



Early childhood interventions for low-income children	1	How school quality affects the success of a conditional cash transfer program	18
Educational opportunity for homeless students	6	A path to college completion for disadvantaged students	24
Reducing inequality: Neighborhood and school interventions	12		

Early childhood interventions for low-income children

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Early childhood is an important, but contested, topic of research related to the production of human capital, and the only period of childhood and adolescence with relatively little public investment. Some scholars interpret the early childhood intervention evidence as showing promising opportunities for addressing inequities in human capital, and consequently argue for significant expansion of public investment. Other scholars come to more cautious or even negative conclusions, worrying particularly about the degree of risk and uncertainty in current evidence regarding long-term payoffs to early childhood investments. In this article, we review the evidence on the potential of early childhood investments, particularly center-based early childhood education, to reduce economic inequality.

Which early skills matter for success in school?

If policymakers want early childhood programs (sometimes referred to as preschool) for low-income children to build skills that will generate lasting changes, which skills should be targeted? Table 1 shows selected types of skills and behaviors. Investments in early childhood education could potentially have positive effects on each of these skills and behaviors, which could in turn help to improve subsequent educational attainment, skill development, and labor market participation.

Among these four areas, the largest skill and behavior gaps between high- and low-income elementary school students occur in achievement. For example, data from the Early Childhood Longitudinal study found that for kindergarteners, the gap in both math and reading achievement between the top and bottom socioeconomic status quintiles was over one standard deviation.¹ Although disparities in children’s skills are also evident along a number of different dimensions other than socioeconomic status, including gender and race,

Table 1
Key Skills and Behaviors for Preschool Children

	Achievement	Engagement	Antisocial Behaviors	Mental Health
Description:	Concrete math and reading skills	Ability to control impulses and focus on tasks	Ability to get along with others	Sound mental health
Example test areas or question wording:	Knowing letters and numbers; beginning word sounds, word problems	Can’t sit still; can’t concentrate; score from a computer test of impulse control	Cheats or tells lies, bullies, is disobedient at school	Is sad, moody

Source: G. J. Duncan and K. Magnuson, “The Nature and Impact of Early Achievement Skills, Attention Skills, and Behavior Problems,” in *Whither Opportunity: Rising Inequality, Schools, and Children’s Life Chances*, eds. G. J. Duncan and R. J. Murnane (New York: Russell Sage Press, 2011).

Table 2
Predictive Importance for Later School Achievement

School-entry:	Grades 1 to 8:	
	Reading	Math
Reading	0.24*	0.09*
Math	0.26*	0.41*
Engagement/ Attention	0.08*	0.10*
Antisocial Behavior (- Effect Expected)	0.01	0.01
Mental Health (- Effect Expected)	-0.01	0.01

Source: G. J. Duncan, C. J. Dowsett, A. Claessens, K. Magnuson, A. C. Huston, P. Klebanov, L. S. Pagani, M. Engel, J. Brooks-Gunn, H. Sexton, K. Duckworth, and C. Japel, "School Readiness and Later Achievement," *Developmental Psychology* 43, No. 6 (2007): 1428–1446.

the magnitude of these differences is dwarfed by those related to family income. The income-achievement gap has grown substantially over the past half century, while the black-white achievement gap, for example, has decreased over the same period.

We would hope that effects of K–12 schooling would be sufficient to greatly reduce the gaps that exist at kindergarten entry. Unfortunately, that does not appear to be the case; gaps in all of the skill and behavior areas persist throughout children’s schooling.²

In order to determine which skills and behaviors best predict later school success, we combined six different longitudinal studies from different countries. The results, shown in Table 2, show that school-entry achievement skills are considerably more predictive of future success than antisocial behavior at school entry, and somewhat more predictive than engagement and attention skills.

Taken together, this research suggests that, to have the greatest effect on later school success for low-income children, it is most important for preschool programs to concentrate on early math and literacy skills.

Current preschool investments

Next, we must determine how well current early childhood education programs promote cognitive skills. The sometimes large and enduring differences in early skills, as well as their consequences for later learning, have not gone unnoticed by educators and policymakers. These differences helped to motivate the expansion of Head Start, as well as state

and local prekindergarten programs, and most recently President Obama’s proposed expansion of enrollment in high-quality early learning programs. While hundreds of evaluation studies of early childhood education programs have been published over the past 50 years, only a handful of programs have been prominently discussed in policy circles by advocates and critics: Perry Preschool, the Abecedarian program, Head Start, and more recently some state and local prekindergarten programs, such as those in Oklahoma and Boston.

We use evidence from strong evaluation studies published between 1960 and 2007, looking specifically at effect sizes at the end of treatment.³ Figure 1 shows average effect size of each program, with the size of the bubble reflecting sample size. While the results of high-quality early childhood interventions such as Perry Preschool and the Abecedarian Program may often be cited by preschool advocates, the figure illustrates that these programs are not typical; overall, the average effect size is modest, and declining over time. Taken as a whole, the average effect size for early childhood education on cognitive and achievement scores was 0.35 standard deviations at the end of the programs’ treatment periods. However, average effect sizes vary substantially and studies with the largest effect sizes tended to have the fewest subjects (as indicated by bubble size). When the estimates are weighted to reflect this, the average effect drops to 0.21 standard deviations.

The fact that these programs appear to have declined in effectiveness over time is likely due to a dramatic change in the counterfactual over this period. That is, the conditions encountered by children in the control groups of these studies have improved substantially.⁴ First, children in comparison groups are now more likely to attend some other type of center-based child care or preschool program, rather than only parental care. This is illustrated in Figure 2, which shows that the proportion of three- and four-year-olds enrolled in preschool has grown substantially over time. For example, for children whose families were in the lowest income quartile, the probability of being in center-based care has increased from around 15 percent in 1970, to about 50 percent in 2010. There have been similar improvements in factors that may affect the quality of the home environment. For example, in the early 1960s, mothers of children in the lowest income quintile had an average of less than nine years of schooling; by the 1980s, this had increased to over 11 years. Family size has also decreased over this period. Taken together, all of these improvements for the low-income population as a whole mean that preschool programs have a much higher bar to clear in order to have significant program effects. The fact that conditions have improved for everyone

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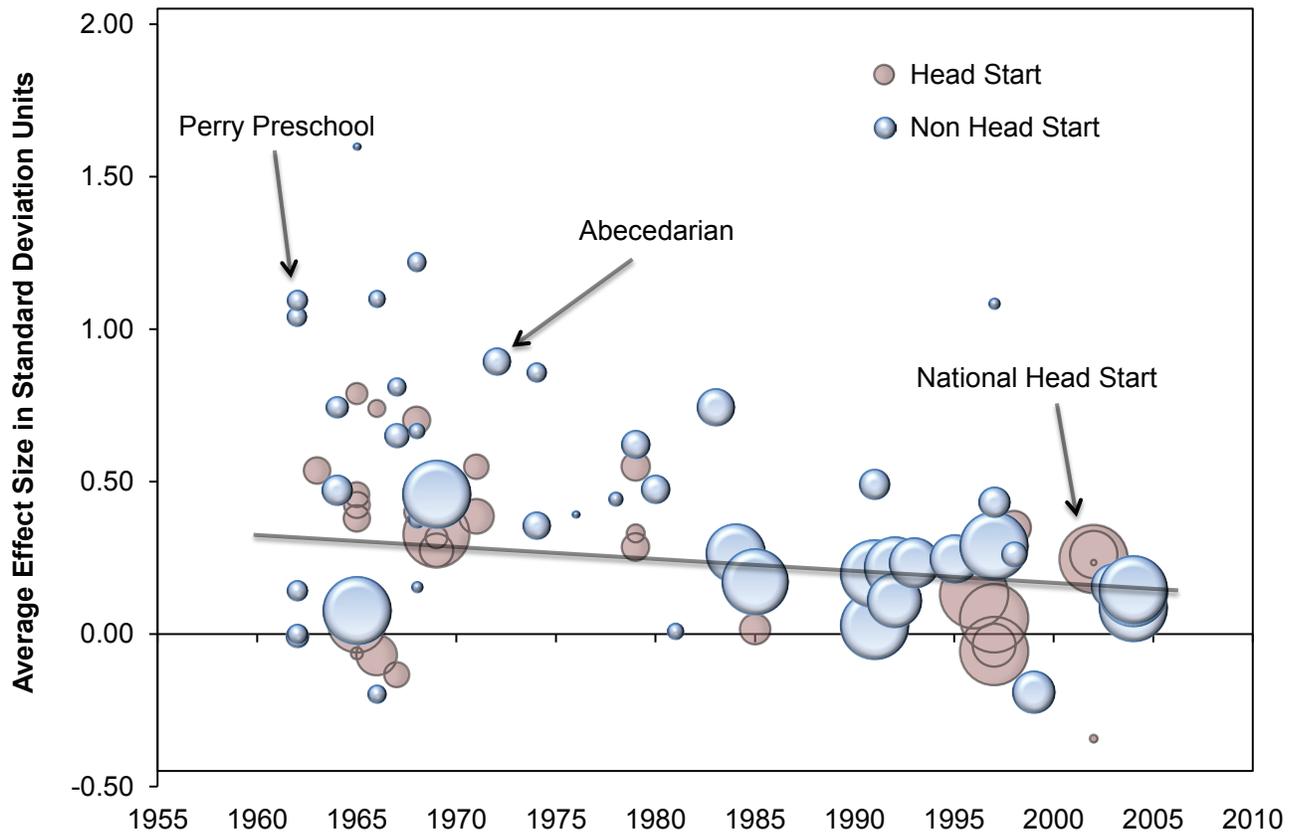


Figure 1. Average cognitive effect at the end of treatment.

Source: G. J. Duncan and K. Magnuson, "Investing in Preschool Programs," *Journal of Economic Perspectives* 27, No. 2 (2013): 109–131.

must be taken into account in designing effective preschool policies and comparing evaluation results; the quality of programming and related services needs to be even higher than before in order to have as large an effect.

Our analysis of past program outcomes yielded several other potentially useful lessons. First, programs that begin earlier in life seem to generate larger effects than do those that start later. Note that because of higher required staff-to-child ratios for younger children, these earlier-starting programs are also considerably more expensive. Second, programs that last longer do not necessarily produce proportionately better results. This could be because preschool programs do not necessarily structure their activities and curricula in a progression that continuously builds skills; for example, the activities and learning opportunities in the second year of a preschool may not differ much from those experiences in the first year. Finally, effects appear to persist for approximately 15 years before there is no longer a difference between treatment and control groups.

What policy levers are available?

Given the evidence that preschool is effective at boosting school readiness, we now turn to the question of how policies can raise the quality of programs that are available. One way to do this is through curriculum requirements. Most

preschool programs, particularly those with public funding and guidelines, use some form of curriculum to organize learning activities related to early academic skills—typically general concepts, early reading, and numeracy or math. These curricula may be either developed by the program itself or purchased from a commercial provider, and they differ in terms of the specificity of their content. Some provide lesson plans designed with a “whole child approach” including aspects that focus on multiple domains of development, and others target specific skills, such as literacy or math. As is the case in all educational settings, there is often considerable variability in the extent to which teachers implement curriculum as intended. Whole-child curricula are by far the most common; this is the type required for use in all Head Start centers. Despite this popularity, there is no strong evidence that whole-child curricula are preferable to those that are locally developed.

The Preschool Curriculum Evaluation Research (PCER) initiative assessed the effects of 14 different curricula implemented in early childhood classrooms serving primarily low-income children.⁵ In each of 12 different projects, early childhood classrooms or centers were randomly assigned to a target curriculum or to a control condition, typically the standard local curriculum. During the pre-kindergarten year, initial analyses of these data found that 8 of the 14 curricula had a positive effect on teacher instruction, but only two had statistically significantly positive effects on

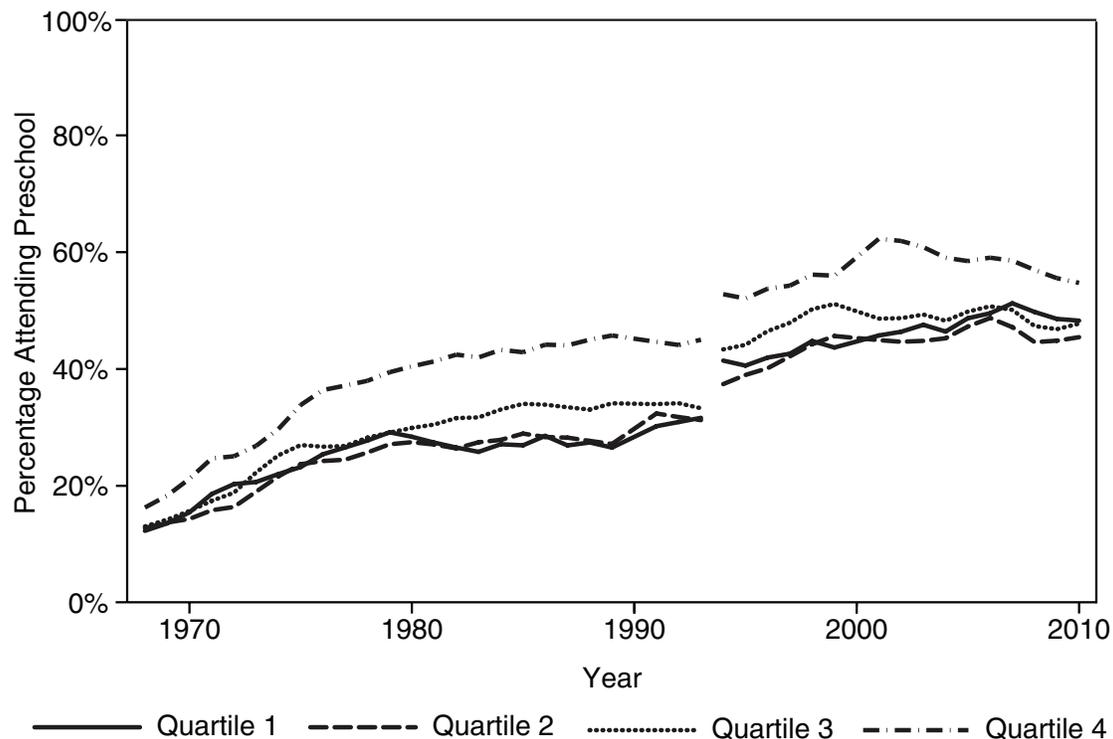


Figure 2. Percentage of 3- and 4-year-olds enrolled in preschool by family income quintile.

