kids with examples that don’t clarify concepts? Poor examples actually distract students because of a variation or arithmetic.

Teachers and administrators are advised to use oral recitation when introducing a new concept, procedure, or formula in math. That language acquisition strategy not only embeds the information in short-term memory, it also teaches the students how to read it, say it, and write it. Too often, students will read  ${}_nC_r$  as “n C r.” If teachers used oral recitation as a language acquisition strategy, students would have seen it on the board, been taught to read it correctly, write it and say it, then know  ${}_nC_r$  is a “combination of  $n$  things being taken  $r$  at a time.”

While many educators believe difficulties students experience are because of not knowing the English language – an ELL problem. I would argue that many of those difficulties are not just ELL, but language acquisition in general. These difficulties are subject related. They are exactly the same issues that face non-English speakers but to a much greater degree. The problems have the same solution, we need to reach the students by communicating with them more effectively. The job is to help students learn – not talk about why we can’t.

In math, we also ask teachers to link concepts and skills so they can better understand concepts and skills, compare & contrast, see these topics in different contexts. For instance, we might tell students to add decimals to line up the decimal points, fill in the zeros, add the numbers and bring the decimal point straight down. Linking that procedure to fractions helps the students in their understanding, when students line up the decimal points and fill in the zeros, they found the common denominator and made equivalent fractions, when they added the numbers, they are adding the numerators, and when they brought down the decimal point, they were bringing down the denominator in fractions. That linkage increases student understanding.

The strategy to link topics like the Pythagorean Theorem to the Distance Formula, Equation of a Circle and Trig Identity  $\cos^2x + \sin^2x = 1$  which are all the same formula – just written differently is not only an ELL strategy, it’s a great learning strategy for all students. In the ELL world, the literature refers to it as “Building Background”.

Is there anyone out there who does not want this strategy used with their own family members? Besides building background, the strategy also allows teachers to review and reinforce previously learned mathematics and outside experiences.

The use of body language, facial expressions, hand movement, and visuals all have an impact on students learning effectively and efficiently.

My belief is many teachers know these strategies, the question then becomes why are they not being used?

The answer is too simple. Teachers are being evaluated and graded on test results – not student learning. When too much emphasis is placed on test scores, shortcuts that undercut good instruction take hold to artificially increase scores.

Adding to that are district priorities that compete with professional development meant to hone instructional and assessment strategies. During the last two years, the district placed a major emphasis and spent a great deal of money on “branding” for their own purposes rather than student learning. Educators were distracted by the heavy emphasis on the now nationally discredited school performance framework, growth model, new report cards, training on products – rather than professional development that would enhance instructional strategies to help all students learn.

Putting this into perspective, nationwide many students struggle in mathematics, these struggling students come from all backgrounds. ELL strategies should be embedded in all professional development because it results in increased student understanding, comfort, and achievement. The professional development should be job embedded, that is, math teachers receiving professional development in math, etc.

While many are calling on more emphasis and funding on the ELL population, which needs to be there, that calling will result in better instructional and assessment practices for ALL students in ALL subjects. When there is high quality instruction in ELL classrooms, all other children who may struggle will also receive quality instruction.