

# Finishing High School: Alternative Pathways and Dropout Recovery

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*John H. Tyler and Magnus Lofstrom*

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## Summary

John Tyler and Magnus Lofstrom take a close look at the problems posed when students do not complete high school. The authors begin by discussing the ongoing, sometimes heated, debate over how prevalent the dropout problem is. They note that one important reason for discrepancies in reported dropout rates is whether holders of the General Educational Development (GED) credential are counted as high school graduates. The authors also consider the availability of appropriate student data. The overall national dropout rate appears to be between 22 and 25 percent, but the rate is higher among black and Hispanic students, and it has not changed much in recent decades. Tyler and Lofstrom conclude that schools are apparently doing about as well now as they were forty years ago in terms of graduating students. But the increasingly competitive pressures associated with a global economy make education ever more important in determining personal and national well-being.

A student's decision to drop out of school, say the authors, is affected by a number of complex factors and is often the culmination of a long process of disengagement from school. That decision, not surprisingly, carries great cost to both the student and society. Individual costs include lower earnings, higher likelihood of unemployment, and greater likelihood of health problems. Because minority and low-income students are significantly more likely than well-to-do white students to drop out of school, the individual costs fall unevenly across groups. Societal costs include loss of tax revenue, higher spending on public assistance, and higher crime rates.

Tyler and Lofstrom go on to survey research on programs designed to reduce the chances of students' dropping out. Although the research base on this question is not strong, they say, close mentoring and monitoring of students appear to be critical components of successful programs. Other dropout-prevention approaches associated with success are family outreach and attention to students' out-of-school problems, as well as curricular reforms. The authors close with a discussion of second-chance programs, including the largest such program, the GED credential.

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John H. Tyler is an associate professor of education at Brown University. Magnus Lofstrom is a research fellow at the Public Policy Institute of California.

**B**y most measures, the nation's high schools did a remarkable job of educating the populace throughout the twentieth century. At least in part because of the secondary education they received in American public high schools, hundreds of millions of U.S. citizens have been able and ready to participate in a dynamic democracy and to contribute to and benefit from an ever-changing economy. Many have used public high schools to help them transition from first-generation immigrant to American citizen. To be sure, the opportunities and the rewards have been uneven, varying by gender, race, and geographic region, but if the twentieth century was, as Claudia Goldin has argued, "the human capital century," with America as leader, then the American public high school system deserves due credit.<sup>1</sup>

Even so, in the final decades of the twentieth century, public education, including public secondary education, increasingly became the focus of criticism and controversy because of failures perceived or real.<sup>2</sup> And criticism directed at the nation's schools has not abated in this new century. A recent focus of widespread concern has been the number of students, particularly black and Hispanic students, who never graduate from high school. One high-profile national dropout study, for example, begins ominously, "There is a high school dropout epidemic in America."<sup>3</sup> And the popular press gave widespread and front-page coverage to a Johns Hopkins University study that coined the term "dropout factory" to describe certain high schools and estimated that the nation has 1,700 such schools.

Whether termed a "problem," a "crisis," or an "epidemic," the large numbers of students who do not graduate from high school

generate clear and widespread concern. To bring some additional light and clarity to the topic, we examine different facets of the dropout issue. We begin with two questions. Just how bad is the dropout "problem"? And who, exactly, is dropping out? We then turn to the costs associated with leaving school early. We conclude by examining the state of knowledge regarding dropout-prevention and "second-chance" programs.

### **Dropout Rates: The Magnitude of the Problem and Measurement Issues**

Given the importance of graduation rates as a performance metric of the nation's high schools, one might assume the existence of well-defined, well-agreed-upon measures of that performance. One would be wrong. Although each state and the National Center for Education Statistics (NCES) all produce graduation and dropout statistics based on "standard measures," recent heated debates over the "true" rates underscore a general unease about how accurately and consistently officials are able to document school performance when it comes to graduating students.

The NCES provides the nation's most commonly cited dropout and school completion statistics. Using primarily two data sources, the Current Population Survey (CPS) and the Common Core of Data (CCD), the NCES provides four different statistics: event dropout rate, status dropout rate, status completion rate, and averaged freshman graduation rate. Table 1 defines these measures, along with the respective data sources. Figure 1 shows the trends in these four statistics from 1972 to 2005.

