De-tracking – The path to creating equity in math class

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Abstract

Tracking in education is a process that started in the early 1900s. What started as a tool to help migrant students, evolved into a discrete form of segregation. Tracking normally negatively affects marginalized students. It often separates students by socioeconomic status and race. Black and Hispanic students normally make up a small percentage of students placed in higher-tracked math classes. When students are placed in a lower-track math class, they often continue that track until they graduate, which gives them little to no room for advancement once they are on that particular track. Tracking is developed by grades, test scores, and possibly a biased teacher's idea of perceived student potential. To remedy the problems that tracking creates, de-tracking in classes, especially math class, must occur. De-tracking can help enable equity in math classrooms. It will also help close the opportunity gap which in turn can help close the achievement gap between minority and nonminority students. There has been a lot of research on tracking but not as much on the benefits that de-tracking can have on marginalized students. My research will study the benefits of de-tracking for marginalized students. The research will also study the confidence and mental psyche of students that are placed on lower tracks versus higher tracks. Given the opportunity, all students can be successful. De-tracking can help all students grow and be victorious in all classes, especially in math class.

Keywords: Tracking, De-Tracking, Marginalized students, Opportunities, Math, Confidence

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All students can learn. Many students learn at a different pace and in different ways. A student's socioeconomic status should not determine the quality of education that they receive. All students should have the same opportunities and resources on their academic journey. Access to quality teachers, a rigorous curriculum, and high expectations should be the bare minimum for all students. When students are tracked in education, it completely negates the idea of equal opportunity. Tracking in most subjects, especially math, can start as early as 5th grade. Based on a student's test scores, grades, or even their perceived potential, students could be promoted to an advanced math class over their peers. A 2016 study by the Brookings Institution noted that for eighth grade, the average state tracked about three-quarters of its math students (Coe, 2020). Many of the students placed on the lower-level track were African American, Hispanic, and other marginalized students. Some assert that the lower the family income of the students, the more likely it is that they will be in the lower ability groups or vocational curriculum (McCardle, 2020). I do question how an educator can accurately gauge a young student's mathematical academic potential at such an early stage.

Tracking

When students are tracked and put in a normal or lower-level math class, they normally receive different lessons, different curriculums, and sometimes different classrooms from students that are put on advanced tracks. Tracking in education began in the 1930s (systemic racism). In the 8th grade, nearly 75% of students are tracked. What started as an idea to help support the educational system for many immigrant students, has become a form of segregation and inequality for some students, especially marginalized students. The initial objective of tracking in education was to provide many students with limited English Language comprehension support

to help them understand the language and concepts. However, the process of tracking in education has evolved into an entirely different concept. Now, the purpose of academic tracking is to divide students by their perceived abilities and to help all students learn best by a particular educational path. Since the inception of tracking began, the objective has seemingly turned into a pitfall of inequalities for many students, especially students of color and lower-income students. The inequalities of tracking have been in place for many years. During the 1980s, Jeannie Oaks brought to light a theory that many low-income and minority students were placed in lower tracks even when it wasn't a reflection of their academic abilities. She addressed the issue of "industrial schooling", suggesting that upper-class students received more educational opportunities while lower-income students were funneled into vocational programs and given limited educational opportunities (Barrington, 2020). The newer idea of tracking, which is supposed to group students by ability, often only separates privileged students and non-privileged students. This process enables the divide between lower-class and upper-class individuals. For privileged people to obtain an advantage in the economy, they had to make sure their children received a better-quality education than the children of people in lower classes, and grouping students by ability level achieved this goal (Valencia, 2018).

Tracking gives marginalized students fewer opportunities to take advanced classes. It creates unequal education and produces less awareness and knowledge of advanced topics. When students are tracked in lower-level math classes, it doesn't prepare them for college, nor does it give them the necessary 21st-century skills that are needed to be successful in life. Instead of a rigorous curriculum, low-tracked math classes emphasize good behavior, menial skills, and the process of following directions. High-tracked math classes emphasize educational efficiency, self-efficacy, student agency, logical thinking, problem-solving skills, and other necessary 21st-

century skills. There are different expectations for students on a high-level math track and a lower-level math track. Students in higher-tracking mathematics classes have much greater expectations. Some detractors of the tracking system also suggest that teachers of low-achieving students have lower expectations of their students and they do not provide the challenge and the drive needed to push those students to improve themselves (Barrington, 2020). When students are tracked by their perceived math abilities, students of color are overrepresented in low-track mathematics courses. Finally, when rich and poor students, white students, and students of color are by and large in different academic programs, the equalizing power of integration—which helps to promote equitable distribution of resources—is weakened (Potter, 2019). The separation of class and race that tracking has created has generated even more inequalities and inequities in the educational system.