Notes: Authors' calculations from October Current Population Survey. Data shown are from three-year moving averages. The break in 1994 is due to a change in the wording of the question.

Source: G. J. Duncan and K. Magnuson, "Investing in Preschool Programs," *Journal of Economic Perspectives* 27, No. 2 (2013): 109–131.

child outcomes. A recent reanalysis of these data by Duncan and colleagues, which pools across curricula based on their content in order to better detect significant small to moderate effects, concluded that content-specific curricula focused on literacy and math are better able to promote academic skills than are more general "whole-child" curricula.⁶ Considering classroom quality (measured by observation at the end of preschool), both whole-child and literacy-focused curricula were better than locally developed curricula.⁷ A math-focused curriculum was (unsurprisingly) found to include many more math activities than did whole-child curricula. Considering child school readiness, there were no effects of the most popular whole-child curriculum compared to locally developed curricula. A math-focused curriculum did result in higher math scores. Some literacy-focused curricula were more effective than others at improving literacy skills; overall, the effect of these curricula on literacy scores was positive but small.

The Building Blocks math program is an example of a recently developed curriculum focused on a specific developmental domain. The curriculum includes large- and small-group instruction focused on teaching math skills in a focused and sequential manner, and hands-on and computer activities that promote children's active involvement in solving problems and explaining their solutions.⁸ An experimental evaluation found that the curriculum resulted in large improvements in children's math knowledge when compared with a different math curriculum (effect size of 0.47 standard deviations) and

a control group using the standard local curriculum (effect size of 1.07 standard deviations).⁹

An example of a public preschool program that has taken seriously the need to identify exemplary curricula and implement them well is the Boston Pre-Kindergarten Program. The program developed their curriculum by integrating proven literacy, math, and social skills interventions. The academic component combined two curricula, Building Blocks for math instruction and Opening the World of Learning for language and literacy. Extensive teacher training and coaching was provided. The rigorous evaluation found large effects on vocabulary, math, and reading (effect sizes of 0.45 to 0.62 standard deviations). This compares to an average effect size for early childhood education on cognitive and achievement scores for programs evaluated between 1960 and 2007, illustrated in Figure 1, of only 0.35 standard deviations. The Boston Pre-Kindergarten Program also had somewhat smaller impacts on executive functions—mental skills that assist the brain in organizing and acting on information (effect sizes of 0.21 to 0.28).¹⁰

While evidence is accumulating, much more research related to preschool curriculum development and evaluation is needed. This work is critically important, but not easy for several reasons. First, the costs associated with successful implementation are not negligible, often requiring substantial investments in materials and teacher training time. Second, there are often non-financial obstacles to overcome. The

early childhood education workforce frequently works long hours for low salaries, which often results in workers with low levels of education and high rates of job turnover. Sometimes, these circumstances can make implementation challenging, especially in community-based settings. The associated research costs are also often quite high, because it is expensive to conduct experimental evaluations that include individual child assessments across multiple sites.

A note about infant and toddler development

Finally, all the discussion of preschool leaves out infants and toddlers. These earliest years of life are an important period of development, and warrant greater policy and programmatic attention. The models of early learning programs that are developmentally appropriate for preschoolers cannot be simply extended downward for younger children at the same cost for the same effect. Some model home visiting programs and parenting programs for mothers of infants have also demonstrated the potential to have important impacts on children's trajectories, with potential implications for human capital accumulation.¹¹ Yet, at this time what is most needed are continued efforts to innovate and evaluate the feasibility and effectiveness of theoretically informed interventions for very young children.

Conclusions

Development during early childhood provides an important foundation for human capital development, with important long-run links to economic earnings and opportunity later in life. The accumulated evidence suggests that there are multiple aspects of early skills—achievement, behavior, and mental health—for which improvement early in life can positively affect children's life chances. There is also accumulating evidence that attending good-quality preschools for a year or two results in long-lasting improvements in educational attainment and earnings, even when short-term improvements in concrete achievement skills fade during the elementary school years. Taken together, this argues for the importance of early childhood investments as a way to increase economic opportunity.

Currently, about 25 percent of children do not attend preschool before they enter kindergarten. Because low-income children are least likely to be enrolled compared with higher-income children, and because income gaps in early development forecast lower levels of human capital accumulation, improving attendance should be a first priority for policy. Other targets for investment include improving learning through research-based curricula and programs for infants and toddlers. ■

¹G. J. Duncan and K. Magnuson, "The Nature and Impact of Early Achievement Skills, Attention Skills, and Behavior Problems," in *Whither Opportunity: Rising Inequality, Schools, and Children's Life Chances*, eds. G. J. Duncan and R. J. Murnane (New York: Russell Sage, 2011).

²Duncan and Magnuson, "The Nature and Impact of Early Achievement Skills, Attention Skills, and Behavior Problems."

³K. Magnuson and G. J. Duncan, "Can Early Childhood Interventions Decrease Inequality of Economic Opportunity?" Draft paper prepared for the Federal Reserve Bank of Boston Conference, Inequality of Economic Opportunity in the United States, October 17–18, 2014, Boston, MA.

⁴G. J. Duncan and K. Magnuson, "Investing in Preschool Programs," *Journal of Economic Perspectives* 27, No. 2 (2013): 109–131.

⁵Preschool Curriculum Evaluation Research Consortium, *Effects of Preschool Curriculum Programs on School Readiness: Report from the Preschool Curriculum Evaluation Research Initiative*, Washington, DC: National Center for Education Research, 2008. Available at <http://www.researchconnections.org/childcare/resources/14449/pdf>.

⁶G. J. Duncan, A. Auger, M. Burchinal, T. Domina, and M. Bitler, "Boosting School Readiness with Preschool Curricula and Quality," UC Irvine, Manuscript, 2014.

⁷Math-focused curricula were not considered in this analysis.

⁸J. Sarama and D. H. Clements, "Building Blocks for Early Childhood Mathematics," *Early Childhood Research Quarterly* 19, No. 1 (2004): 181–189.

⁹D. H. Clements and J. Sarama, "Experimental Evaluation of the Effects of a Research-Based Preschool Mathematics Curriculum," *American Educational Research Journal* 45, No. 2 (2008): 443–494.

¹⁰G. J. Duncan and R. J. Murnane, *Restoring Opportunity: The Crisis of Inequality and the Challenge for American Education* (Cambridge, MA: Harvard Education Press, 2013); C. Weiland and H. Yoshikawa, "Impacts of a Prekindergarten Program on Children's Mathematics, Language, Literacy, Executive Function, and Emotional Skills," *Child Development* 84, No. 6 (2013): 2112–2130.

¹¹D. L. Olds, L. Sadler, and H. Kitzman, "Programs for Parents of Infants and Toddlers: Recent Evidence from Randomized Trials," *Journal of Child Psychology and Psychiatry* 48, No. 3–4 (2007): 355–391.

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Educational opportunity for homeless students

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Since the beginning of the Great Recession, rates of student homelessness have risen rapidly in urban, suburban, and rural school districts throughout the United States. Approximately one million students were identified as homeless during the 2009 to 2010 school year. Although many more homeless students remained unidentified as such, this official number still represents a 41 percent increase over the number of students identified as homeless during the 2007 to 2008 school year.¹ Nearly three-quarters of school districts throughout the United States reported local increases in student homelessness throughout this period.² Since homelessness has been associated with an array of negative school outcomes including low attendance rates, poor grades and attendance scores, and social stigmatization, this increase represents a significant challenge for schools.³ As the depth and breadth of student homelessness have increased, education scholars have examined student-level effects of housing instability, evaluated policies that define homeless students' rights and responsibilities, and suggested approaches that are responsive to homeless students' needs.⁴ One clear finding that has emerged from studies of homeless and highly mobile students is that schools and community-based organizations have important roles in connecting students and families to a variety of education-related opportunities. The purpose of the study summarized here was to learn more about these efforts, especially to determine what practices, routines, and schools were used to connect homeless students to educational opportunities, both in and out of school.⁵

Student homelessness

The McKinney-Vento Homeless Assistance Act of 1987, most recently amended and reauthorized in 2002, defines homeless students as not only those who live in shelters or on the street, but also those living in motels, vehicles, or who are forced to temporarily “double-up” with family members or friends. The effect of homelessness on students' schooling experiences varies by age, setting, and duration of homeless spell.⁶ For example, homeless adolescents may be

more likely than younger students to be affected by social stigmatization in school. Those who stay in settings that are cramped, stressful, or dangerous face different sets of challenges in accessing educational opportunities than those living in stable and supportive shelter settings. Those who are homeless for months may be more profoundly affected by the experience than those who are homeless for a few days. There is no “universal homeless student experience,” but rather a broad range of specific stories and experiences of homelessness with specific student assets, needs, and challenges.

Research suggests that students who experience homelessness are likely to demonstrate a variety of negative school outcomes, including lower grades, attendance rates, and graduation rates, compared to the overall student population.⁷ Homeless students are also more likely than average to have been cited for behavioral issues in school.⁸ While it can be difficult to disentangle the direct effects of incidences of homelessness from those of poverty, violence, and breakdowns in supportive relationships, there are two particularly notable factors that distinguish the experience of homeless students from their peers who are residentially stable. First, these students have higher rates of school mobility than other students, even those who are from economically disadvantaged backgrounds.⁹ Frequent school changes may be particularly detrimental to homeless students, since unlike those who move due to such stable or upward changes as parental employment opportunities or military transfers, these moves are marked by ongoing stress, conflict, instability, and even danger.¹⁰ When homeless students change schools, the move tends to be abrupt and unplanned, providing little if any time for students to prepare emotionally or psychologically, and little opportunity for the new schools to prepare for them. Second, and closely related to the challenge of school mobility, homeless students tend to experience isolation more frequently than those in poverty who are not homeless. This includes physical isolation from parents and other family members, since homeless families are often forced to split up; and social and psychological isolation from peers and teachers, both within and outside school settings. Students who are separated from supportive relationships usually fare worse in school than those who are well connected.

Policies related to homeless students

The McKinney-Vento Homeless Act states that students should be accorded certain rights and opportunities during periods of homelessness. Its implementation depends on schools and community-based organizations working together to provide homeless students with uninterrupted

access to supportive resources and relationships. In past years, McKinney-Vento implementation was primarily conceived as an urban policy, done through city schools near homeless shelters. However, the Homelessness Emergency and Rapid Transition to Housing (HEARTH) Act, implemented in 2009, moves away from traditional models of service that operate through cooperation between schools and shelters, and instead focuses on the rapid rehousing of residentially unstable families. Additionally, the HEARTH Act includes suburban and rural as well as urban areas. HEARTH, combined with post-recession housing trends, has acted to disperse homelessness and residential instability. Student homelessness is no longer seen as solely an urban issue, and schools, neighborhoods, and communities that had not previously addressed poverty and homelessness to any great extent are now faced with the imperative to do so. Research suggests that implementation of the McKinney-Vento Act requires strategic connection of students to education-related resources and relationships, within and across organizations and settings.

Description of study

Our study is based on work done by Mario Small, which suggests that what people gain from their relationship network depends on the organizations in which these relationships are rooted. Small proposes a concept of “organizational brokerage,” defined as “the general process by which an organization connects an individual to another individual, or to the resources they contain.”¹¹ Small notes that the frequency and nature of interactions that individuals have with each other are affected by their organizations. Organizations that emphasize respectful, purposeful, regular, and ongoing interactions can efficiently nurture trust and shared purpose among a diverse group of people. These trusting relationships then become channels of support and information sharing, providing the groundwork upon which larger institutional purposes can be achieved.

Schools’ larger teaching and learning purposes, then, are achieved not only through overtly academic efforts, but also through everyday routines and practices that connect students to people and resources including mentors, jobs, and after-school programs. Schools that have strong ties to community-based organizations and programs, and that are well-supported by their school district, are in a good position to help homeless students find and maintain connections to education-related resources and relationships.

In our study, we looked at how schools connected homeless and highly mobile students and families to resources, relationships, and broader opportunities to achieve educational success. Specifically, we considered relationships within and across schools and their neighboring community organizations, including: (1) How are these relationships nurtured and maintained? (2) How and to what extent is information shared? (3) How are networks of relationships cultivated and sustained by and for homeless

students? The findings described here are drawn primarily from 132 interviews with parents, school personnel, and relevant staff from community-based organizations, in a mid-sized Midwestern city.

