Ability Grouping and Tracking

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Introduction

Schools and school systems routinely sort students into distinct learning environments, often based on their measured skills.

Second-grade teachers sort students into informal reading groups, sending proficient readers with chapter books to one side of the classroom and struggling readers with phonemic worksheets to another side of the classroom. Middle schools sort students into tiered math courses, launching some adolescents on an accelerated path toward advanced STEM training while targeting others for foundational arithmetic instruction and applied mathematics. Selective high schools and tiered programs within comprehensive high schools reserve advanced learning opportunities for college-bound youth while providing more basic academic or career-focused instruction for others.

These practices, collectively referred to as "ability grouping," aim to address fundamental challenges associated with providing instruction that meets students' diverse needs and interests. Advocates of ability grouping argue that these strategies benefit all students by allowing teachers to efficiently and effectively tailor instruction to students' diverse skills, knowledge, and goals.

Ability grouping practices originated in the early 20th century as educators and educational policymakers—often informed by eugenics—responded to rapid urbanization and mass immigration by tracking high school students into separate vocational and college preparatory tracks.1 The ability grouping systems that operate in contemporary U.S. high schools ostensibly allow more flexibility and movement for students than previous systems of academic tracking. However, empirical and conceptual connections between ability grouping practices and educational inequality persist. Ability group assignments shape the rigor, quality, and content of the instruction students receive, the characteristics of the peers students learn and interact with, and students' status in the school's social hierarchy. As a result, relative to their peers placed into lower-status and less advanced ability groups, students assigned to high-status or advanced ability groups learn more, reach higher levels of educational attainment, and enjoy a wide range of desirable adult outcomes. Since ability grouping strategies often disadvantage poor and minoritized students, they frequently contribute to class-based and racial gaps in a wide range of outcomes. While many small-scale equity-oriented ability grouping reform strategies have shown

promise, larger-scale policy efforts have largely failed to break the link between ability grouping and educational inequality.

Key findings

Key finding #1. Ability grouping practices take multiple forms across K–12 education.

Elementary schools typically assign students to skills-heterogeneous classrooms. Within those classrooms, however, teachers often divide students into small skill-based groups, particularly for math and reading instruction. In middle and high schools, by contrast, the most common form of grouping is between courses with differing content (e.g., algebra, geometry, trigonometry) or differing levels of rigor (e.g., "honors," "college prep," "foundational"). Between-school skills grouping—as in the German Gymnasium and Hauptschule model—is relatively rare in the U.S. but is more common in Europe and Asia.

Key finding #2. Poor and minoritized students have less access to advanced middle and high school courses than affluent and white students.

Ability grouping strategies explicitly sort students based on their prior achievement or other measures of their potential to master course materials. Given well-documented racial, ethnic, and class-based inequalities in student achievement, it is not surprising that racial, ethnic, and class-based gaps exist in access to high-status ability groups. Research on U.S. students' placement in advanced middle and high school courses, for example, indicates that racial, ethnic, and class-based gaps exist even after robust measures of student abilities are controlled for.

Key finding #3. Assignment to high-status and advanced courses boosts student outcomes.

Students who enroll in more advanced middle and high school courses have access to more rigorous and engaging instruction and better educational, postsecondary, and career outcomes. While it is difficult to separate the effects of course assignments from the characteristics of the students assigned to high-status courses, experimental and quasi-experimental studies point to positive causal effects of advanced course enrollments on a range of student outcomes.

Key finding #4. States and school districts continue to experiment with equity-focused forms of ability grouping, with mixed results.

While many efforts to narrow educational inequalities by changing how students are sorted into learning environments have had disappointing results, the effort to identify and implement more equitable approaches to ability grouping continues. Promising strategies include postponing high-stakes sorting decisions, developing fairer strategies for screening students into grouped learning environments, and creating multiple pathways for students to receive instruction that suits their skills and interests.

Historical background and a note on language

Although many use the term "tracking" to refer to ability grouping as a general phenomenon, the term most precisely describes the grouping practices that operated in many comprehensive American public high schools through the middle of the 20th century. In tracked schools, leaders sorted students on the basis of achievement and educator recommendations into groups—referred to as "tracks"—in which students took each of their courses. In 1965, for example, Chicago Public Schools assigned students to honors, regular, essential, or basic tracks, and those track assignments determined all of the courses on a student's schedule.[2]

Beginning in the late 1960s, in response to the equity-oriented critiques of tracking emerging from the civil rights movement and changing thinking about the nature of intelligence, many U.S. high schools dismantled overarching tracks, creating a course-based grouping system. This structure made it possible for students to enroll in high-track courses in one subject area and low-track courses in another area. In the process, it created new opportunities for students to sort themselves into courses. This so-called unremarked revolution in American high schools resulted in a system with lower scope and higher electivity than the prior, overarching tracking systems.

By the 1980s, this course-based ability grouping system was the norm in American public high schools.

Evidence supporting key findings

Key finding #1. Ability grouping practices take multiple forms across K–12 education.

