

Comments on the proposed 2021 California Mathematics Frameworks

I write from a background of 35 years in the classroom with numerous ways to demonstrate success, including teaching awards. I have worked with Jo Boaler and respect her achievements.

But I take great exception to her attacks on gifted education. In this Framework, and other places, she creates straw men, then burns them, producing heat but no light. Her descriptions of gifted education are inaccurate and based on 'worst practices'. Public policies should be based on best practices.

I don't have room for direct quotes here, but the Frameworks suggest that notions of 'giftedness' necessarily imply an attribute which is fixed and preordained, so that the gifted student is chosen or anointed. This is a primitive view of the notion. In my practice I have seen kids acquire and lose a gift. I have seen a gift die from lack of nurturing, and lay dormant from not being awakened.

Most often, I have seen kids (and I'm talking about 10% of those in my classes) who are bored in class, have already mastered the work, and are not learning anything. (And another 10% who are learning by rote, despite the teacher's best efforts). So how do we address the needs of those learners?

Acceleration does not mean shallowness. I have seen it used as an effective tool for meeting the needs of gifted learners. This does not negate the comments about calculus being the keystone course in high school. I agree with the Frameworks in this point. But the Framework quotes Bressoud's work (2017, and there is other similar data) as if it applied to all acceleration. This is a flawed use of research findings. There are many reasons, including the improvement of shallow statistics, that schools push students through calculus without adequate support. Just as an example, Newsweek rates high schools partly by the percentage of students taking Advanced Placement courses. "Taking", not "succeeding in".

Another flawed use of research is the reference to Leslie and Cimpian (2015). That study is a survey of academics. The conclusion may look 'staggering'. But look at reality. In music, in literature, in sports, in entertainment, women and minorities are amply represented. Yet few would disagree--and we don't need a study to assert this--that these are areas where people are often deemed 'gifted' or 'talented'. The research says more about academia than about teaching or students' brains.

I tried to look up the reference given to the work of Burris, Heubert & Levin (2006) in my own city (New York), but the writers don't include a full reference in their list.

I note in passing that the writers plug one approach ("data science") to "remedy" acceleration. There is no data supporting this approach either. I am not sure that "data science" is even mathematics: data science is empirically verifiable in a way that mathematics is not. This is more than a philosophical nicety. I want my students to learn to make logical inferences. Data science—if taught correctly—can do this. But if taught poorly—and tested in worse ways—it becomes number crunching. I would have to see a mathematics course based on "data science" to believe that it is really mathematics. I have not seen enough yet of such material..

Fragility? Jo Boaler has been out of the classroom too long. \*ALL\* kids are fragile--especially adolescents. The propaganda films referenced here are just that--cherry-picked examples of kids who

have been mistreated by the system. I have seen hundreds of students who have benefitted from gifted programs. The Frameworks offers no data.

Thus there are flaws both in the evidence and the logic of passages relating to gifted education.

The main question is: what do you do with students who progress quickly? Who need more than the average curriculum delivered at the average pace? I don't have a really good answer. But I don't see one in these Frameworks either.

The trite answer, which I fear will be implemented with these Frameworks, is "differentiated instruction". Uh-oh. To me as a teacher, this means more work for me, with no more time, no more support--and no more pay. If I have 30 kids in a class--and I usually do--there will be 3 kids who are bored, and 3 kids who are struggling. The top and bottom 10%. Each group will need significant attention, including separate homework and separate classroom environments. Otherwise they will continue to be bored or to struggle. Unfortunately, in both cases, they are likely to pass the state tests, either by showing what they knew long before the lessons or by skimming the trees. So there is no reason why I should pay more than minimal attention to them. That's not what I'm paid for.

"Differentiated instruction" in most contexts is code for "dump it on the teacher". It sounds good to academics, but plays out miserably in the classroom.

I would like to see a more rational way to meet the challenges of extremely fast (and extremely slow) learners. These are not fixed labels. They are descriptions of where students are here and now. Don't beg the question.