This city provides a particularly rich context for learning about student homelessness for three reasons. First, like many other places, it has experienced a significant increase in homelessness in recent years. Homeless shelters served nearly 40 percent more families and school-age children in 2013 than they had five years earlier, and the number of district students identified as homeless more than doubled between the 2008 to 2009 and 2012 to 2013 school years. About one out of every 20 students in the district was identified as homeless in 2012 to 2013, and numerous other homeless students undoubtedly went unidentified. Second, unlike many other comparably sized school districts in the United States, the school district attempts to address student homelessness in a purposeful and strategic manner. The district devotes significant resources toward the implementation of McKinney-Vento policy, and more broadly to the facilitation of stable educational opportunities for homeless students and their families. Third, the region has progressively adopted the HEARTH philosophy of directing families to permanent, independent housing, rather than traditional shelters and transitional programs. Initial evaluation reports indicate that the move toward independent housing solutions has stabilized hundreds of families, but little is known about accompanying education-related outcomes and implications.

Findings

At the school district level, an overarching homeless services framework prompted information and resource dissemination within and among district schools. At the individual school level, wide-ranging differences in school environments and conditions affected the ways that routines and relationships developed. Finally, at the neighborhood level, a group of community-based social workers served to bridge the gap for school-based personnel and homeless students and families. Conditions and practices at each level affected, and were affected by, the conditions and practices of the other levels.

District-level efforts

The school district has a “Mobile Student Support Team” that focuses exclusively on ensuring that homeless and highly mobile students are provided educational opportunities commensurate with their housed peers. Our interviews suggest that this support team, composed of a teacher, two social workers, and an administrative assistant, is a driving force behind the district’s generally focused and coherent daily service of homeless students. The support team uses both referral and collaborative methods to connect schools and families. Team members know and speak regularly with staff from area shelters, youth programs, and food pantries, and thus understand the subtleties of accessing

and making use of local services. On a daily basis, support team members refer families and social workers to the people and services they need, most often for immediate shelter and transportation needs, but also for supplementary education programs, recreational activities, and more. These referrals were effective because they were provided within a collaborative orientation. The support team cultivates and sustains relationships among and between individuals and organizations, allowing for not only more accurate referrals, but more fundamentally, a city-wide understanding and commitment to serving homeless students through integrated, collaborative means.

A poignant example of this collaborative orientation is the poetry program designed for homeless students by the support team. This program brought experts from the local university together with district and community leaders over the course of several months to give students advanced instruction in poetry and writing, culminating in a well-attended public presentation of the students' work at a local library. Beyond its cognitive, social, and emotional benefits for the students, the poetry program facilitated ongoing connections between district staff, students, parents, school staff, and other community stakeholders. Overall, the Mobile Student Support Team appeared to contribute to what one school social worker described as a "united purpose" throughout the district in addressing student homelessness. The district's sustained, centralized commitment serves as a central point of connection for all who are charged with supporting homeless students.

School-level efforts

School-level efforts to connect homeless students and families with services are clearly informed by and associated with district-level efforts. School social workers who are designated as McKinney-Vento contacts within each school work regularly with the district support team. There is considerable variation, however, in how social workers interpret and address situations of homelessness in their schools. Three factors appeared to be particularly important in this variation: grade level of the school, internal school culture, and neighborhood conditions.

Grade level of the school

Staff at middle schools and high schools noted that one of the main challenges in addressing issues of student homelessness in their schools was identifying which students were experiencing homelessness during the school year. Middle and high school students who become homeless but do not change schools as a result are particularly difficult to identify and thus to connect to appropriate supports. While elementary school students spend the majority of their days with a single teacher, middle and high school students shuffle between multiple teachers each day. As a result, middle and high school teachers are less likely to form close bonds with students and to be aware of changing home situations. Younger students were also described as being more "unfiltered" in discussing family situations, and thus as

more likely than older students to provide information that could facilitate helpful and targeted school responses.

Student transportation also varied by the grade level of the school. All U.S. students are permitted to remain in their "school of origin" while homeless even if their temporary residence is outside their school's attendance area. At the elementary school level, transportation in this case is generally provided by private taxi. While this strategy is far from ideal, as it is expensive for the school district, and young students have to ride unaccompanied with a driver they do not know, it does present a direct and reliable method for transporting students. As one high school social worker explained, however, similar services are not provided to middle and high school students:

Transportation, obviously, is a really big issue... As you get to middle and high school, it's a lot harder because our students are automatically given transportation in the form of a bus pass... They are not taxed to school unless it's a very extreme circumstance... So I really help navigate that bus system. Coming from the east side, from the north side, or from the south side, you have to get transfers at all these different points. It's very complicated and it's very cumbersome for them, so I try to help them with this.

Social workers and parents alike noted that the challenges of figuring out multi-stop bus routes often led to tardiness and absences from school and extracurricular opportunities.

At the elementary school level, nearly all school staff described their students as having at least one parent, community social worker, teacher, or other adult with whom school social workers could collaborate in providing needed support. Additionally, the larger community was described as having numerous services and opportunities for young children, including family shelters, academic mentoring, and arts and recreation programs. At the high school level, however, where homeless youth are more likely to be unaccompanied (i.e., not living with their parents), school social workers appeared to have fewer adult advocates to facilitate their efforts. Since the community has no shelters for unaccompanied youth, and there are few after-school services for children of this age, the list of potential program opportunities is short. Some social workers noted that job referrals are often the best opportunities they can provide to homeless high school students.

Internal culture

Nearly all district schools had several routine practices used to actively address student homelessness. Most schools also provided information referrals in non-interactive ways by creating community information bulletin boards and posting fliers. While some parents appreciated this method of providing information they might not otherwise know about, families often became overwhelmed with many seemingly disconnected referrals. Collaborative efforts, where staff worked directly with students and families to make connections to resources, tended to be more effective.

The specific ways that collaboration and referral occurred in individual schools was influenced by social workers' roles and responsibilities, and by the working relationships among staff members. Most of the school social workers we interviewed described their job responsibilities as having expanded in recent years to include tasks such as behavior management, hallway monitoring, and classroom intervention. These new duties have left them with less time to work with families and other staff members to support homeless students. Most elementary school social workers also split their time between two schools. Social workers were particularly burdened in schools that had experienced significant recent increases in student homelessness. Over a six-year period, more than a quarter of schools had gone from an average of less than ten homeless students per school year to more than thirty, with some schools experiencing a ten-fold increase. One social worker described her frustration with not being able to devote sufficient time to supporting homeless students:

There is just not enough time with the number of students that are coming in and limited resources within the school. We get stretched thinner and thinner and then there are certain expectations or additional expectations that get pulled in to try to get that [homeless] student what they need... And budget cuts are continuously reducing time we can actually spend with the students. So even if you get them registered and you get an interview with a student and spend a lot of time with them initially, and you are really connecting them and meeting with teachers and really finding out what it is that is really needed to support them, then it's really the follow-up that becomes hard because three or four more students come in with the same situation. So you are leaving a note to make sure to follow up with so and so and have them connected with this person or that person. So it's really the time... the students really, really need the time and they want the time and they are really struggling with the adjustment... And along with the time is just the amount of staff to be able to meet their needs.

Working relationships among school staff also affected how homeless students were connected to services. While nearly all school staff members and parents noted the careful balancing act required to provide teachers with sufficient information to respect and respond to students' needs while also respecting their privacy, some social workers appeared to be better than others at this. One mother described a successful interaction:

Well, it was the school social worker over at Lawson Elementary—she was the greatest person! When she found out that we needed help, she gave me all sorts of information and was really pretty discreet about it. It's not like she was going to tell the whole school. She figured out a way for my daughter to get back and forth to school. She got me a gas card, which really helped when I needed to pick her up from school.

Not all social workers were able to work so adeptly. In particular, several schools had experienced significant staff turnover in recent years, which appeared to work against staff trust and collaboration in those schools, and made it more difficult for staff to decide how much and with whom to share information about homeless students.

Neighborhood characteristics

As the ethnic, racial, and socioeconomic compositions of local neighborhoods changed in the years prior to our study, the manifestations of and responses to homelessness also changed. Two neighborhoods in particular had population changes that affected school homelessness. Both neighborhoods shifted from having mostly African American residents to mostly Latino, but the causes and consequences of the shifts were quite different.

On the south side, discriminatory practices by new landlords shaped the population. A Latino social worker who worked in this neighborhood explained:

It [the south side neighborhood] was largely African American...and now is a much bigger Hispanic population here. The makeup now is like 70 percent Hispanic... It's kind of a trend that we are seeing. And I kind of feel like, even though it is illegal to discriminate, you can totally see landlords being more willing to rent to Hispanic populations. It's just kind of a thing that I've noticed. I know the landlords. Pretty much all of the landlords in the neighborhood, I know them. You can see just when pretty much a whole complex is Latino, you just have these thoughts about well, I can see that they're weeding out other applicants. I don't know why, but they just have maybe a better record working with those families? I don't know, but it's just kind of what I'm seeing. These are families coming from within the community and from outside of this state and outside of the United States.

In addition to being very troubling for black families who were being displaced from the neighborhood, this trend affected the ways that homelessness was identified and addressed in schools. Many of the Latino residents who were new to the south side were undocumented, and were thus reticent to disclose personal information to social workers for fear of being "caught." The south side social worker noted that he was certain that many families were homeless and doubling-up with others—and therefore eligible for McKinney-Vento benefits including transportation and academic support—but they were nearly impossible to identify without their willing disclosure. Since there is no school in this low-income neighborhood, students are bussed to schools in other parts of town. As a result, school staff responsible for helping them are located miles away, and are often unfamiliar with neighborhood organizations and services.

On the north side, there has been a similar demographic shift from a black majority to an immigrant Latino majority, but

the cause and school response are markedly different. On the north side, most of the new Latino residents are in one large public housing complex, and most of the students in the complex attend the same elementary and middle schools. The elementary school's longtime social worker noted that, as on the south side, undocumented parents were wary about identifying themselves, but that rigid housing policy enforcement and a new online student registration system further complicated homeless student identification and service within her school:

What's interesting about Lane School is that there is one apartment complex that primarily feeds into Lane and that is the Clinton Heights apartment complex. And they're one of the original Section 8 federal buildings from back in the 1970s...And the whole apartment complex, the way they operate is not like private landlords. There's a lot of rigorous federal legislation. And so what happened is they're not allowed to double-up. And so if families double-up, the people who have the lease could actually lose their lease. So they don't like to acknowledge that maybe there are families that are homeless living with them. They won't come to school and say they don't have permanent housing. When we went to the computer online [student enrollment] system, that was kind of like a backdoor approach to getting into schools. So one of the things that happens is that even though they are homeless [doubled-up with other families], we get families that go and register for the school themselves on the computer. We have families in the registry and not providing an address or else they are providing an address for a business or nonexistent address. There are a fair number of families where we really don't know where they're going after school...Families used to have to come in and get everything from the secretary. The secretary would put information in the computer and she would verify all information or address contacts and everything else. They would have to provide a utility bill and a lease. But now one of my concerns is that we have a lot of kids coming to school and we really don't know where they are. Part of my job now is that I end up having to function like a private detective. They are mysteries and they are interesting stories to me. So I am trying to figure out from kids and from parents where are the kids and where are the addresses. And because they are so afraid of their family or friends losing their housing in Clinton Heights, they don't like to tell me.

Despite the considerable challenges to identifying and serving homeless students in the north side neighborhood, we found some of the district's most promising and innovative practices there. School social workers designed their daily routines in strategic response to the schools' changing populations. The north side school social worker quoted above developed a close working relationship with her school's bilingual resource specialist, who had become a trusted intermediary between families and school personnel. The social worker also spent time each week at the apartment

complex where so many of the doubled-up students resided. She developed a friendly working relationship with the landlord, who kept her updated about events and policies around the complex; her presence also increased families' familiarity with her. She noted that many families had come to trust her not just because she could connect them with programs and resources, but also because she told them she would not report them to immigration services (as many had feared), and would not even identify them as doubled-up and homeless, if that was their preference. She was thus able to identify, engage, and support homeless students, even though many of them were never officially labelled as such by the school.

The role of empathy

While some of the social workers and leaders we interviewed delineated their tasks and responsibilities with a degree of professional detachment, most spoke, unsolicited, of their empathy for and commitment to homeless children and families. The social workers, in particular, spoke of homelessness not as a broad social problem for larger systems to address over time, but as an everyday crisis being faced by specific people in their school buildings. For example, an elementary school social worker cried as she described a young single mother who had recently visited her office:

Two of her kids are here [in this school] and she also has a two-year-old and a two-week old. She rolled in here with their double stroller and everything she owned jammed on a double stroller along with the two kids. She was basically exposing her soul. She is letting it all out with me. It can be a very vulnerable position to be in for anyone...When it's [homelessness] alive and in front of you and real like that—like right here—it makes it very different. I kept thinking “this baby is two weeks old.” That really, that just should not be. This situation should just not be. And this is happening right now when the County is going back and forth as to whether they're going to cut the hours of the shelter. And I just thought, “Boy, I need to be speaking at one of those public hearings because they need to understand what this [homelessness] really looks like.”

This social worker fulfilled her formal McKinney-Vento responsibilities by helping the young mother find food and emergency short-term housing and connecting the children with school transportation. What impressed us even more than her impressive knowledge of policy and service delivery, however, was the way she portrayed and interacted with these and other students and families. She highlighted her love and respect for the homeless students, praised their resilience in response to an extremely difficult situation, and vowed to advocate for them to the fullest extent she could. In fact, the majority of our interview participants used words like “dignity,” “respect,” “justice,” “beauty,” and “belief” far more often than words like “policies” and “roles” in response to our questions about how and why they devoted themselves to homeless students and families. Although our findings

largely center on organizational practices that facilitate education-related connections, these practices should be understood as resting upon individuals' experience-informed understandings and responses.