A wide range of organizational practices fall under the umbrella of ability grouping, including differentiated instruction within skills-heterogeneous classrooms (common in U.S. elementary schools), between-class sorting within skills-heterogeneous schools (common in U.S. high schools), and between-school sorting (common in Europe and Asia).

In a 2018 survey of U.S. public educators, 24% of elementary school principals reported assigning students to learning environments by ability, while 48% of middle school principals and 40% of high school principals did so.[3] However, there are several reasons to suspect that these data understate the prevalence of ability grouping practices in contemporary schools. Educators and educational systems use many different systems to sort students into learning environments and many different terms to describe the practice, and even expert observers disagree about what counts as ability grouping. Educator discomfort with ability grouping may further discourage frank discussion about the use of ability grouping strategies. While some educators believe that grouping is a necessary and fair strategy for effective teaching, others see it as fundamentally unjust.

Sociologists of education identify four domains on which ability grouping systems vary: (1) inclusiveness, the extent to which an ability grouping system makes high-level instruction available to students; (2) selectivity, the extent to which the grouping system produces homogeneous learning environments; (3) electivity, the extent to

which students can choose their own groups; and (4) scope, the extent to which groups in one academic subject are associated with classroom placements in other academic subjects.[4]

In this framework, scope is the most important distinction between the within-class grouping practices common at the elementary school level and the between-class or between-school grouping practices more common in secondary education. Many U.S. elementary teachers run reading groups for part of the day but offer ungrouped instruction for the rest of the day. This low-scope grouping strategy allows proficient readers to dig into chapter books and developing readers work on phonemic awareness while both groups learn social studies and science together. Between-school tracking systems, on the other hand, are high in scope. Once a student is placed in an academically selective school such as New York's Stuyvesant High School or a German Gymnasium, she is unlikely to take a course with peers enrolled in nonselective or vocational schools. High-scope ability grouping assignments are therefore extremely consequential for students' life outcomes.[5]

The most pervasive form of ability grouping in the contemporary United States involves the sorting of students enrolled in comprehensive middle and high schools into courses differentiated by content and/or rigor. In the 2015–16 academic year, for example, 85% of U.S. public high school students attended a school that made advanced placement courses available to high-achieving students interested in accelerated coursework.[6]

Key finding #2. Poor and minoritized students have less access to advanced middle and high school courses than affluent and white students.

By design, ability grouping strategies direct higher-level instruction toward some students and lower-level instruction toward others. By the logic of ability grouping, such inequalities in resource allocation are attributable purely to differences in students' ability and readiness to learn from instruction.

Empirically, however, ability groupings often correspond closely with broader inequalities related to race, ethnicity, social class, and other important social categories.[7] These inequalities are particularly well studied in the context of U.S. middle and high school course placements. For example, in the 2021–22 academic year, Hispanic students were underrepresented by 40% in Advanced Placement (AP) Mathematics relative to their share in the U.S. public high school population. Black students were underrepresented in AP Mathematics courses by 60%.[8]

Consistent with the logic of ability grouping, students' placements in advanced middle and high school math courses vary with their academic achievement and other measures of their readiness for course materials. But inequalities in access to high-achieving courses exist even after student achievement is controlled for.[9] Scholars point to several factors that account for these inequalities, including between-school inequalities in advanced course availability, teacher biases, and students' own academic identities.[10]

Students can take only the courses available at their schools, and schools' course offerings vary considerably. On average, larger urban and suburban schools offer more

advanced courses than smaller and rural schools. Advanced course offerings further vary with school demographics. Research indicates that advanced course offerings are often limited in schools that enroll large proportions of Black, Hispanic, or Indigenous students and schools that enroll large proportions of students from low-income families and students who are nonnative speakers of English.[11]

Even when courses are available, educator biases and peer pressures may limit access to advanced courses for minoritized students. Educator recommendations and encouragement often play an important role in helping students access advanced courses. Strong evidence suggests that educators systematically underestimate the abilities of students of color and, as a result, discourage promising students from pursuing advanced courses.[12] Student cultures may further contribute to these inequalities since minoritized students in diverse schools often experience advanced courses as unfriendly and exclusionary "white" spaces.[13]

Key finding #3. Assignment to high-status and advanced courses boosts student outcomes.

Scholars have studied the consequences of ability grouping across a wide range of contexts—from elementary school reading groups to German selective high schools. While the findings vary with context, the evidence broadly suggests that students placed in high-status or advanced groups enjoy educational advantages over students placed in lower-status and less advanced groups.

Since middle and high school course assignments are a primary site of ability grouping in contemporary American public schools, the available evidence on their consequences is particularly robust.

Scholars often find it difficult to separate the consequences of advanced course-taking from the consequences of students' achievement, motivation, and academic expectations—each of which likely influences their course-taking trajectories. However, studies using diverse data sources and analytic methods consistently indicate that students who take advanced courses benefit on a range of academic outcomes, including achievement growth, educational attainment, and labor market outcomes.

Some of the most convincing evidence regarding the consequences of advanced course placement comes from research conducted amid recent efforts to reform ability grouping in middle school mathematics.

