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SundayReview | OPINION

Closing the Math Gap for Boys

By DAVID L. KIRP JAN. 31, 2015

ON a recent afternoon, the banter of boisterous adolescents at Edwin G. Foreman High School, in a poor, racially and ethnically mixed Chicago neighborhood, echoed off the corridor walls. But Room 214 was as silent as a meditation retreat. Inside, 16 ninth- and 10th-grade African-American and Latino boys were working, two-on-one, with a tutor. They're among 1,326 boys in 12 public schools in this city who are sweating over math for an hour every day.

Kids like these fare worst on every measure of academic achievement, from test scores to graduation rates. On the 2013 National Assessment of Educational Progress, the average reading and math scores of eighth-grade black boys are barely higher than those of fourth-grade white girls, and Latino boys score only marginally better. Dropping out is a near-certain ticket to poverty, and these youngsters quit or are pushed out at a dismaying rate. Only 57 percent of young black men and 62 percent of young Latino men graduate from high school in four years, compared with 79 percent of young white men.

The teenagers in Chicago's math-tutoring-on-steroids experiment fit this dismal profile. They were as many as seven years behind in reading and 10 in math — 16-year-olds with the skills of third graders. The previous year they missed more than a month of school, on average, and when they did make an appearance they were often banished to the school disciplinarian. Nearly a fifth of them had arrest records. Not only were they disproportionately likely to drop out, they were also prime candidates for the school-to-gang-to-prison pipeline.

Despite waves of reform, educators have had little success in bringing such students into the educational mainstream. Until now.

Here's why you should pay close attention to this experiment. After just a single year in Chicago's intensive tutoring and mentoring program, known as Match, participants ended up as much as two years ahead of students in a control group who didn't get this help. A report that is being released Sunday by the University of Chicago Crime Lab also finds that they performed substantially better on the Chicago school system's math test; their scores on the N.A.E.P. math exam reduced the usual black-white test score gap by a third. This success carried over to nonmath classes, where these students were less likely to fail. Greater success in math also helped get them on track to graduate. It also led them to become more engaged in school, and they were 60 percent less likely than members of the control group to be arrested for a violent crime.

These are staggering results — I know of no initiative for disadvantaged young men of color that comes close. Bring students like these up to grade level and you've gone a long way toward closing the racial and ethnic gap in life success. Yet repeated failures have prompted some researchers to throw in the towel.

For "underperforming students," high schools should "eschew traditional success metrics like test scores," the economists Julie Berry Cullen, Steven D. Levitt, Erin Robertson and Sally Sadoff argued in a 2013 paper. Instead, they should stress "more pragmatic objectives like keeping kids out of trouble, giving them practical life skills and helping with labor market integration." In other words: abandon the hope that these students can make it academically and double down on vocational education.

"In an ideal world," they wrote, "high schools would perform miracles, bringing struggling students back from the brink and launching them towards four-year college degrees" — but efforts to achieve this on a large scale would probably be "extremely costly and largely ineffective."

A colleague of Mr. Levitt's, the Nobel laureate James J. Heckman, presents a similar argument on the science of early brain development: "Skill

begets skill, and early skill makes later skill acquisition easier. Remedial programs in the adolescent and young adult years are much more costly in producing the same level of skill attainment in adulthood. Most are economically inefficient."

But these economists are selling teenagers short. As the Temple University psychologist Laurence Steinberg points out in his path-breaking new book "Age of Opportunity: Lessons From the New Science of Adolescence," during the past decade neuroscientists have realized that adolescence, like early childhood, is a "period of tremendous 'neuroplasticity,' " during which the brain has solid potential to change through experience. During the past generation, educators have focused on the growth between birth and age 3, but the teen years may be just as important for shaping a person's future.

As any teacher will tell you, there's no good way to manage a ninth-grade math class in which some students are working on quadratic equations while others are still mastering multiplication and division. There's a "mismatch between what many students need and what schools can provide," Jonathan Guryan, an economics professor at Northwestern University and faculty co-director of the University of Chicago's Urban Education Lab, points out.

The tutoring program tackles this problem with intensive support, providing a safety net for students who have fallen far behind. Working two-on-one, the tutors, most of them recent college graduates, can individualize instruction to suit each student's needs. They are trained not only in how to teach math but also in how to relate to these teenagers.

"It's friendship and pushing — they nag them to success," Barbara Algarin, the executive director of Match Education, which runs the tutoring program, told me. "These students can make remarkable progress when they appreciate that their tutor is in their corner. The math connection leads to better study skills and a love of learning. Grades improve across the board."

American parents spend $7 billion annually on tutoring, in some cases as much as $400 an hour, to reassure themselves that they are giving their children every advantage in the academic rat race, and research on the impact

of tutoring backs them up. But the high cost of traditional tutoring has made it hard to offer this kind of help to the students who need it most. Because the Match tutors earn about $16,000 a year plus benefits, about what other public service programs like City Year pay, the Chicago program is a relative bargain, costing about $3,800 a year for each student. (To put that figure in context, New York City spends more than $20,000 per pupil, and even more in schools serving poor neighborhoods.)

"Just a few years of this type of intervention could bring almost all students up to grade level," Jens Ludwig, a professor of social service administration at the University of Chicago and the director of its Crime Lab, told me. "By then they can benefit from what's being taught in regular classes and have real hope for a high school diploma."

To Mayor Rahm Emanuel, who plans to expand the program, the lesson is plain. "What this shows is, don't ever throw the towel in on the kids," the mayor said last March. What's happening in Chicago shows that, without breaking the bank, the lives of adolescents can be turned around.

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