Discussion and implications

Research suggests that connections to education-related resources and relationships are often difficult for homeless students to establish and maintain. We drew conceptual guidance from Small's perspectives on organizational brokerage to learn how schools go about fostering such connections.¹² Our intent was to learn about the daily practices through which a community responded to student homelessness. The city we studied was chosen because of its commitment to ensuring equitable access to educational opportunities for all students, regardless of their residential situations. As in most other communities, in this city the pursuit of this goal faces a range of challenges, including insufficient school funding and a lack of connection within and between many schools.

We believe that this study offers researchers and practitioners insights that can be used to inform their own community's responses to homelessness of school-age children and their families. In particular, we offer three lessons for practice. First, guidance and support from the school district central office is extremely important. For example, the Mobile Student Support Team provided daily coordination and oversight of transportation and other services for the school district. This demonstrated district-level commitment to supporting homeless students helps to motivate and normalize efforts to address homelessness beyond the central office.

Second, the efforts of the central office need to be connected to and enhanced by responsive networks within each individual school. Schools that rely on single positions (typically social workers) to carry out all activities related to homelessness in that school are unlikely to be able to respond as comprehensively and efficiently as those that develop regular multi-personnel routines and practices to identify, connect, and serve homeless students.

Third, having approaches to homelessness that are well-integrated into daily school life can help schools respond appropriately in diverse local contexts. Rather than relying on "one-size-fits-all" understandings of and responses to homelessness, schools can acquire more detailed knowledge about local trends in homelessness by including in their homeless student support teams those who have relationships with landlords, police, community housing developers, and other community members. Each school needs individually-tailored strategies to help their students, and those who are most immersed in the issue are well positioned to develop effective responses. The empathy, passion, and commitment that tend to accompany individuals' close interactions with homelessness also appear to heighten immediacy in responding to it.

Beyond these three lessons for practice, the findings from our study highlight the need for additional research on schools' responses to student homelessness. Specifically, more needs to be known about how various school-level positions, including social workers, teachers, administrators, and front office staff, communicate about and respond to homelessness in strategic ways. It would also be helpful to know more about how the McKinney-Vento Act, the HEARTH Act, and other homeless-specific policies intersect. ■

¹National Center for Homeless Education, "Education for Homeless Children and Youth Program Data Collection Summary," U.S. Department of Education, June 2011.

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⁴See, for example, J. H. Wong, L. T. Elliott, S. Reed, W. Ross, P. McGuirk, L. Tallarita, and K. Chouinard, "McKinney-Vento Homeless Assistance Act Subtitle B—Education for Homeless Children and Youths Program: Turning Good Law Into Effective Education, 2008 Update," *Georgetown Journal on Poverty Law & Policy* 16, No. 1 (2009): 53–98; and J. Obradović, J. D. Long, J. J. Cutuli, C.-K. Chan, E. Hinz, D. Heistad, and A. S. Masten, "Academic Achievement of Homeless and Highly Mobile Children in an Urban School District: Longitudinal Evidence on Risk, Growth, and Resilience," *Development & Psychopathology* 21 (2009): 493–518.

⁵This article draws from P. M. Miller, "A Critical Analysis of the Research on Student Homelessness," *Review of Educational Research* 81, No. 3 (September 2011): 308–337; and from P. M. Miller, A. Pavlakis, L. Samartino, and A. Bourgeois, "Brokering Educational Opportunity for Homeless Students and their Families," *International Journal of Qualitative Studies in Education*, forthcoming (March 2015).

⁶Miller, "A Critical Analysis of the Research on Student Homelessness."

⁷See, for example, A. C. Kennedy, "Homelessness, Violence Exposure, and School Participation Among Urban Adolescent Mothers," *Journal of Community Psychology* 35, No. 5 (2007): 639–654; and J. Fantuzzo and S. Perlman, "The Unique Impact of Out-of-Home Placement and the Mediating Effects of Child Maltreatment and Homelessness on Early School Success," *Children and Youth Services Review* 29, No. 7 (2007): 941–960.

⁸See, for example, D. R. Gross and D. Capuzzi, "Defining Youth at Risk," in *Youth at Risk: A Prevention Resource For Counselors, Teachers, and Parents*, 4th edition, eds. D. Capuzzi and D. R. Gross (Alexandria, VA: American Counseling Association, 2004).

⁹See, for example, W. G. Tierney, J. T. Gupton, and R. E. Hallett, *Transitions to Adulthood for Homeless Adolescents: Education and Public Policy*, Center for Higher Education Policy Analysis, University of Southern California, 2008.

¹⁰See, for example, R. E. Hallett, "Homeless: How Residential Instability Complicates Students' Lives," *About Campus* 15, No. 3 (2010): 11–16.

¹¹M. L. Small, *Unanticipated Gains: Origins of Network Inequality in Everyday Life* (New York: Oxford University Press, 2009).

¹²Small, *Unanticipated Gains*.

Reducing inequality: Neighborhood and school interventions

Lawrence F. Katz

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Fifty years after the Civil Rights Act and the declaration of the War on Poverty, much has changed for the better in the United States, but substantial racial inequality persists. Large gaps remain between African Americans and whites in earnings, employment, family income, health, life expectancy, incarceration, teen pregnancy, educational attainment, and academic achievement. Substantial gaps also remain between Hispanics and whites in economic and educational outcomes.¹ Differences in socioeconomic status are increasingly linked to differences in neighborhoods and schools. Although residential racial segregation has substantially decreased since 1970, residential economic segregation has increased sharply, particularly for blacks and Hispanics, and school segregation by family income has

risen. With rising economic inequality in recent decades, the effects of which socioeconomic status one is born into are magnified. In this article I use findings from two large-scale projects, the Moving to Opportunity demonstration and the Harlem Children’s Zone, to examine the effects of neighborhood and school interventions on health, education, risky behaviors, and economic outcomes.²

Effects of rising income segregation

Neighborhood residential segregation by income has been increasing in the United States since 1970 at a higher rate than can be explained by rising income inequality alone.³ Nearly nine million Americans live in neighborhoods of extreme poverty, defined as those in which at least 40 percent of residents are poor.⁴ As income segregation has increased, minority children from low-income families who live in increasingly economically isolated high-poverty neighborhoods appear to be particularly disadvantaged. For example, Figure 1 shows a strong positive correlation between mean residential neighborhood income and the academic performance of eighth-grade students in New York City during 2009 to 2010. Note that this correlation

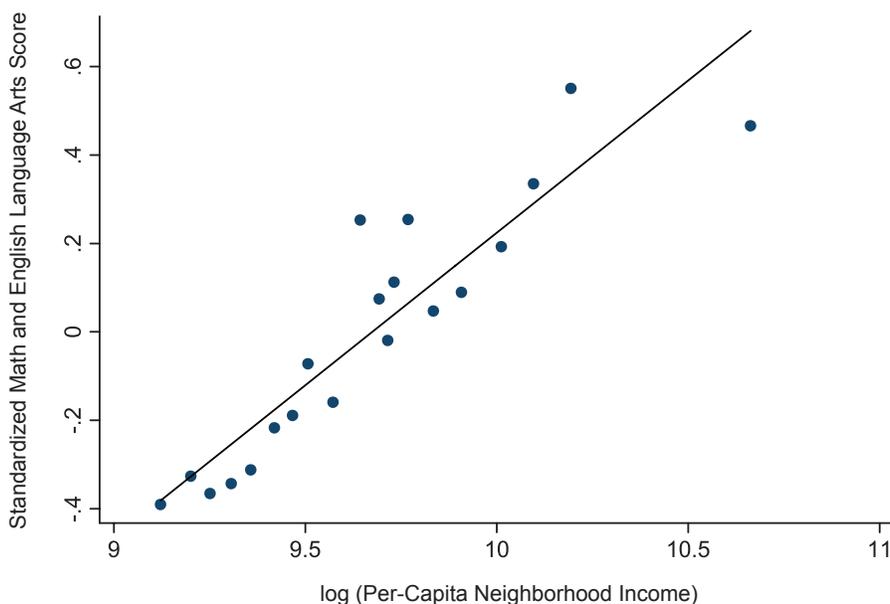


Figure 1. 8th grade math and English language arts performance by New York City neighborhood income.

Source: R. G. Fryer, Jr., and L. F. Katz, “Achieving Escape Velocity: Neighborhood and School Interventions to Reduce Persistent Inequality,” *American Economic Review: Papers & Proceedings* 2013 103, No. 3 (2013): 232–237.

Notes: The figure plots mean eighth-grade standardized New York State Math and English Language Arts (ELA) achievement test scores of resident students against log (neighborhood per-capita income). The solid line shows OLS estimates for the underlying student-level data.

alone does not indicate causal effects; it could reflect direct neighborhood characteristics, school quality differences by neighborhood, or family background factors.

Adults in poor neighborhoods also have worse economic and health outcomes.⁵ These patterns have led to concern that the neighborhoods in which people live may have causal effects on their long-term life changes. Living in a disadvantaged neighborhood may negatively affect life outcomes by, for example, providing exposure to peer norms encouraging risky behaviors, or limiting access to resources such as schools or job referrals. Alternatively, moving to a more affluent area could mean greater discrimination and competition from more advantaged residents, and fewer social services for the poor.

Lower quality schools may also result in poorer life chances, independent of any neighborhood effects. An important policy question is whether either high-quality schools or broader neighborhood-based interventions alone are sufficient to weaken the cycle of intergenerational poverty for those growing up in high-poverty areas, or if both types of policies are needed. An ideal randomized experiment would compare: (1) a treatment of improving neighborhood quality while keeping school quality constant; (2) one that improved school quality while leaving the neighborhood unchanged; and (3) one that improved both school and neighborhood quality. Although no experiment taking exactly this form is currently available, there is a growing body of evidence using credible experimental and quasi-experimental sources of variation in neighborhoods and schools. I examine this literature to better understand which interventions may indeed be effective in combatting multigenerational poverty.

Prior research on neighborhood interventions

Isolating the causal effects of neighborhood environments on behavior and well-being is complicated by the fact that most people have some choice about where they live. Traditional cross-section observational studies have found strong neighborhood effects that weaken substantially with further controls for family background.⁶ However, unmeasured family background characteristics such as parenting style could be driving the effects rather than characteristics of the neighborhood itself; this would tend to lead to overestimated effects. Families who otherwise would have positive outcomes may be the ones more likely to move to a better neighborhood. Conversely, measurement error in defining meaningful neighborhoods could lead to underestimated effects.

Quasi-experimental studies of neighborhood effects on child outcomes exploiting housing mobility programs have generated a mixed set of findings. For example, early analyses of the Gautreaux program in Chicago found large effects on child outcomes of moving to the suburbs compared to central city Chicago.⁷ However, differential attrition and non-random sorting for moves to different locations raise concerns about these findings. Longer-term

follow-up studies of Gautreaux using administrative data find less strong effects.⁸ Studies of placements into public housing in lower-poverty vs. higher-poverty areas in Toronto and of moves following public housing demolitions in Chicago find little effect of neighborhood environments on educational outcomes or later earnings although such moves appear to have been associated with only modest change in school quality.⁹

Evidence on neighborhoods from Moving to Opportunity

The U.S. Department of Housing and Urban Development's Moving to Opportunity demonstration provides evidence from a large-scale randomized experiment about the long-term effects on low-income parents and children of moving from very disadvantaged to less distressed neighborhoods. The Moving to Opportunity demonstration was open to families with children living in public housing in high poverty neighborhoods in Baltimore, Boston, Chicago, Los Angeles, and New York. From 1994 to 1998, 4,600 families were enrolled and were randomly assigned to one of three groups: (1) the experimental group received housing vouchers that could only be used in areas with poverty rates below 10 percent, as well as help from a housing-mobility counselor in finding eligible housing; (2) the Section 8 group received conventional housing vouchers; and (3) the control group received no assistance through the program, but remained eligible for their current project-based housing assistance.

At program entry, one-quarter of household heads were employed, and over 85 percent of households were single-parent female-headed families. Most household heads were black or Hispanic; fewer than 40 percent had completed high school. The most common reason given by program applicants for wanting to move was fear of violent crime.

Final surveys were collected 10 to 15 years after random assignment. Response rates were very high, around 90 percent across all groups, so this study did not face the substantial attrition concerns of the early Gautreaux studies. Nearly half of those in the experimental group did in fact move to eligible housing, a higher than expected rate. One year after program entry, the average control group adult was living in a neighborhood with an average poverty rate of 50 percent. Those who moved with an experimental group voucher had their neighborhood poverty rates reduced by 35 percentage points on average, compared to a 21 percentage point reduction for those in the Section 8 group. Differences across the three groups narrowed over time as neighborhood poverty rates for those in the control group declined, but some differences persisted. As Figure 2 shows, in the 10 to 15 years following random assignment, about half of those in the experimental group who moved with a Moving to Opportunity voucher resided in neighborhoods with poverty rates that averaged below 20 percent, which was true for very few control group families. Those in the Section 8 group who

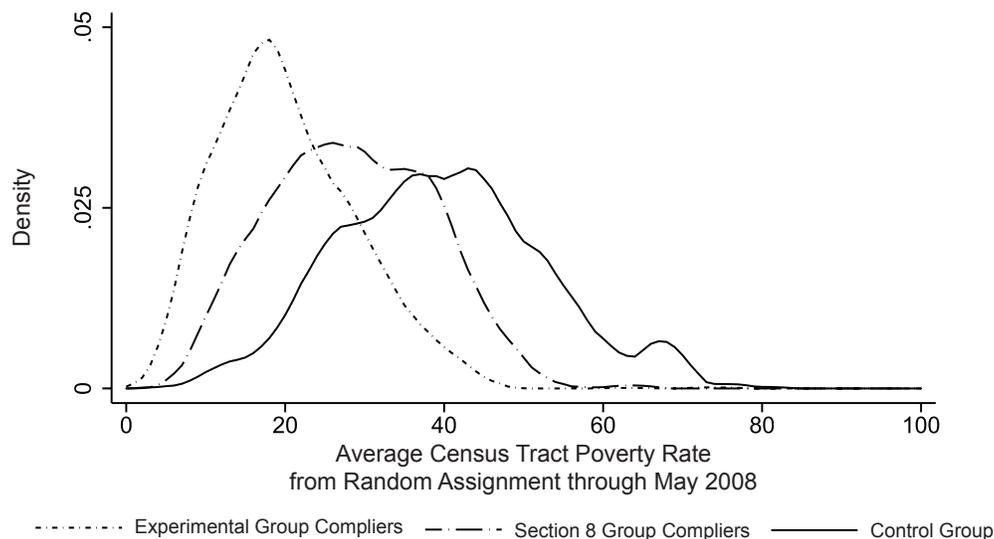


Figure 2. Neighborhood poverty distribution by treatment group.

