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High school is a complex piece of the education system. What happens there has an impact on what happens for students for most of their adult lives. It can lead to college and career or to a lack of those. It can determine how much money students make in the future, whether or not they go to college, whether or not they find a fulfilling career that can support a successful life. Right now, high school is also a mechanism for sorting students, often by race and income. In this short piece, I'd like to explore how this happens and what some states are trying to do about creating better odds for student success through mathematics.

Tracking is ubiquitous in American high schools. This is a uniquely American approach to math education. In Europe, for example, many countries promote a comprehensive system of math teaching that holds off differentiation of students by ability until they reach college. It's possible that tracking is an artifact of a system of deliberately sorting students that existed in the 20th century. It may be that secondary math educators don't get enough training to feel comfortable teaching a heterogeneous class of students. Or tracking may simply represent a lack of imagination. We teach the way we were taught. We expect the system to be the same one that existed when we were in school. Whatever the reason, tracking exists in almost every high school and has the same detrimental effects everywhere.

Tracking perpetuates bias and limits opportunities for poor students and students of color. While the number of tracks in high schools is somewhat variable (as many as 6, as few as 3) observers frequently note that in the upper tracks, especially honors tracks, white and middle-class students are overrepresented. In the lower tracks, the opposite is



true. A principal who hired All Learners Network (ALN) to work with his school noted, “All of our black and brown students seem to end up in the lower tracks. It didn’t seem to me that was a coincidence.” No, probably not. Most school tracks that are labeled as high achieving (think “gifted and talented”) are overwhelmingly white and middle class. Confronted with these statistics the most common response from administration is that the phenomenon is a “coincidence”, “unexplainable, because students have to qualify academically,” or “the result of poor parental support.”

A parent, writing in the New York Times, in response to a Times article on tracking, reported that her biracial twin children had been tracked based on the color of their skin. One of the twins looked Caucasian while the other looked more African-American. Despite higher grades and a better score on the 8th grade Algebra entrance exam, the child with blacker skin was not chosen for the highest math track, while their lower performing sibling was. When confronted about the discrepancy the school doubled down and said that the darker skinned child “wasn’t ready.” Whatever the qualification for higher level tracks, teacher judgment almost always plays a role. This is where bias can lead to upper tracks filled with white children and lower tracks composed of children with black or brown skin.

Tracking matters because it sends a clear message about expectations and perceived ability. Last spring I took a group of Vermont middle school teachers to visit a school in the Midwest. They visited classes, met with other math teachers, and shared practices. It was a productive exchange for everyone involved. In debriefing with the Vermont teachers about their experience, the overwhelming impression they left with was the damage the tracking system was having on students.

Vermont teachers were amazed at how the message sent by the tracking system had been so assimilated into the students’ ideas of who they were as mathematicians. In fact some of the students they spoke with during and after the math lesson shared some of their feelings about math such as: “We don’t work on that kind of math. We’re in the Math 3 group. That’s Math 1 stuff.”

Some states are trying to address this issue by adapting a new stance about math in high school. While one could argue that the system could still perpetuate elements of tracking, the conversation about giving students choices and putting learners of different abilities together is gaining traction.

In Oregon, for example, the pathway students take through high school incorporates both heterogeneous groupings and choices that emphasize math learning at every level. In the Oregon model, students take Algebra 1 together in their first year of high school. There is still the potential for schools to sort students, privileging some over others. But the idea, in this plan, is that students learn together. In their sophomore year of high



school, students take one semester of geometry and one semester of what the Oregon Department of Education is calling, “Data Science.” The exact scope of the course is not entirely clear but revolves around statistics and their use. In the junior year of the Oregon plan, students choose a path. They can continue into a pathway that leads to AP Calculus. They can choose a pathway that leads to AP Statistics (Data Science) or they can choose math classes that are rigorous but vocationally centered. The idea is that students take four years of math and that, regardless of the pathway, the math is rigorous and leads to college and career readiness.

The Oregon plan, as well as similar plans in California, and New Mexico, represent a positive step in the thinking about equity from a bureaucratic perspective. On the ground, the idea needs more work. Right now, elite colleges see Calculus as a prerequisite. Alternatives are not looked on as favorably. Calculus is meant to be a pathway for STEM careers, but an application is stronger with calculus, even for humanities majors at most competitive colleges. There is also the potential for high schools to track the students they perceive as most capable into calculus, while using the other pathways for students deemed less capable.

The national conversation about alternative pathways through high school math is a good beginning to address the inequity of tracking in high school math. Heterogenous math classes and four years of math will have a positive impact on math learning for non-white, non-middle class students. To move forward, colleges and universities must become involved to help change the existing perceptions and culture.

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1. Check out our Math Menu to see how you can provide differentiated practice while all students are in the same room.
2. Read our blog “Disrupt Tracking in Math Classrooms”
3. Bring All Learners Network (ALN) into your school or district for embedded professional development.