Many middle schools lean heavily on prior mathematics test scores when they place students into math courses. The most widely studied of these systems places eighth graders who score above a threshold on a prior math test into algebra courses and students who score below that threshold into pre-algebra or general math courses. By comparing the outcomes for students just above this placement threshold with those of students just below it, scholars can take advantage of these formulaic assignments to separate the effects of advanced courses from the potentially confounding influence of student characteristics. Research using this so-called regression discontinuity approach indicates that placement in eighth-grade algebra boosts students' exposure to high-quality teaching and academically achieving peers and results in improved

school attendance and higher achievement in mathematics and other subjects. While not all students who take algebra in the eighth grade remain on an accelerated course trajectory, this research indicates that the academic effects of eighth-grade algebra placement persist into high school and beyond.[14]

This pattern of effects appears to generalize beyond the eighth-grade algebra setting. Indeed, students who do not take algebra in eighth grade but instead are placed into intensive "double-dose" algebra courses in ninth grade experience substantial gains on a wide range of short- and long-term outcomes.[15] More broadly still, evidence suggests that the more advanced courses students take in high school, the higher are their test scores and the likelier they are to graduate from high school, enroll in college, and graduate with a bachelor's or higher degree.[16] These effects appear to be driven, at least in part, by the ways advanced course enrollments influence students' self-esteem and academic engagement. In the longer term, advanced course-taking in high school appears to have persistent positive effects on students' adult income and asset accumulation.[17]

Key finding #4. States and school districts continue to experiment with equity-focused forms of ability grouping, with mixed results.

Building on evidence regarding the long-term positive effects of advanced course enrollments, some reformers have pursued educational equity by seeking to enhance students' access to accelerated courses in middle school. Since schools typically structure mathematics instruction sequentially, middle school math course assignments are thought to be particularly consequential. Students who successfully complete algebra in middle school are often on track to complete calculus in high school. Calculus, in turn, typically serves as a prerequisite for access to many desirable postsecondary opportunities.

During the 1990s and 2000s, for example, California pursued a set of eighth-grade "algebra-for-all" policy initiatives designed to narrow inequalities in middle and high school mathematics by placing all students on an advanced path. On one level, this policy effort succeeded: Eighth-grade algebra enrollments surged statewide during the period. By 2010, nearly two-thirds of California eighth graders enrolled in algebra or a more advanced math course. It is not clear, however, that this effort succeeded in narrowing racial, ethnic, or class-based inequalities in advanced course enrollments or student achievement. Indeed, the increases in eighth-grade algebra enrollments corresponded with declines in student math test score growth, a finding that has led some scholars to hypothesize that peer achievement and teacher quality—rather than course content—drive the effects of advanced courses.[18]

If policies aiming to universalize student access to accelerated ability groups fail to mitigate inequality, one might think eliminating accelerated ability groups altogether is a more effective strategy.

In the wake of these disappointing "algebra-for-all" findings, some California educators began to explore the latter strategy, seeking to delay course-based differentiation by eliminating advanced courses in the middle school grades. Support for this strategy comes from international comparative evidence suggesting that postponing consequential and relatively high-scope ability grouping decisions can help to mitigate

inequalities.[19] Further, this strategy builds on several promising smaller-scale school-based "detracking" initiatives.[20] Preliminary evidence from Sequoia Union High School District suggests that delays to acceleration can reduce inequalities in the short term, particularly when coupled with intensive teacher preparation.[21] However, San Francisco policy's longer-term consequences for inequality appear to have been limited, as students from relatively advantaged backgrounds pursued accelerated course sequences in the high school grades.[22]

Other efforts to reform the ways schools group students for instruction are underway across the U.S. and around the world.

In some cases, these efforts are aimed at eliminating barriers that block high-achieving students of marginalized backgrounds from placement in accelerated or high-status ability groups. For example, replacing systems in which parents and teachers refer elementary school students for gifted education services with systems in which all students are screened via a common metric for these services has been demonstrated to dramatically improve access for students of color, English language learners, and students from low-income families.[23]

In other cases, these efforts involve lowering the scope and increasing the flexibility of ability groupings. Double-dosing strategies, for example, provide opportunities for students initially placed in less rigorous learning environments to "jump tracks" to more accelerated instruction.[24] Rigorous career and technical education programs, meanwhile, potentially allow students to opt into a broad range of differentiated learning environments that suit their interests.[25]

Conclusion

Educators struggle to provide learning opportunities that meet their students' diverse needs and interests. Ability grouping strategies attempt to address this key educational challenge through the sorting of students into differentiated learning environments according to their perceived abilities. Despite persistent and well-founded concerns about their role in the production and reproduction of educational inequalities, these practices appear to be a fixture of contemporary mass education systems.

Educators and policymakers have a wide range of ability grouping strategies to draw upon. Research and policy experience suggest that the link between ability grouping and educational inequality is persistent. However, flexible, low-scope grouping strategies appear to generate more equitable learning and social outcomes than inflexible, higher-scope grouping strategies.

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