Source and Sample: The sample is all adults who were interviewed as part of the long-term survey (with Experimental and Section 8 group adults limited to those who used a Moving to Opportunity voucher to move).

Notes: Duration-weighted average of census tract poverty at all addresses from random assignment through May 2008 (just prior to the long-term survey period), based on linear interpolation of 1990 and 2000 decennial census and the 2005–2009 American Community Survey data.

moved tended to have neighborhood poverty rates between those of the experimental group movers and the control group. Families offered Moving to Opportunity housing vouchers ended up in safer and lower-poverty neighborhoods with higher-quality housing. The Moving to Opportunity randomized treatments created large, persistent differences in neighborhood environments for otherwise comparable groups.

Nevertheless, the Moving to Opportunity treatments led to no detectable effects on adult economic self-sufficiency in the short-term (1 to 2 years), interim (4 to 7 years), or final (10 to 15 years) follow-up studies. In contrast, other interventions focusing on work incentives and skills have been found to improve employment and economic self-sufficiency for similar groups of adult public housing residents. For example, the Jobs-Plus program, which offered: (1) employment services to public housing residents; (2) changes in rent rules which increased work incentives; and (3) community support for work, produced sustained positive effects on earnings.¹⁰

The Moving to Opportunity program did, however, have beneficial effects on adult physical and mental health, and subjective well-being. Moving with an experimental group voucher reduced the prevalence of having a body mass index of 40 or more (an indication of extreme obesity) by 7 percentage points. Moving with an experimental group voucher also reduced the likelihood of diabetes among adults by 10 percentage points, or one-half of the control group’s diabetes rate. One explanation for these beneficial effects on physical health is that the program increased neighborhood safety, and thus improved mental health, including measures of psychological distress. Overall, adults in the experimental

group were happier and experienced less stress than the control group. This hypothesis about safety, stress, and health is consistent with the finding that the majority of program applicants cited concerns about crime and violence as their primary reason for wanting to participate in Moving to Opportunity.

Although the program was quite effective at reducing neighborhood poverty for those in the treatment groups, there was much less change in the quality of the schools attended by children in the treatment groups as indicated by school mean test scores, study participants’ self-reports of school climate, and by only modest reductions in the low-income share of school peers. The final evaluation of Moving to Opportunity detected no systematic effects of moves to better neighborhoods on the academic achievement, educational outcomes, or risky behaviors for children in the study at 10 to 15 years after program entry. However, there were some beneficial effects on female (but not male) youth in other areas. Assignment to the experimental and Section 8 groups resulted in improved physical health for girls, while girls in the experimental group also had improved mental health outcomes. The reason for these gender differences remains unclear; they do not appear to be attributable simply to gender differences in the likelihood of these outcomes. There were some study sites where school quality did improve substantially for the treatment groups, so for a subsample it was possible to assess the effects of school quality while holding neighborhood poverty roughly constant. In this analysis, the treatment groups in sites where moves led to larger improvements in school quality were also found to have improvements in educational outcomes and reductions in risky behavior. It should be noted that it was

still too early at the time of final evaluation in 2008 to 2009 to assess the effects of the Moving to Opportunity treatments on the adult outcomes of the younger children in the study.

Neighborhood environments have important effects on the quality of life and well-being of low-income families, even if the moves to better neighborhoods for the Moving to Opportunity treatment groups do not appear to have improved the economic or educational outcomes of adults and older children. Estimates from the Moving to Opportunity data imply that a decline in neighborhood poverty of one standard deviation (13 percentage points) is associated with an increase in adult subjective well-being equivalent to that associated with an increase in household income of \$13,000. This represents a very large difference, given that the average control group's family income is only \$20,000.

Prior research on school interventions

Although the Moving to Opportunity study does provide some evidence that moves to areas with higher school quality can improve students' outcomes, it is necessary to turn to other data sources to fully explore this area. Prior work by David Deming and colleagues has shown that a public school choice lottery in the Charlotte-Mecklenburg school district resulted in lower crime and higher college enrollment and degree completion for those gaining access to higher-quality schools without moving neighborhoods.¹¹

An experiment in Tennessee found that reduced class size and higher-quality classes in kindergarten through third grade led to better test scores in the short run, and longer-run effects on college attendance and adult earnings.¹² The effects of reduced class size were largest for minority and free lunch students.

Finally, the quality of teachers also appears to matter. The Tennessee experiment also showed that having more experienced teachers in kindergarten through third grade results in higher adult wages.¹³ In addition, students assigned to a high value-added teacher in grades four through eight earn more at age 28, are less likely to be teen parents, and are more likely to enroll in college and to attend a high-quality college.¹⁴

Evidence on schools from the Harlem Children's Zone

The Harlem Children's Zone is a 97-block area in Harlem, New York, that combines "No Excuses" charter schools with neighborhood services designed to create a positive and supportive social environment for children from birth to college graduation.¹⁵ The Harlem Children's Zone was created to address a large range of issues faced by children in Harlem, including housing, schools, crime, and asthma. The approach is based on the belief that it is necessary to improve

both neighborhoods and schools in order to raise student achievement.

Since admission to the Harlem Children's Zone Promise Academy charter school was done on a lottery basis, and because many of the students live outside the boundary of neighborhood supports, it is possible to determine the causal effect of being offered admission to the charter school, and also attempt to separate out the effects of schools, neighborhoods, and their interaction, on youth outcomes. Dobbie and Fryer found that six years after admission, lottery winners have an increase in math achievement of over one-quarter of a standard deviation and a 14 percent increase in college enrollment.¹⁶ Females are 12 percentage points less likely to be teen mothers, and males are 4 percentage points less likely to be incarcerated. Overall, winning the charter school lottery resulted in large and significant increases in human capital, large and marginally significant decreases in risky behaviors, and no effect on health outcomes. Since lottery effects were similar for students living within and outside the zone boundaries, it appears there is little interaction effect of neighborhood and school quality. There also appear to be little or no direct neighborhood effects on youth outcomes for those not attending the charter school.

Conclusions

As illustrated in Figure 3, these results from credible quasi-experimental and experimental sources of variation in neighborhoods and schools suggest that neighborhood improvements are more effective than school improvements at reducing physical and mental health inequalities and improving well-being. Improvements in school quality, however, are more effective in decreasing persistent economic and educational inequalities and reducing risky behaviors. This distinction indicates that it is important for policymakers to choose the appropriate intervention for the outcome to be addressed.

Note that it is important to consider the possibility of differences in the macro versus micro effects of neighborhood and school policy interventions, and that this distinction is difficult to assess in an experiment. At the micro level, we have good evidence that if the distribution of schools and teachers is held constant, then attending a better school or having better teachers results in better outcomes. However, on a macro level, those effects could be balanced out by negative effects for those left with the poorer schools or teachers.¹⁷ What is needed is a way to generate large-scale improvements in school and teacher quality for low-income students growing up in high-poverty neighborhoods. That is, how can one increase the supply of talented teachers, principals, and school practices? It is necessary to consider all of these together, since changing just one aspect could have unintended consequences. For example, simply mandating smaller class size could have the unintended effect of reducing teacher quality in poorer districts that had less ability to compete in hiring. Since teacher quality is

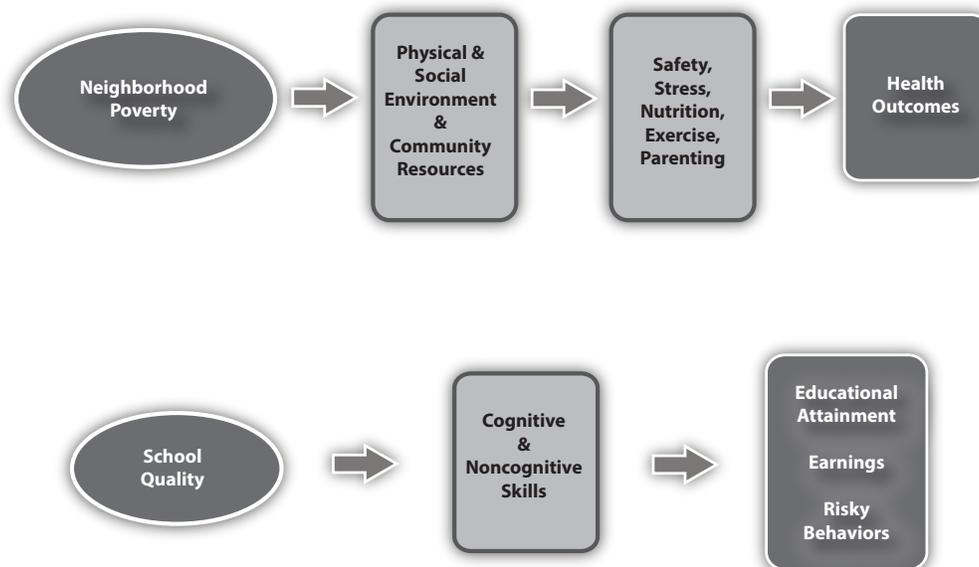


Figure 3. Pathways and effects of neighborhood and school interventions.

likely more important to student outcomes than class size, this could result in a net negative effect of a smaller class size mandate. There is some older evidence supporting the idea of a macro approach to school interventions. For example, historical statewide efforts to increase public school inputs have been found to improve long-run economic outcomes.¹⁸

For economic outcomes, the state of the local labor market appears to matter more than the particular neighborhood of residence. So, a stronger macroeconomy in a particular metropolitan area will improve economic outcomes for everyone. It does appear that the overall level of segregation in a metropolitan area matters; recent work has suggested that neighborhoods with less residential segregation (by race or income) are more likely to have better schools, and to have a higher level of upward mobility.¹⁹ High-return investments in schools and neighborhoods are clearly worthwhile, but support for such investments is difficult in the currently weak macro environment. While a rising tide may not automatically lift all boats, it may be much easier to effect change while the tide is rising. ■

¹⁸R. G. Fryer, Jr., “Racial Inequality in the 21st Century: The Declining Significance of Discrimination,” In *The Handbook of Labor Economics*, Volume 4B, eds. O. Ashenfelter and D. Card (Amsterdam: Elsevier, North Holland, 2011).

¹⁹In addition to the Lampman lecture, this article draws from two papers: R. G. Fryer, Jr. and L. F. Katz, “Achieving Escape Velocity: Neighborhood and School Interventions to Reduce Persistent Inequality,” *American Economic Review: Papers & Proceedings* 2013 103, No. 3: 232–237; and J. Ludwig, G. J. Duncan, L. A. Gennetian, L. F. Katz, R. C. Kessler, J. R. Kling, and L. Sanbonmatsu, “Long-Term Neighborhood Effects on Low-Income Families: Evidence from Moving to Opportunity,” *American Economic Review* 103, No. 3 (May 2013): 226–231.

³S. F. Reardon and K. Bischoff, “Income Inequality and Income Segregation,” *American Journal of Sociology* 116, No. 4 (2011): 1092–1153.

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¹⁵“No Excuses” schools typically allow the principal considerable administrative freedom, set measurable goals that are regularly tested, emphasize parental participation, and create a culture of universal achievement that makes no excuses based on students’ background.

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¹⁷Since school and teacher effects appear to be greater for more disadvantaged students, there might indeed be net benefits to redistributing resources in a way that favors poorer students, but this may not be a politically feasible policy.

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How school quality affects the success of a conditional cash transfer program

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The achievement gap between children of families in the highest and lowest income groups in the United States has been widening steadily in recent years.¹ There are two primary theories explaining the link between socioeconomic status and children's achievement. One theory suggests that economic hardship leads to parental stress, which in turn affects parental mental health, family interactions, and ultimately children's achievement.² An alternate model suggests that limited economic resources restrict parents' ability to invest in children, and thus hinders children's educational attainment.³ Recent studies suggest that in addition to families, school settings play a key role in the widening achievement gap as children progress through school.⁴

Conditional cash transfer programs offer cash assistance to low-income families to reduce immediate hardship, but condition this assistance on actions such as investing in children's educational achievement and family preventive health care, in the hope of improving children's longer-term success. Inspired by Mexico's Oportunidades program, conditional cash transfer programs have become a very popular antipoverty initiative in lower- and middle-income countries over the past decade. Evaluations of these programs have found some important successes in reducing poverty and increasing investments in children.⁵ Opportunity NYC – Family Rewards is the first comprehensive conditional cash transfer program to be implemented and evaluated in a higher-income country.⁶

This article summarizes a study that looked at whether and how school quality affected Family Rewards program effects on high school students' educational processes and achievement.⁷ This is the first study to consider the role of school context in examining the results of a conditional cash transfer program on educational outcomes, and uses an expanded set of outcomes that include children's approaches to schooling, parental investment in their children, and academic achievement.

