From: Heather Ruelas
Sent: Monday, March 1, 2021 12:05 PM
To: MATHFRAMEWORK
Subject: [EXTERNAL] Frameworks Comments

Hello,

My name is Heather Ruelas and I teach 8th grade math although in the past I have also taught 6th and 7th grade math. There are some really good ideas in the frameworks. For example, I like the chart on line 285 comparing non effective practices with alternative methods of teaching math. I especially like the ideas about focusing on clusters from previous grade levels with how it relates to upcoming content.

I do, however have many concerns that I believe must be addressed. I think that there is a lot of negativity around procedural practice. I believe, and research has shown, that learning math has to have conceptual and procedural go hand in hand. "Students need both – procedural fluency and conceptual understanding," (Willingham, 2019). I think that the frameworks has a focus on conceptual and not enough describing about the importance of practice and building muscle memory. It leaves readers into believing that we should throw all procedural practice out the door.

In addition, I see that a lot of this frameworks has been brought up about the equity of education. There are things that I would like to point out. One thing is that, while it is ideal to make sure each student has an equitable education, the reality is that we have students from all different households and nothing will ever be 100% equity. Especially those of us working in title 1 schools. Many students don't have the support at home that others may have, they may have both parents working, a single parent household, many kids in the family, etc... I have a lot of students whose parents do not help them understand and haven't built a foundation on the importance of education. While other students have had many supports since elementary school. These students may be in different places in their education. Cognitive development also is different for each student.

"Because cognitive development encompasses a broad range of skills, behaviors, and concepts, children display great individual variation in their development from birth to 5. Prior experiences, cultural and linguistic backgrounds, temperament, and many other factors can impact the rate and course of cognitive development. Children with disabilities may require extra support as they use their senses and bodies to explore or as they describe their scientific investigations. The instruction and learning opportunities young children experience set the stage for their cognitive development and success" (Cognition, 2020).

While placing them in the same environment as the struggling students can be helpful to some, it can also be harmful to the students being brought down from Algebra 1. From my experience, I have students who can't tell the difference between the multiplication symbol versus the variable x in 8th grade while the Algebra 1 students are working on graphing inequalities or solving systems of equations (something they are also supposed to learn as an 8th grader but struggle immensely). Group work is usually completed by the higher students while many of the struggling students don't try or give up (not all but many). My high students then ask to work individually because the low students aren't giving any effort, haven't completed homework, or aren't listening. Now we know this doesn't happen with all but it definitely happens with some. I see it frequently in a title 1 school that has behavior issues. Also, how deep can we get into conceptual understanding and reading

complex story problems, when many of the students struggling in math are also struggling with reading? Many of my 8th graders are reading "Dog Man, Diary of a Whimpy Kid, or Magic Treehouse books" which are all at elementary level reading. The grade level books have to be read to them in many cases or they won't read it. Even then, some students give up, start causing disruptions, or simply try to take a nap at their desk instead.

While I know the standards say that conversations will be richer and deeper in context, how much of the core standards will be able to be covered in a program like it is being proposed? One article describes that there has been debate over this for years, that diving too much into the conceptual could mean that standards are being sacrificed (Jaschik, 2012). Unless the standards are reduced and we cover half of what we cover now (if we even get to that much), students will have huge gaps by the time they reach high school. Reading the examples of lessons and projects, I can see that many are covering weeks or months worth of time. While it is trying to bring in tables, graphs, proportions etc... into one project over a couple weeks, it will not be enough for students to then turn around and apply that to various problem types, especially if we are not including in there some repetitive practice that include different ways of presenting equations or scenarios. Looking at this seems like maybe we can get to 1 problem a day and have a deep discussion about it, but where does any practice come in or direct instruction for those students who do need that? Especially if we are at the agreement that homework isn't helping and that in class practice is more effective with immediate feedback.

Also, it sounds like we could be eliminating the calculus pathway. I know there are comments about who really uses calculus? However, it does actually come up in STEM fields. There are medical programs, engineering programs, computer programs, that all need this pathway. I have students who want to be computer programmers, game designers, even my husband who is learning networking for internet is learning that he has to use some of these math concepts. I feel we need to make it understood that this will allow for different pathways and not the elimination of an advanced pathway for those students who are interested in those fields. Maybe instead of the split at 6th grade, we could split at 8th, having gifted students who have tested at higher than grade level go into Algebra 1 and the other low/medium/high students in 8th grade math still driving these discussions. Algebra 1 should be an option but not eliminated.

Finally, as a millennial white woman, married to a man from Mexico with mixed racial kids, and parents who are gay, I actually am shocked by the examples given on lines 803 to 830. For a California frameworks to have examples including the stigma of a Latinx family where the wife is at home and the husband works in construction is very stereotypical. Reading this to my husband he was very offended. As a math teacher, I would rather leave much of these discussions to social studies and language arts. When will we get to practice and teach math concepts if we are spending weeks reading a book even though we are bringing some math problems to it? Or having community members visit our classrooms and writing letters to the senators, etc... It sounds like a lot of these ideas should be for language arts, social studies, and science teachers and we could partner with them to have those cross curricular moments. However, for us to be taking all of our class periods on this seems that actual math practice is being left in the dark.

Thank you for your time in reading this and I hope you will consider these comments when revising the frameworks.

Heather Ruelas

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