



Improve Teacher Skill to Increase Student Understanding

 ALL LEARNERS NETWORK

By: John Tapper, Ph.D

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We wish it were as simple as finding a great resource that could be useful for every student regardless of the skill of the teacher. But you know it isn't.

Recently I was at a conference where All Learners Network kept a booth. I usually spend my time with teachers and administrators during a session, so it was new for me to be in the exhibit hall with our sales folks. It was an interesting experience in a number of ways. I got to see drones fly around the exhibit hall, hear about how AI can replace humans in many fields (teaching?) and listen to a wide variety of salespeople talk to people about what they were selling. Hearing the way math improvement is represented by some (not all!) vendors is the reason that I feel compelled to write this blog.

What everyone – from curriculum sellers to online tech platforms – told potential customers was some form of, “If you use our product, your teachers don't really need much training. It's ‘Open and Go’”. The ever-so-appealing line that purchasing a resource will solve the problem of diverse needs in the classroom, unfinished learning from one year to the next, and professional development of teaching staff. If only it were so.

Some math programs are better than others. We tend to like programs with lots of resources that can be used for differentiation better than those that are more scripted. Still, no matter the program, curriculum alone won't improve outcomes for your students. The best schools and worst performing schools are using the same math programs. We have, on several occasions, worked in two districts which (essentially) swapped their program for the program being used in the other district. Did it make a difference? Not really. Whenever we are asked which math program is best, we say that



we are “program agnostic”. I am so much this way that, when I was recently asked which program a district should switch to, I told them to see if a neighboring district had a program they were getting rid of. Then they could save the money and spend it where it will really matter: professional development.

The skill of the math teacher is what makes a difference to student achievement. In places like Japan, and Finland, where national math achievement is often touted there is only one, minimal, curriculum. It focuses on deep understanding of rigorous mathematics and uses teaching methods that de-emphasize memorization in favor of exploration and meaning-making by students. In the U.S. we seem to prefer (at least on an economic level) approaches that we believe will be fast – *just learn the formulas, I'll give you notes of the important things you should know (memorize), do this online program for just 10 minutes a day...*

At some level, I have to believe that educators know that these shortcuts don't improve student outcomes, especially for students who consistently have lower test scores. In most things, quick and easy rarely means, “well done”, or “thorough.” It doesn't in math education, either.

What about AI and online math learning? Maybe someday. It isn't that I am against technology. But - the learning platforms I've used pay little attention to students developing their own understanding. If a student gets a problem “wrong”, the program either reroutes them to a simpler version of the problem and/or gives them an example or explanation of how to solve the problem “correctly.” Again, it would be nice if this approach worked for most kids. We have 50 years of data on math achievement in the U.S. that tells us otherwise.

Teachers have to learn more about the math they teach, especially at the elementary level. Deborah Ball and Heather Hill have written extensively about this. They need to have a deconstructed understanding of math that includes knowing and understanding a wide variety of strategies that students might use to solve problems, not just the one that a textbook has labeled *the right way*. Pam Harris calls the math she taught in high school, which focused on memorization and a single approach, *fake math*.

While I know that not everyone will like hearing it: The way to improve student understanding of mathematics is to improve teacher skill with teaching it. When teachers are more skillful, more students – especially students who do not look like the teacher – will be more successful. The way to do this is not with a new math program, the latest online math tutor or “tips and tricks”. The way to more skillful teachers comes from deep, sustained professional learning.

If more math for more students is your goal, if more effective teachers is your goal, if closing achievement gaps for students living in poverty, students of color, or students with learning differences is your goal, we can help.



What Now? Scan the QR code and scroll to the bottom of the post for links to next steps



1. Download our book to read more from John and our ALN team.
2. Check out our events and workshops to learn more.
3. Bring All Learners Network (ALN) into your school or district for embedded professional development.