Conditional cash transfer programs

Over the past decade, conditional cash transfer programs have been widely adopted in lower- and middle-income countries. Nearly every Latin American country has such a program, and pilot programs are being implemented in countries around the world, including locations in Sub-Saharan Africa, South Asia, and most recently, North America. There has been relatively consistent evidence that these programs successfully achieve their short-term goals of increasing income, reducing current poverty levels, and increasing those parental investments in children that are directly tied to program incentives.⁸ There is much less evidence, however, that conditional cash transfer programs improve longer-term education and health outcomes for children.

This lack of consistent long-term effects could be due to: (1) programs having unrecognized design flaws, such as targeting incentives to less important areas of human capital development, not providing large enough incentives, or not framing incentives in ways that would actually change behavior; (2) offsetting negative consequences of the programs; or (3) variation in program effects by individual or contextual characteristics that masks overall effects. This third possibility, that the program promotes positive changes under some conditions, but negative changes under other conditions, is examined in the study described here.

Opportunity NYC – Family Rewards

The Family Rewards program, launched in 2007 by New York City's Center for Economic Opportunity, offered families rewards linked to conditions in three areas:

- **Education**, which included meeting goals for children's attendance in school, achievement on standardized tests, and parents' engagement with their children's education;
- **Health**, which included maintaining health insurance coverage for parents and their children, and obtaining age-appropriate preventive care; and
- **Workforce**, which included parents sustaining full-time work and completing education or training activities.

A complete schedule of awards is shown in Table 1. The program was offered to low-income families in six of New York City's poorest communities. For high school students, some of the cash rewards for meeting educational goals were offered directly to them rather than to their parents, giving them more direct exposure to the program

Table 1
Family Rewards Demonstration: Schedule of Rewards

Activity	Reward Amount
Education Incentives	
Elementary and middle school students	
Attends 95% of scheduled school days ^a	\$25/month
Scores at proficiency level (or improves) on annual math and English tests	
Elementary school students	\$300/month per test
Middle school students	\$350/month per test
Parent reviews interim test results with teachers ^b	\$25 (up to 2 tests/year)
High school students	
Attends 95% of scheduled school days	\$50/month
Accumulates 11 course credits per year	\$600
Passes state Regents exams	\$600/exam (up to 5 exams)
Takes PSAT (preliminary college aptitude test)	\$50 (up to 2 times)
Graduates from high school	\$400 bonus
All grades	
Parent attends parent-teacher conferences	\$25/conference (up to twice)
Child obtains library card ^a	\$50 (once during program)
Health Incentives	
Maintaining health insurance (public or private ^a)	
For each parent covered	\$20/month (public); \$50/month (private)
If all children are covered	\$20/month (public); \$50/month (private)
Annual medical checkup	\$200/family member (once/year)
Early-intervention evaluation for child under 30 months old, if advised by pediatrician	\$200/child (once/year)
Preventive dental care (cleaning/checkup)	\$100/family member (twice/year; once/year for children under age 6)
Workforce Incentives	
Sustained full-time employment	\$150/month
Education and training while employed >10 hours/week (employment requirement discontinued after Year 2)	Amount varies, up to a maximum \$3,000 over 3 years
^a Discontinued after Year 2.	
^b Discontinued after Year 1.	

than younger children. Interim results of an evaluation of Family Rewards, based on three to four years of data, found reductions in immediate poverty and material hardship, and some improvements in some forms of investment in human capital.⁹ To date, Family Rewards has had little overall effect on academic outcomes for high school students who were behind academically at the time of program entry. However, for students who were already academically proficient when they entered the program in ninth grade, the program did significantly increase various educational outcomes, including attendance, courses passed, and graduation rates.

The incentive structure for Family Rewards differs somewhat from earlier conditional cash transfer programs. In Latin America and Asia, programs have traditionally provided incentives for attainable outcomes such as school enrollment and health-care visits. In Family Rewards, however, many of the incentives were tied to outcomes such as academic attainment and sustaining full-time employment. Unlike earlier programs, these merit-based incentives were not necessarily achievable for all parents and children. While Family Rewards targeted families and not schools, school quality may have affected the way that parents and children responded to incentives.

The current study

We looked at whether school quality moderated the effects of Family Rewards on educational behaviors and

attitudes, including children's academic motivation, school engagement, academic time use, and academic achievement, and parental financial investments in children. While subgroup analyses usually consider how programs work differently for different groups of people, in this study we consider whether and how Family Rewards worked differently for children in school settings of different quality.¹⁰

School quality was assessed using a composite of four dimensions of the school environment, including (1) the percentage of students who passed English and math Regents examinations; (2) average attendance rate; (3) per-pupil expenditure levels; and (4) student reports of perceptions of school safety. Table 2 shows selected characteristics of schools by school quality rank, and for all New York City public schools. Note that the quality levels for even higher-quality schools are not particularly high. For example, the graduation rate for the top third of schools is only 71 percent. This compares to a graduation rate of 59 percent across all New York City Public Schools, and 51 percent for the bottom third of schools.

Academic motivations and time use

The level of students' academic motivation was assessed using a questionnaire that included measures of both intrinsic and extrinsic motivation. The intrinsic motivation scale included items such as "I do homework because I enjoy it," and "I do homework because I want to understand the

Table 2
Selected Characteristics of Schools by Quality Ranking

High Schools (N = 330)	Bottom Third	Middle Third	Top Third	All New York City Public Schools
Graduation rate	51%	61%	71%	59%
Percentage passing Regents exams	72%	79%	82%	79%
Attendance rate	75%	82%	86%	85%
Average student enrollment	805	788	1,072	796
School progress report score (0 to 100 scale)	40	47	61	54

subject,” while the extrinsic motivation scale included items such as “I do homework because I will get in trouble if I don’t do it,” or “I do homework because I will feel bad about myself if I don’t.” Students rated each item on a four-point scale ranging from 1 (not at all true) to 4 (very true).

Students also reported how they spent their discretionary time, and were categorized into one of four groups based on their reported activities:

- **Maintenance and work-oriented**, which included those who engaged in high levels of activities such as self-care, resting, and commuting, and the highest levels of family chores such as housework and caring for siblings;

- **Academically oriented**, which included those who spent most of their discretionary time doing homework or other academic activities;
- **Television- and computer-oriented**, which included those who spent most of their time watching television or using the computer for non-academic purposes; and
- **Socially oriented**, which included those who spent the most time in activities such as hanging out with friends and family, having telephone conversations, or texting.

We found that the effects of Family Rewards on both student’s academic motivations and time use varied by school quality. Figure 1 shows the relationship between school quality, treatment status, and intrinsic motivation. The difference between the two lines represents the treatment effect; when the line for the treatment group is above that of the control group, the offer of conditional cash transfers has a positive effect. In contrast, when the line for the treatment group is below that of the control group, the effect is negative. Similar results are seen for extrinsic motivation. Thus, students in lower-quality schools became more motivated—both intrinsically and extrinsically—as a result of Family Rewards, while those in relatively higher-quality schools became less intrinsically motivated. Although previous work has found a potentially reciprocal relationship between academic motivations and how engaged students are in school, there were no effects of Family Rewards on self-reported school engagement.¹¹ However, as shown in

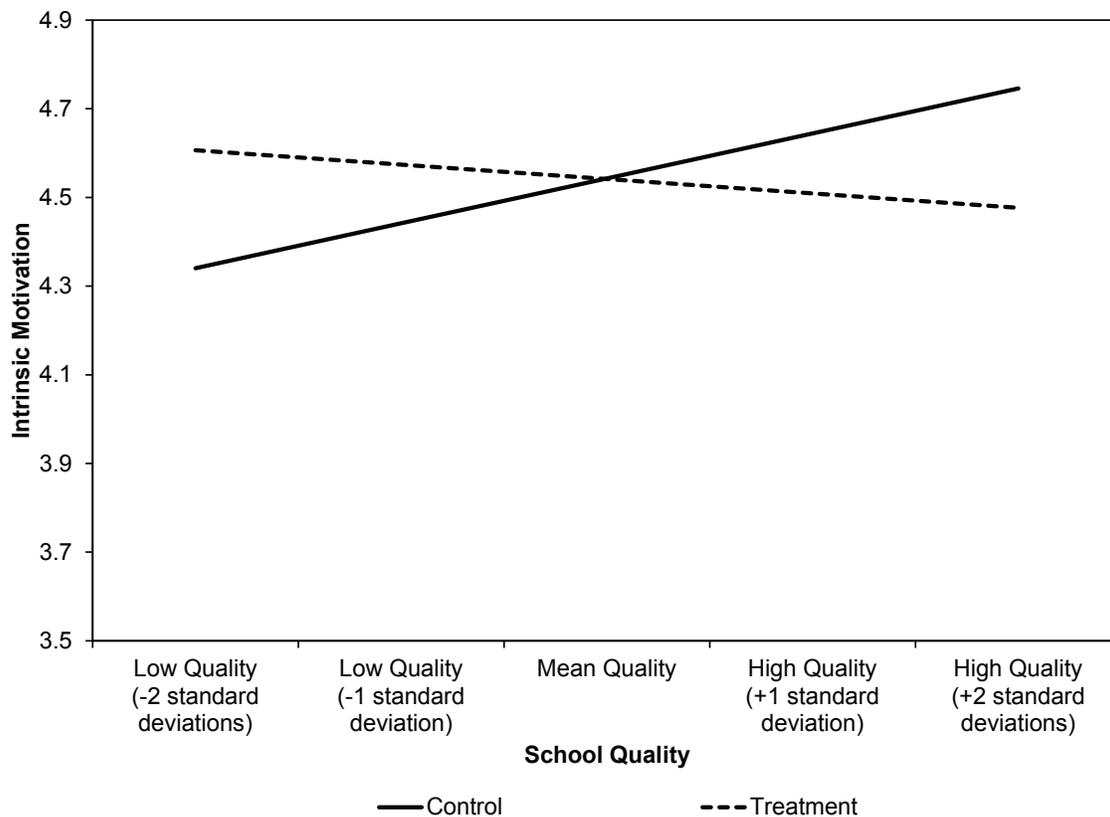


Figure 1. Effects on motivation to learn by school quality.

Note: Estimates are regression-adjusted using ordinary least squares regression models, controlling for pre-random assignment characteristics of children and families.

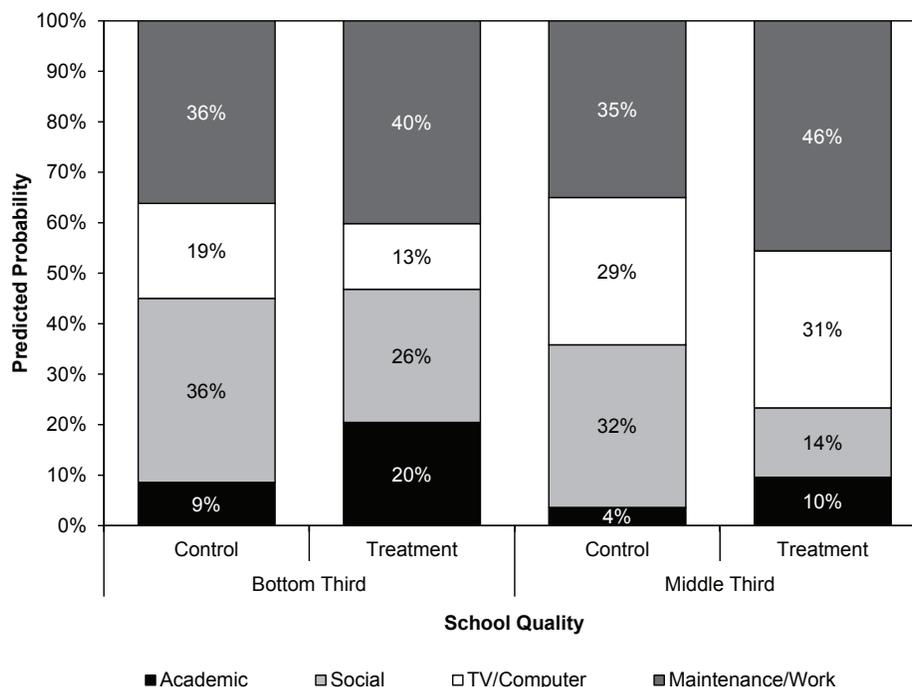


Figure 2. Effects on time use by school quality.

Notes: Estimates are regression-adjusted using multinomial logistic regression models, controlling for pre-random assignment characteristics of children and families.

^aDifference in the proportion of children in the TV/computer group compared to the academic group is significant at $p < .05$.

^bDifference in the proportion of children in the social compared to academic group is significant at $p < .05$.

^cDifference in the proportion of children in the social compared to academic group is significant at $p < .001$.

Figure 2, children in lower- and medium-quality schools (but not higher-quality schools) did change the way they spent their time, in favor of academic activities, as a result of Family Rewards.