Tracking is a modern-day version of segregation. Academic tracking—and the racial and socioeconomic segregation it often creates—raises a number of concerns about equity (Potter 2019). For example, it is not uncommon for tracking systems to encourage a sort of segregation within the school system (Barrington, 2020). Tracking is supposed to separate students by ability, but it often separates students by race and socioeconomic status. It also reinforces social disadvantages. Research suggests that, aside from their academic preparedness and ability, students' degree of privilege in the form of families' resources, access to test prep, and social capital, as well as the implicit biases of staff and teachers may come into play (Potter 2019). It has been found that many low-track classes are comprised of minority and low-income students while the upper tracks tend to be dominated by students who come from higher socioeconomic standing (Barrington, 2020). The modern-day process of tracking presents more of a racial division than an ability division. Students are separated into groups but not always by the

intended goal of separating students by their abilities. The existence of racial separation in the United States caused an abandonment of the common school movement and justified changing students into groups despite being in the same building (Valencia, 2018). The idea of tracking only further divides the school systems into a separation of socioeconomic status and class. Spring (2016) argues that, through tracking, schools play a role in economic segregation, social reproduction, and maintaining social class distinctions (McCardle, 2020). To rid the world of social and economic segregation, we must first attack this problem in our school system. A student's socioeconomic status should not determine what classes they take in school.

The learning opportunities for students in nonadvanced courses are significantly inferior to students in advanced classes. In other words, research has found that students in lower-level courses have different learning opportunities within their courses than those students in more advanced-level courses (Minor, 2016). Students in advanced-level courses receive a better education than students in lower-level courses and grade-level courses. Past research has found variations in learning opportunities among the classrooms of advanced courses (Schmidt & McKnight, 2012; Covay Minor, 2016) analogous to the variation that is between levels of courses. Another downside of tracking is the length of time that a student is placed on a lower track. When a student is placed on a lower track, they often stay on a lower track in math until they graduate from high school. Lower-level math tracking leaves little room for growth. There is also the fact that many students who enter ability groups or tracking systems end up staying there throughout their academic career – their abilities are not always reevaluated between grades to determine whether a change needs to be made (Barrington, 2020). To adequately level the playing field, a reevaluation process should be done periodically in terms of tracking to ensure that all students have an opportunity for growth.

Confidence

Most students are completely aware of what track they are on academically. Students understand the concepts of higher-level tracking and lower-level tracking. This awareness of the tracking system can have a major impact on students in many ways. Tracking can impact a student's confidence, whether it be negative or positive. When students are tracked in school, it could affect their confidence level in many of their classes also. When students are placed in high-tracked classes, many label them as "the smart kids, simply because they are in an advanced class. The track that a student is placed on can also influence their math academic achievement. For example, when students are placed in a high-track math class, they may exude more confidence in math. And just the opposite, when students are placed in the lower math track, it could affect their confidence negatively in their mathematics class. Another potential disadvantage of the tracking system is that by dividing students into a group by their academic ability, the educational system may cause those students to self-label themselves as inferior to upper-track students (Barrington, 2020). Many studies have shown that self-esteem is correlated with academic achievement. In theory, tracking should be a system that promotes academic success. There is, however, the possibility that placing a student on a lower track could lower his self-esteem – each case is different (Barrington, 2020). The idea of tracking influences a student's confidence. That influence could be negative or positive depending on what track they are placed on.

Quality of teachers

Tracking can also help determine the quality of teachers in the classrooms. During the time of Separate but Equal, teachers were separated based on their skills (Valencia, 2018). From my own decades of experience, I have noticed that all math teachers can teach lower-level math

classes, but not all can teach upper-level math classes and advanced math classes. The distinction in classes also drives the more advanced teachers to teach the more advanced classes. Racial inequalities caused educational inequalities to rise; the least qualified teachers were most often placed in lower tracks, causing those already disadvantaged students to be even more disadvantaged (Valencia, 2018). Another major problem with tracking concerning teachers is the expectations. When students are placed on a lower track, the expectations decrease. Teachers held different expectations for their students. The higher the track, the higher the teacher's expectations will be. If a teacher has high expectations of his or her students, then the students will be more motivated to study, which increases the chances that the students will be academically successful (Valencia, 2018). Not only do students in upper-level courses get more qualified teachers, but they also get the appropriate resources necessary for their students to be successful. Since the best teachers and the best students were put together, they were given the resources to allow their students to flourish. Justifying the separation of students into groups also allowed teachers to prime their students through tracking (Valencia, 2018). Teachers play a major role in a student's academic career. Having a high-quality teacher in the classroom is essential to student success. If high-quality teachers are not placed in classrooms with lower-level students, which are typically marginalized, the academic gap is sure to increase over time.