Based on figure 1, one might conclude that in terms of historical trends, schools are doing relatively well at moving students to

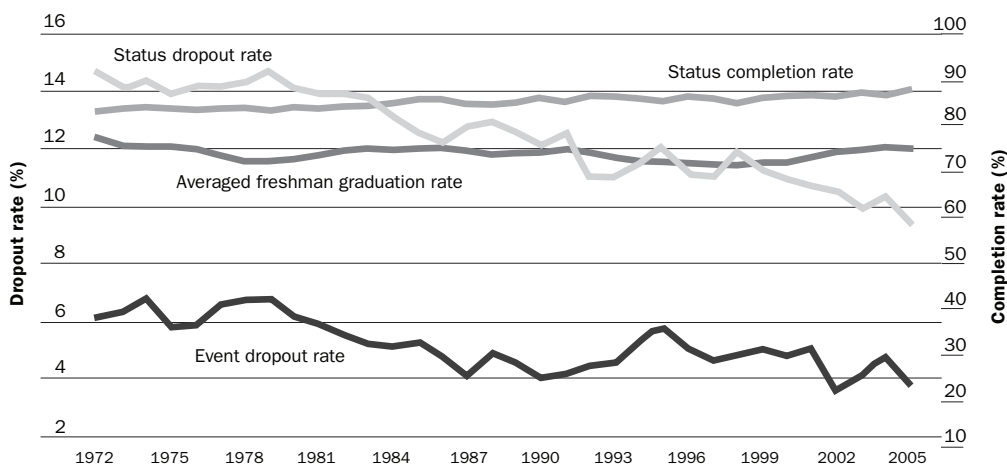
Table 1. Dropout and School Completion Measures

Rate	Age group	Description	Data source	GED status
Event dropout rate	15–24	Percentage of high school students who dropped out of grades 10–12	Current Population Survey	GEDs do not count as dropouts
Status dropout rate	16–24	Percentage of people who are not enrolled in high school and who do not have a high school credential	Current Population Survey	GEDs do not count as dropouts
Status completion rate	18–24	Percentage of young adults who have left high school and who hold a high school credential	Current Population Survey	GEDs are counted as having a high school credential
Averaged freshman (ninth-grade) graduation rate	NA	Percentage of public high school students who graduate with a regular diploma four years after starting ninth grade	Core of Common Data	GEDs are not counted as graduates

graduation. School attainment appears generally to be on the rise—dropout event and status dropout rates are decreasing and school completion rates are steady (averaged freshman graduation rate) or rising slightly (status completion rate). In 2005, a relatively small share, 3.8 percent, of students dropped out of grades ten through twelve, and almost nine in ten (87.6 percent) of the country’s eighteen- to twenty-four-year-olds held a high school credential. But conclusions based on

these government statistics are controversial. Some observers feel that these measures paint too positive a picture of what some call a dropout “crisis,” while those on the other side of the debate suggest that the government figures are at least close to the mark and that the “crisis” label is yet another undeserved black mark on the nation’s schools. Driving the debate are questions about what data are used to calculate the relevant statistics and who is considered a “graduate.”

Figure 1. Dropout and School Completion Rates, 1972–2005



Source: National Center for Education Statistics, “Digest of Education Statistics: 2006” (Washington: U.S. Department of Education, 2007).

Data issues primarily focus on the fact that three of the four widely used national measures—the status completion rate, the status dropout rate, and the event dropout rate—use the CPS. The CPS is a monthly survey of about 50,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics and is a primary source of information on the labor force characteristics of the U.S. population. But the CPS has some recognized deficiencies as a basis for calculating dropout and graduation statistics.

The more important issue, however, is which individuals are considered to be high school graduates. In particular, it matters substantially whether the data count individuals who leave school and later earn a General Educational Development (GED) credential as high school graduates or as dropouts. In terms of official NCES statistics, people who hold GEDs are not counted as graduates in the calculation of graduation rates, such as the averaged freshman graduation rates, but they are treated as completers in the status completion rate.<sup>4</sup>

The distinction between having a traditional high school diploma or a GED credential would be less important if the two differently credentialed groups had equally favorable outcomes in the labor market and higher education. But in terms of labor market outcomes such as wages and employment, GED holders fare consistently worse than do regular high school graduates, and GED holders also get less postsecondary education than do regular high school graduates.<sup>5</sup> Given that dropouts who hold a GED are not the equivalent of high school graduates on two such important outcomes, it seems problematic to treat GED holders as “graduates” in official educational attainment statistics.<sup>6</sup> Indeed, the adequate yearly progress

requirements of the 2001 No Child Left Behind Act (NCLB) state that only students who receive a traditional diploma should be counted as high school graduates. Furthermore, although the GED program may be beneficial to some dropouts, it may have unintended consequences. Several studies, for example, find that the GED program may induce some students to drop out.<sup>7</sup>