Academic performance

For the full sample, there were no detectable effects of Family Rewards on academic performance. However, academic performance effects were also found to vary with school quality. Variations in the effects of Family Rewards were found for academic performance measures including attendance, course credits passed, grade retention, and passing state standardized exams. The largest positive effects on academic performance were found in lower-quality schools. As shown in Figure 3, this effect became smaller as school quality increased, with no effect found on academic performance in higher-quality schools. Differences in observed effects were statistically significant for comparisons at the lowest-quality schools (two standard deviations below the mean), and marginally statistically significant in low-quality schools (one standard deviation below the mean). These findings suggests that having an effect on key mediating processes thought to affect academic outcomes (such as spending more time on academic activities) may indeed translate into improved academic performance. However, a definitive test of this interpretation is beyond the scope of the study.

Parental investment

We found no difference in effects by school quality on the way parents allocated their financial resources on behalf of their children. For the full sample of families, parents receiving Family Rewards increased their spending on daily expenses for their children, including money spent on school, leisure and entertainment, and health care. Parents in the treatment group also increased the rate at which they saved for their children’s future education. These increases were the same regardless of school quality.

Sensitivity analysis

The randomized design of the experimental evaluation provides unbiased parameter estimates of how the effects of Family Rewards varied by school quality. It is plausible, however, that individual characteristics led some people to respond to the intervention differently than others. In other words, families offered the program may have differed in the extent to which they were “ready” to take up the reward offers, and these families may have been distributed differentially across schools. Thus, it could be these individual-level characteristics driving the differences in program effects observed at the school-level (as opposed to something about the schools themselves). A sensitivity analysis was conducted to assess whether the observed moderating effects were in fact attributable to school quality, or if they were attributable to differences in observed child

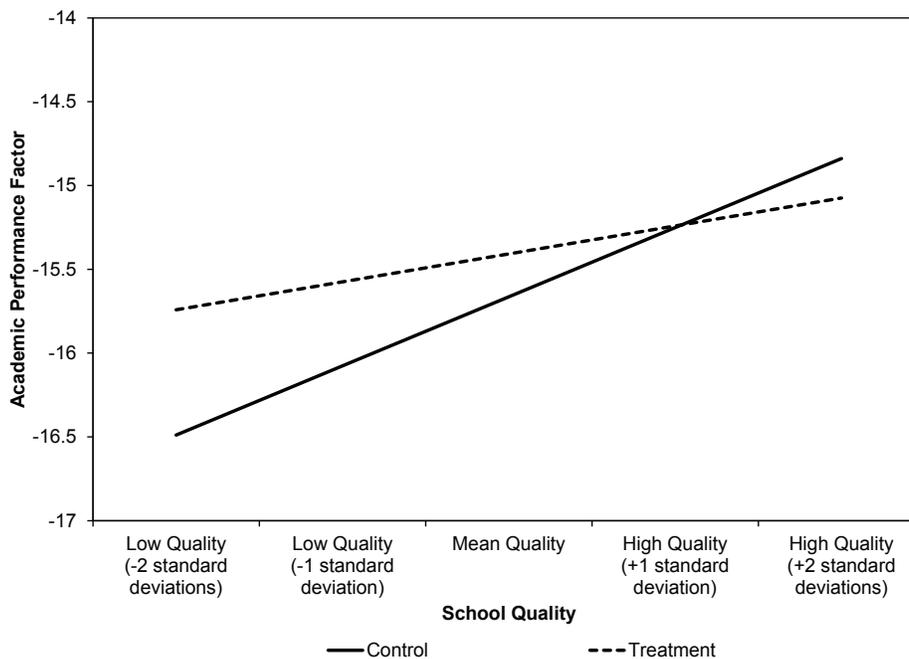


Figure 3. Effects on academic performance by school quality.

Notes: Estimates are regression-adjusted using ordinary least squares regression models, controlling for pre-random assignment characteristics of children and families. The relationship shown is only marginally significant at $p < .07$.

and family characteristics that affect program take-up and are unevenly distributed across schools. Overall, we found that our results were robust to different specifications.

Implications

These findings lead us to hypothesize why academic processes and outcomes were positively affected only for children in lower-quality high schools. For children in a lower-quality school environment, where achievement was likely not the norm, the presence of such incentives may have provided a signal of the perceived value of school. Future programs may consider framing incentives in a way that explicitly promotes the value of education in schools of all quality. For example, incentives can be framed as an opportunity to earn and save money for college rather than simply a reward for high achievement.

These findings have several implications for future conditional cash transfer programs and educational cash incentive programs in general. First, Family Rewards was the first comprehensive conditional cash transfer program in the United States. Because of the very short time line to launch the program, there was no pilot testing of incentives, and thus this program should be viewed as a foundation upon which future programs can build. Replication of these findings in additional locations is necessary to be able to make broader conclusions about conditional cash transfer programs. Updated versions of Family Rewards are currently underway in New York City and in Memphis. Second, future programs should consider the educational context in which they are

implemented, and may consider framing of incentives differently based on school quality, in order to promote better internalization of the behaviors for which incentives are offered. Some evidence indicates that framing incentives as a pathway to improving future educational and professional prospects may promote school engagement.¹² Finally, given the relationship between effects on key academic mediating processes and academic performance, future programs may consider targeting incentives specifically to change these mediating processes and behaviors. This could include, for example, incentives tied to spending time on academic activities, such as attendance at a tutoring program. Effects on academic performance may be stronger as a result. Other educational incentive programs have found positive effects on academic outcomes when incentives are attached to educational “inputs” such as reading a book, compared to incentives for educational “outputs” such as test scores.¹³ Obtaining stronger effects on such potential mediating processes, and on the outcomes being targeted, would allow for a formal test of causal mediation.¹⁴

Limitations

This study has several important limitations. First, these results are not generalizable beyond high school-aged, African American and Latino urban children, or beyond a relatively lower-quality spectrum of schools. Second, the academic outcomes are limited and include only administrative records on attendance, credits passed, grade advancement, and New York State Regents exams. More detailed information such as teacher reports of children’s

behavior in class, or semester grades, would provide a more comprehensive understanding of school performance and achievement. Third, the range of school quality in the sample was relatively restricted, with schools ranked in the top third in terms of quality having a graduation rate of only 71 percent, and only 56 percent and 63 percent of students achieving proficiency on the state English and math exams, respectively. It is thus not possible to know how Family Rewards would operate at schools beyond this limited range. Finally, as noted above, because Family Rewards was a demonstration project, replication of these findings in future evaluations is necessary to be able to make broader conclusions about conditional cash transfer programs in the United States.

Conclusions

One major challenge of program and policy research is to shed light on the processes behind key outcomes, so that programs and policies can address these processes effectively. The findings from this study may position future conditional cash transfer programs to better design incentives that effectively target changes to children's approaches to school as a way to improve academic achievement. These results also bring to light the role of the school context in how incentives affect children, and suggest that incentives should be framed differently depending on the educational context in which they are administered. They provide real world evidence on how a comprehensive set of incentives operate to affect motivation and add to the rich body of literature from lab research on motivation. A fuller understanding of the underlying processes affected by conditional cash transfers is crucial for programs to be effective in ultimately closing the income achievement gap. If adapted successfully to the United States, conditional cash transfer programs may offer a promising new approach to breaking the cycle of intergenerational poverty and restoring equity to low-income families and children to ensure a better life for all citizens. ■

the Opportunity NYC—Family Rewards Demonstration,” MDRC, New York, 2013. Available online at http://www.mdrc.org/sites/default/files/Conditional_Cash_Transfers_FR_0.pdf

⁷This article draws from S. Wolf, J. L. Aber, and P. A. Morris, “School Quality Moderates the Impacts of a Conditional Cash Transfer Program on High School Students: Evidence from an Experimental Evaluation in New York City,” working paper, 2014.

⁸For a summary of evaluation results, see A. Fiszbein and N. Schady, “Conditional Cash Transfers: Reducing Present and Future Poverty,” World Bank Publications, Washington, D. C., 2009.

⁹Riccio et al., “Conditional Cash Transfers in New York City;” J. Riccio, “New Findings on New York City’s Conditional Cash Transfer Program,” *Fast Focus* No. 18-2013, Institute for Research on Poverty, December 2013.

¹⁰The sample for this study includes 511 high-school-aged children from 330 schools in six low-income urban communities. This subset of children in the oldest cohort (in ninth grade at study entry) was selected from the larger Family Rewards evaluation; additional information for this subset was collected directly from children and their parents 30 months after randomization, in the spring of eleventh grade. There were between one and seven sample members at each of the 330 schools, with an average of 1.5 per school.

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¹³R. G. Fryer, Jr., “Financial Incentives and Student Achievement: Evidence from Randomized Trials,” *Quarterly Journal of Economics* 126, No. 4 (2011): 1755–1798.

¹⁴L. A. Gennetian, P. A. Morris, J. M. Bos, and H. S. Bloom, “Constructing Instrumental Variables from Experimental Data to Explore How Treatments Produce Effects,” in *Learning More from Social Experiments: Evolving Analytic Approaches*, ed. H. S. Bloom (New York: Russell Sage, 2006).

¹S. F. Reardon, “The Widening Academic-Achievement Gap Between the Rich and the Poor: New Evidence and Possible Explanations,” in *Whither Opportunity: Rising Inequality, Schools, and Children’s Life Chances*, eds. G. J. Duncan and R. J. Murnane (New York: Russell Sage, 2011).

²R. D. Conger and K. J. Conger, “Resilience in Midwestern Families: Selected Findings from the First Decade of a Prospective, Longitudinal Study,” *Journal of Marriage and Family* 64, No. 2 (2002): 361–373.

³G. S. Becker and N. Thomes, “Human Capital and the Rise and Fall of Families,” *Journal of Labor Economics* 4, No. 3 (1986): 1–39.

⁴See, for example, E. A. Hanushek, J. F. Kain, and S. G. Rivkin, “Why Public Schools Lose Teachers,” *Journal of Human Resources* 39, No. 2 (2004): 326–354.

⁵See, for example, T. Rosenberg, “Helping the World’s Poorest, for a Change,” *New York Times*, January 7, 2011. Retrieved October 1, 2011 from <http://opinionator.blogs.nytimes.com/2011/01/07/helping-the-worlds-poorest-for-a-change/>.

⁶J. Riccio, N. Dechausay, C. Miller, S. Nunez, N. Verma, and E. Yang, “Conditional Cash Transfers in New York City: The Continuing Story of

A path to college completion for disadvantaged students

Emma Caspar

Emma Caspar is the Editor of *Focus*.

A college education can provide a path out of poverty, but low-income students face many obstacles along the way, from difficulty selecting a college that is the right “fit” to knowing about financial aid options. While overall college graduation rates are rising, the gap between the top and bottom income groups has widened considerably in the past four decades, at a time when the payoff to a college degree has dramatically increased. This article reviews current research on policies that could help increase college completion for low-income students.

College disparities

Most low-income high school students hope to attend college, but actual enrollment rates do not reflect this aspiration. Around 30 percent of high school graduates in the lowest income quartile enter college, compared to 80 percent of graduates in the highest income quartile. In addition, those low-income students who do enter college are less likely to graduate than higher-income students.¹

Over half of people from high-income families have a bachelor’s degree by age 25, compared to fewer than 1 in 10 of those from low-income families.² Rates of college entry and completion have been rising overall, but have risen faster for those with higher incomes. Among those in the lowest income quartile, the proportion completing a bachelor’s degree by age 25 rose from 5 percent for those born in the early 1960s to 9 percent for those born two decades later, an increase of only 4 percentage points. For the highest quartile, this rate rose by 18 percentage points over the same period, from 36 percent to 54 percent.³

The disparity in college success by income level is not fully explained by differences in academic preparedness; even after controlling for academic achievement at college entry, students from low-income families with less-educated parents have lower college graduation rates than their higher-income peers with more-educated parents.⁴

What’s so great about a college degree?

These disparities matter because educational attainment is increasingly important to economic success. In 2010, 59 percent of U.S. jobs required applicants to have at least some

postsecondary education or training, up from 28 percent in 1973.⁵ This proportion is projected to reach 65 percent by 2020.⁶ A college degree also greatly increases the chance of economic mobility; for those born into the lowest economic quintile, the probability of making it into one of the top two quintiles is 41 percent with a college degree, but only 14 percent without a degree.⁷ Postsecondary education may also have noneconomic positive effects on people’s lives, including enhanced happiness, better decision-making, more patience, and longer-term thinking.⁸

Impediments

With so many benefits to educational attainment, gaining a better understanding of what stands in the way for such a large proportion of disadvantaged youth would inform policies to smooth their path to college completion. Low-income students face unique challenges in each of the many steps necessary for college success. Research findings on the major impediments are briefly explored below.

Disadvantaged students face challenges from the beginning of the college-planning process. First, they may not be aware of all the financial aid opportunities that are available to them, and may not have accurate information about the actual cost of attending college, or the relative costs of attending particular colleges.⁹ The perception that college is out of reach financially can not only contribute to “undermatching,” where students select schools that will not provide the level of academic challenge they need, but may also lead some students to give up altogether on the idea of attending college much earlier in their K–12 schooling.

A significant proportion of low-income students who graduate from high school and intend to attend college in the fall do not follow through, a phenomenon known as “summer melt.”¹⁰ Summer attrition rates for students who intend to attend college range are generally around 10 percent to 20 percent, with higher rates for low-income students, and rates of around 40 percent for those planning to attend community college.¹¹ Summer melt can occur for many reasons described above, including lack of role models and lack of resources and information needed to complete financial aid forms and manage deadlines.