De-tracking

All students can learn. The process of De-tracking exemplifies this theory. De-tracking in math creates equity and inclusion for all students. It can also help close the academic opportunity gap. De-tracking could help reduce inequalities not just in math but in education itself. It would allow all students the same opportunities, especially Black, Hispanic, and lower-income students. There are many benefits of de-tracking. The process of de-tracking sets high expectations for all

students. When students are placed on a lower-level track, the expectations aren't set very high. De-tracking would allow all students to have the same high expectations. This process can also create opportunities for students that may not normally have those opportunities like Hispanic students, African American students, and lower-income students. It can also expose those same students to a high-quality, and rigorous curriculum. The scores of the students were also significantly higher on various achievement tests, and the increased success from de-tracking was applied to students across the achievement range, from the highest to the lowest achievers (Boaler, 2019). De-tracking can have a positive effect on marginalized students. The opportunities that it would have for those students could greatly improve their educational trajectory. Lower-level students can perform better in academically de-tracked classrooms. When schools and other education institutions move to de-track mathematics classrooms, opportunities for student learning increase (Boaler, 2011). Taking advanced math classes in middle school can benefit students later when they are at the high school level and the collegiate level. In addition to achievement gaps within levels of course taking, Riegle-Crumb and Grodsky (2010) found that those students who take advanced mathematics courses leave high school with higher overall test scores than those students who do not take advanced mathematics courses (Minor, 2016). The process of de-tracking would give all students the chance to be successful in school, now and in the future. We have math and science geniuses in our low-income communities and in schools that serve students of color. We need to give those students the tools to thrive (Jones, 2018). De-tracking in education allows marginalized students to be successful in school. It provides them with the same resources as more privileged students.

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Civil Rights Data Collection for Eight Graders 2015-2016:

Approximately 4.4 million students in the country took Algebra 1 in eighth grade.

African American and Hispanic students make up less than 30% of those students.

White students make up over half of the students that took Algebra 1.

Future Implications

The process of de-tracking can have many future implications. One major future implication is the American College Testing (ACT) and the Scholastic Assessment Test (SAT). The math portion ACT and SAT cover several math classes. Many students that are placed on the lower track may never take advanced math courses. The SAT covers up to Precalculus. Students that are placed on a low or regular track take the standard four math classes that may or may not include Precalculus. Like the SAT, the ACT covers classes up to trigonometry. Students that are placed on a regular or lower-level track may not have the opportunity to take all the math classes necessary to be successful on the ACT or SAT. Doing well on the ACT/SAT is important for many students that want to attend college. Both tests are a requirement for many colleges. With good SAT or ACT scores, it may also increase the chances of students getting scholarships for college. The scores on both tests can give colleges the chance to see what students know academically because a student's GPA may not tell the full story of a student's academic ability. Doing well on either test could have future implications concerning college. With tracking, students that are placed on the lower tracks have a significant disadvantage concerning the ACT and the SAT. Marginalized students are already at a disadvantage because of the cost of test preparation for the ACT and the SAT outside of school. Some companies charge between 40 to 100 per hour, which is not affordable for many lower-income students.

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The effects of tracking can have a lingering effect on students. When students are put on a low mathematics track in middle school, it could hurt them concerning taking advanced classes in high school. The negative effects of not taking advanced mathematics classes in high school could have less than desired consequences in college. Unfortunately, researchers have come to expect significant differences in achievement outcomes between students who have taken differing levels of courses given the years of research on tracking, which has found that students in lower-level courses have fewer opportunities to learn (i.e., specific situations that cultivate learning) than students in more advanced level courses and thus lower achievement (Minor, 2016). Taking advanced math classes at an early age can also persuade students to take more advanced math classes in college. Taking more advanced math classes in college could influence the career choice of students. Past research has found variation in learning opportunities among the classrooms of advanced courses (Minor, 2016) analogous to the variation that is between levels of courses. When students are placed on a lower track in mathematics at an early stage, it could deter them from taking higher-level math classes at a later stage in their educational journey. Students on lower tracks may not have an adequate background to perform well in advanced classes even if they are given an opportunity to take advanced courses later in their academic careers.

Exposure to advanced mathematics classes could be critical to decreasing the achievement gap in mathematics between marginalized students and all other students. When students are exposed to advanced math classes at an early age, it gives them a better chance of being successful in advanced math classes in high school and college. If African American students and Hispanic students are exposed to advanced math classes in middle school, it can help increase the chances of them taking and being successful in advanced math classes in high

school. They found that White students who took advanced mathematics courses scored 9.5 points higher than their African American peers on a mathematics test in 12th grade, whereas White students in the non-advanced mathematics courses scored 6.4 points higher than their African American peers on the same test (Minor, 2016). Allowing all students to take advanced classes in middle school could have positive future implications for all students, especially marginalized students. For this to occur, de-tracking seems to be a very clear solution to many of the ever-growing problems in education. For all students to have equality and equity, de-tracking must be implemented throughout our educational system.

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