Not surprisingly, there are competing views about the GED credential as a marker of successful high school “completion.” For example, some states and local school districts count GED recipients as high school “completers” when computing their own administrative graduation statistics, while others stake out compromises between the two polar positions. In January of 2008, the state board of education in Virginia entertained a proposal to establish a school-level “Graduation and Completion Index” that would give regular high school graduates a weight of 1.0 and GED recipients a weight of 0.75. Satisfactory scores on this index by each school would then be a part of the state’s accreditation process.<sup>8</sup>

Policies of the GED Testing Service (GEDTS) seem to establish a clear boundary between enrolled students pursuing a high school diploma and dropouts who pursue the GED credential. GEDTS policy states that the GED tests may be administered only to people who are “at least 16 years of age and not currently enrolled in an accredited high school...”<sup>9</sup> There are, however, exceptions to the requirement that a candidate for the GED credential must be a school dropout.

In response to requests from state departments of education, the GEDTS has authorized in-school “GED Option” programs whereby some students may remain enrolled

in their regular high school as they pursue a GED. Twelve states now have GEDTS authorization to offer GED Option programs to students who meet certain criteria, including credit deficiency, that place them at risk of dropping out.<sup>10</sup> (Before 2002, a few states operated in-school programs that used the GED tests without the authorization of the GEDTS, but they no longer do so.) The ostensible purpose of these in-school GED programs, whether sanctioned or not, is to keep potential dropouts enrolled and involved in high school. Thus, even though the GED program was designed as a second-chance option for school dropouts, it has a secondary focus on dropout “prevention.”<sup>11</sup>

Schools have strong incentives to participate in the GED Option program, because it allows them to continue to receive average daily attendance funds for participating students, funds they would lose were the students to drop out and leave the school rolls. A close inspection shows a lack of consistency nationwide in how GED Option students are treated in calculating graduation statistics. Some states may award students who successfully complete the GED Option program a regular high school diploma and count them as high school graduates; others count them as “completers” but not as “graduates” in calculating graduation statistics.<sup>12</sup> No good national data on the size of the GED Option program exist, but a 2007 document from the Mississippi Department of Education concludes that if the state were to count GED Option students as high school graduates, the state graduation rate would rise from 61.1 percent to 62.9 percent.<sup>13</sup>

Comparing the NCES status completion rate, which treats GED holders as completers, with the NCES freshman graduation rate, which does not count GED holders as

graduates, makes clear the importance of this issue. In 2005, the NCES status completion rate was 87.6 percent, 13 percentage points higher than the freshman graduation rate of 74.6 percent. The GED is not the only reason for the discrepancy but it may plausibly be the most important. This view is consistent with the work of James Heckman and Paul LaFontaine, who report that graduation rates estimated using data from the October CPS—the data used by NCES to generate the status completion rate—are upwardly biased by 7 to 8 percentage points because they count GED holders as high school graduates. Heckman and LaFontaine conclude that this is the most important source for overstated U.S. graduation rates.<sup>14</sup>

The GED, however, is not the only source of bias in the measures of school attrition and completion. Heckman and LaFontaine report that sample coverage (that is, inclusion or exclusion) of people who are incarcerated, people in the armed forces, and immigrants also creates a bias in secondary educational attainment measures.<sup>15</sup> These coverage issues affect both trends and differences across groups.

Heckman and LaFontaine also find that official statistics that show white and minority graduation rates converging over time are inaccurate, particularly so for males. They note that young black and Hispanic men have been incarcerated at increasingly higher rates than young whites. Such men are not counted in the CPS-based status completion rates because the CPS sample excludes people who are incarcerated. In addition, blacks in particular have been earning GEDs at higher rates in recent years than have whites. Heckman and LaFontaine contend that white-black differences in graduation rates are roughly the same as they were thirty years

ago, about a 15-percentage-point difference favoring whites.

Finally, Heckman and LaFontaine show that when comparable measures are used on comparable samples, a consensus of the graduation rate can be reached across data that have been used by various researchers—for example, the Current Population Survey, the Common Core of Data, the National Education Longitudinal Study of 1988, High School and Beyond, and the National Survey of Youth.<sup>16</sup>

The work by Heckman and LaFontaine helps to reconcile the competing dropout and graduation rate figures computed by researchers such as Jay Greene, Christopher Swanson, and Lawrence Mishel and Joydeep Roy.<sup>17</sup> On balance, the Heckman and LaFontaine estimates suggest that today's overall graduation rates are in the 75 to 78 percent range, with white rates at 84 percent, Hispanic rates at 72 percent, and black rates at about 65 percent. These figures tend to be lower than both official government figures and those put forth by Mishel and Roy. Heckman and LaFontaine's overall graduation rate estimates are higher than the roughly 67 percent rate suggested by Greene, and their minority graduation rates are not as dire as Greene's 50 percent rate.