And while many low-income students who enroll in college are academically prepared, some require developmental (or remedial) education before they can begin earning college credits. Even students who enter college may be underprepared for core subjects such as English and math. Traditional developmental strategies do not appear to be

effective in helping students to catch up, and may be harmful to students who are incorrectly assigned to remediation based on their poor performance on a single test.¹² Students who begin college with college-prerequisite courses often never move on to credit classes, a college-completion impediment discussed more below with promising research findings on a possible remedy.

Beyond facing a lack of support and resources to successfully navigate college preparation and application, including taking standardized tests, completing applications, and obtaining financial aid, many low-income students who survive the application and admissions gauntlet find themselves attending a college that is not a good fit. There is evidence that attending a school that matches a student's own academic ability provides substantial advantages in the chances of graduating from college. Students of all socioeconomic backgrounds who attend selective schools, which tend to have more support resources available, are more likely to graduate, complete college more quickly, and earn more after graduation compared to those who attend non-selective schools, even after controlling for academic ability.¹³

This is a significant problem. Just over 40 percent of all high school graduates in 2004 were undermatched, a phenomenon that is more common among students from low-income families.¹⁴ The great majority of high-achieving low-income students do not apply to selective colleges, even though selective schools would usually cost these students less than the two-year and less competitive four-year colleges to which they do apply, due to generous financial aid often offered by more selective schools.¹⁵ Choosing an insufficiently challenging school is not an issue only for high-achieving students; even students who do not qualify for the most selective schools are still likely to choose schools that are below their academic ability level.¹⁶

While academic undermatching appears to have a number of negative effects, there is little evidence that students perform worse at institutions where their own academic ability is below average for the school. A study that made use of a natural admissions experiment at the University of California found that while students who were overmatched earned fewer credits compared to those who attended less demanding schools, they earned similar grades, and were less likely to drop out than they would have been at less demanding schools.¹⁷

Finally, once enrolled in college, low-income students continue to face challenges in persisting and completing a degree, making them more likely to drop out of college before completing a degree than higher-income students. They may have to work longer hours while going to school, and may need to take on a reduced number of credits in order to balance other responsibilities. Low-income students are also more likely than high-income students of similar academic ability to stop and restart college, often at multiple institutions; these complex college pathways appear to be less effective ways to complete degrees in a timely manner.¹⁸

Increasing college graduation rates

A lot of research has explored how to increase college graduation rates for low-income students. What follows are some promising interventions that appear to have the potential for increasing college enrollment and subsequent graduation rates, some of which are surprisingly inexpensive.

Improving college preparedness

College preparation begins well before students' senior year in high school. Therefore, it is important to get low-income students thinking about and planning for college early in their school careers. Many of the school-level changes needed to increase preparedness would likely require extensive systemic changes in schools (some of which are examined elsewhere in this issue of *Focus*). However, recent work by Daphna Oyserman and colleagues offers some simple interventions that may help students to make the connection between current schoolwork and future success, and to find motivation to persist with work that they find challenging. In interviews of eighth-graders, researchers found that although the great majority stated that they planned to attend college, only half pictured themselves working in a field that demanded a college education. Even among those with the same prior grade point average (GPA), those who expected to have a career that required a college degree spent more time on homework.¹⁹ Similarly, when seventh-graders were presented data on average earnings in the United States that emphasized the salary advantage of those in education-dependent jobs, eight times as many of them completed an optional extra-credit assignment, compared to their peers who did not see the presentation, which suggests that the message motivates students to work harder at school.²⁰ A low-cost, school-based intervention incorporating these ideas and implemented as 11 short sessions over a six-week period was found to improve academic outcomes and reduce depression, school absence, and behavioral problems over a two-year follow-up period, as students moved from middle school to high school. For example, two years after the intervention, students who received it were spending nearly an hour more per week on homework than those in a control group, and had an average GPA of 1.6, compared to 1.4 for the control group. In each ninth grade semester, those in the treatment group also averaged 2.25 more days in school than those in the control group.²¹

Enabling informed decisions

Since, as already mentioned, low-income students and their families often have limited knowledge about financial aid opportunities, and may overestimate the cost of college, high schools could take action to improve financial literacy about college, and to provide assistance in meeting financial aid deadlines and completing forms. There is evidence that this type of assistance can increase both financial assistance application and college enrollment rates. In particular, one study found that while the provision of financial aid information alone had little effect on college outcomes for low-income students, the combination of that information

with assistance in completing the Free Application for Federal Student Aid (FAFSA) substantially increased the number of financial aid applications, the likelihood of receiving financial aid, and college enrollment, and decreased the probability of dropping out of college in the first year. In the year following the experiment, 42 percent of high school seniors and recent high school graduates whose parents received FAFSA assistance were enrolled in college, compared to 34 percent for a control group that did not receive assistance. By three years after the initial intervention, 36 percent of students whose parents received the treatment had been enrolled in college for at least two consecutive years, compared to 28 percent in the control group.²² This intervention, including training, software, and participant incentive payments, cost less than \$100 per person.

A 2008 amendment to the Higher Education Act required all postsecondary institutions receiving federal financial assistance to provide college net price calculators as a tool to give students and their families a more accurate estimate of their actual costs to attend that institution. An analysis of the amendment implementation found that while the net price calculators of grant aid did match well with actual grant aid, the variation of individual financial aid packages among socioeconomically similar students can be large. The authors conclude that net price calculators are a helpful tool that could be improved by keeping cost information more current, and by providing information on the range of grant aid received in addition to the median amount, including aid provided by the institutions themselves.²³

Increasing knowledge about postsecondary options and increasing the number of college applications could also help students enroll in colleges that are a good academic match for them and thereby address another impediment to college success. For students applying to only one or two colleges, the addition of one additional college application greatly increases the probability of enrollment.²⁴ Waiving fees, even small ones, could also encourage students to apply to more colleges. For example, an increase from three to four in the number of free ACT score reports that students could send to colleges resulted in more college applications for those taking the ACT test; low-income students taking the test also attended more selective colleges.²⁵ Prior to this policy change, it cost a student \$6 to send an additional ACT score beyond the three included scores.

For high-achieving low-income students, Caroline Hoxby and Sarah Turner have found that the Expanding College Opportunities project, which provided students with information packets about the application process and net costs for colleges, as well as application fee waivers, resulted in students applying to, and being enrolled in more colleges. The intervention also greatly increased the probability that students enrolled in an academic “match” college, where median student scores were within 5 percentiles of the student’s own score. Compared to a control group, students in the treatment group (including those who did not end up

receiving the treatment) enrolled in colleges that were 19 percent more likely to be a match, and the colleges they enrolled in had graduation rates that were 6 percent higher.²⁶ Since, as detailed above, attending a more selective school is associated with significant positive economic outcomes, this low-cost (about \$6 per student) and easily scalable intervention appears to be extremely cost-effective for high-achieving low-income students. It remains to be seen how well this approach would work for low-income students with lower academic achievement.

Some low-cost interventions have also been found to be effective at combatting summer melt, and helping college-bound low-income high school graduates to follow through with their plans. For example, an automated and personalized text messaging campaign that reminded students of tasks that were required prior to enrollment, and connected them to support from counselors, increased two-year college enrollment by 3 percentage points, at a cost of \$7 per student.²⁷ The text messages had larger effects—from 4 to 7 percentage points—at sites where students had less access to college information and support with the application process. Another intervention that matched students with college-aged peer mentors to provide a first-hand perspective and encourage continuation with the college enrollment process increased enrollment at four-year colleges by 4.5 percentage points.²⁸ The peer mentor intervention cost \$80 per student. Another experiment that looked at the effects of providing mentoring and cash incentives to students late in their senior year of high school found that for women (but not men), those in the treatment group had an increase of 15 percentage points in the rate of college enrollment, compared to a control group.²⁹ Offering cash bonuses without mentoring had no effect.

While both reducing total college costs (as in the Obama administration’s recent proposal to offer two years of free community college tuition for students going to school at least half time who maintain a GPA of 2.5 or higher and are making steady progress toward a degree or transferring to a four-year institution) and increasing the availability of financial aid would make college more affordable, neither option could be considered either simple or low-cost. However, a low-cost intervention such as increasing the availability of information about financial aid options as described above could help more low-income students find affordable options.

Reducing attrition

Even when low-income students successfully enter college, they may still face considerable challenges in completing a degree. As described above, undermatching may decrease the probability of college success, so strategies that increase the probability of a good match between students and colleges could also increase retention.

Another cause of attrition, students who arrive at college underprepared and who are thus required to take

developmental courses, presents a particular set of challenges. While increasing preparedness prior to college entry would clearly be helpful, some students will continue to enter college in need of additional academic support, and there are some feasible strategies for improving provision of that support. Some students are deterred just by the requirement to complete developmental classes, while the majority of those who enter such classes do not complete them and move on to classes that earn college credits.³⁰ While reforming the traditional system of developmental education cannot be considered a simple reform, the momentum to do so appears to be growing at both state and institution levels, and there are a number of promising models being implemented.

Some colleges have used alternative assessment strategies to identify students who would be more successful in traditional classes than in developmental ones. At one school that re-tests all students who are initially identified as requiring developmental coursework, offering them the opportunity to first take a brief refresher course, this strategy appears to give more students access to college-level coursework without impairing their academic success. For example, among all students who took the review course before re-testing, about 60 percent tested at least one level higher in English, and about 35 percent tested at least one level higher in math. These students all had similar or higher completion rates in the courses they were placed in following retesting, compared with their peers who placed directly into the course.³¹ The refresher course, which takes about two hours to complete, is now available online, and is available both to students scheduled for re-testing and to those taking placement tests for the first time.

Community College Pathways use two different programs to help students in need of math remediation to achieve college math credits within one year, rather than the typical two-year sequence of classes that students often struggle to complete. About half of the students in these programs successfully complete within one year, compared to 6 percent of a comparison group of developmental math students who complete a college credit in one year, and 15 percent who complete the traditional two-year sequence and receive a college credit.³²

A strategy to co-enroll students in an introductory college-level English class and a companion developmental course has been shown to increase completion of English 101, provide a more cost-effective way of completing that course, increase persistence to the next year, and increase the number of college-level courses and credits subsequently attempted and completed.³³

There have also been some promising results from “learning communities” at community colleges, which group students together in a set of courses, usually for one semester, with supports such as extra advising or tutoring. For students in developmental education, learning communities that included enhanced support services were more effective.³⁴

Some developmental programs are embedded in a larger array of services. One such program at the City University of New York requires students to attend college full time, and provides an array of supports over three years, including a tuition waiver that covers any gap between a student’s financial aid and tuition and fees, special classes, enhanced advising, career services, public transportation cards, and free use of textbooks. A two-year evaluation of the program found that the program increased the likelihood that students would enroll in each subsequent semester by 8 to 10 percentage points, increased the average number of credits earned over two years by 25 percent (an increase equal to 13 percent of the college-level credits required to earn a degree), and increased the proportion of students who earned an associate’s degree in two years from 8.7 percent to 14.5 percent, a difference of 5.7 percentage points. Students had to fulfill developmental education requirements before earning the college-level credits required to graduate. Data from the first cohort of students in the study indicate the effects are growing over time; by two-and-a-half years after entry, 33 percent of program group members had earned an associate’s degree, compared with 18 percent of control group members, an increase of 15 percentage points.³⁵

Outside the context of developmental education, on-campus supports have also been found to be important for student success. A study of a program that provides one-on-one student coaching found effects on persistence and graduation rates. Coaches contacted students regularly to help them articulate their long-term goals, connect their daily activities to those goals, and support them in building skills such as time management, self-advocacy, and study strategies. Two years after the intervention, students who were randomly assigned to a coach were 14 percent more likely to have remained in school. Four years after the intervention, the average graduation rate for those assigned to a coach was 35 percent, compared to 31 percent for the control group. Coaching was found to produce larger effects than financial aid, while also costing less to implement.³⁶

A study at a large Canadian university found that for women (but not men), a program that combined scholarships with peer advising and facilitated study groups in the first year of college had effects that persisted through the second year. The average GPA in the second year for women in the program group was about 0.3 points higher than for women in the control group. Women in the program group also earned a quarter credit more than controls in the second year. A combination of support services and financial aid was more effective than financial aid alone. The average cost of financial aid and support services per participant was \$739.³⁷

David Yeager and Gregory Walton, among others, have reported very promising results from simple social-psychological interventions designed to support students’ sense of belonging at college.³⁸ For example, in one study first-year college students participated in a one-hour session where they read a short narrative that indicated that many

college students feel at first that they do not belong, but become more confident over time. Students were then asked to write an essay describing how their own experiences at college corresponded with this message, and to record a video of themselves reading their essay, ostensibly to help future college students in their own college transitions. Students who experienced this brief treatment had positive and sustained effects on academic and health outcomes compared to a control group, and these effects were particularly evident for a subgroup of African American students. The treatment tripled the percentage of black students with GPAs in the top quarter of their class, and reduced the black-white achievement gap by half. Three years after the intervention, blacks who had received the treatment reported better health and well-being compared to blacks in the control group.³⁹ Based on results from this and similar interventions, the University of Texas has added a 45-minute “mind-set” intervention to their required online pre-orientation for all new students.

Conclusions

Socioeconomic disparities in college attendance and completion are long-standing and complex problems. As the gap in college completion between those in low- and high-income families has widened, the value of having a degree has only increased. While the causes of this disparity are myriad, and there is no simple comprehensive solution, there are many promising interventions being implemented at points all along the path from middle school to college completion. These include interventions to increase college preparedness, increase knowledge about available college options and cost and economic assistance, improve the degree of academic matching between students and the colleges in which they enroll, rethink strategies for developmental education for students who arrive on campus underprepared, and provide on-campus support to help students stay on track and graduate.■

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