The apparent confusion and resulting debates over how well U.S. schools are graduating students leads one to consider what kind of data set might be a "gold standard." One possibility would be a national student ID system that would follow students no matter where they were enrolled. Thus, a student who left a school or a district or a state but re-enrolled in another school would remain in the system until graduation or until he or she otherwise left the system. But even an effective national

student ID system would not reveal that some ninth graders had dropped out and left the system until they failed to show up as graduates with their age cohort. Of course, the missing graduates could not be counted as "dropouts" without giving them an extra year or two to graduate in case they had been held back a grade in high school or had decided to return to school. The problem is that even with a very good, individual student ID data system, a dropout becomes a dropout when he or she leaves school and the school-leaving often happens without the kind of consultation that would allow for accurate data coding as to dropout status.

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If schools are to do a better job at having up-to-date information on dropout and graduation rates, they must have more accurate and more appropriate data. And although the Heckman and LaFontaine effort may go a long way in quelling the "dropout debates," it provides no information that a state, school district, or school can use to inform practice and policy. Most researchers who have explored this topic agree that the starting point for quality data is with a student-level ID that would allow states to follow students across schools and districts at least within states and over time.

One national effort to promote consistent state information on student performance is the Data Quality Campaign, which provides guidelines for what constitutes “good graduation and dropout data.”<sup>18</sup> But even when acceptable data systems are in place, the question remains how administrative units at the state, district, and school level will use those data in their reporting. For example, how will these units count GEDs when the incentives from virtually all sources are to have graduation rates that are as high as possible? New Jersey might provide some insight on this question. Heckman and LaFontaine report that in New Jersey, an individual need only pass GED test scores that meet the state GED score requirements to qualify for a state-endorsed high school diploma. These newly credentialed individuals are then included in the official state diploma counts. The critical issue here, as Christopher Swanson and Duncan Chaplin have pointed out, is that under the federal system it is states, not the federal government, that have final authority in determining requirements for a high school diploma.<sup>19</sup> Thus, agreement across states on what represents high school completion may be as important as data development and consistency when it comes to developing “well-defined and well-agreed-upon” measures of schools’ performance in graduating students. The U.S. Department of Education recently recognized the need for action and tightened the NCLB regulations regarding how states calculate high school graduation rates.

We close this section by suggesting the need to consider current graduation rates in the context of historical trends of this measure and the need to consider both trends and current rates in the context of the current global economy. Our interpretation of the research at hand is that graduation rates have

certainly not been increasingly steadily since 1960, as table 1 would suggest. Neither have they been in a steady decline. Rather, the evidence from Heckman and LaFontaine suggests a 2- to 3-percentage-point fluctuation around a relatively flat forty-year trend line centered at about 77 percent. Thus, schools are apparently doing about as well now as they were forty years ago in terms of graduating students. The problem is that just as the competitive pressures associated with an increasingly global economy have increased, the importance of education in determining personal and national well-being has also grown. “Steady as she goes,” then, is an alarming rather than comforting reality when it comes to how well the nation is getting students successfully through high school.

### **Who Drops Out—and Why?**

Even the most optimistic assessments of national dropout rates suggest that far too many students are leaving school early. Economic, societal, and equity considerations all point to the need for interventions that could cause some of the roughly one million students who leave school each year to make a different decision. The importance of reducing the number of school dropouts is also reflected in NCLB, which requires states to incorporate graduation rates in their accountability systems for schools and school districts.

A first step in thinking systematically about how to affect dropout decisions is to have a good understanding of the characteristics and lives of students most at risk of leaving school early. That is, who are the students who tend to drop out, and what causes them to leave school? Although researchers know quite a bit about the characteristics of students who leave school, we know much less about the causal factors that lead to the school-leaving decision.

The great bulk of the research on why students leave school comes from post-dropout surveys and interviews of students who have left school. A recent example is “The Silent Epidemic,” a study of dropouts supported by the Bill & Melinda Gates Foundation that interviewed 467 sixteen- to twenty-four-year-old dropouts across the nation.<sup>20</sup> Other research relies on student responses to questions posed in data sets such as the National Education Longitudinal Study of 1988.<sup>21</sup> Not surprisingly, students report a variety of reasons for leaving school early, and studies consistently find that a complex set of relationships between student, family, school, and community factors are linked with the dropout decision. Importantly, a substantial body of research suggests that the decision to drop out is often not made suddenly as the result of recent and potentially temporary factors, but rather is part of a longer process of disengagement from school.<sup>22</sup>

Although interesting, the reasons dropouts offer to explain why they leave school do not necessarily reveal the true underlying causes, and hence do not positively identify specific factors that school officials and policymakers can address. But effectively and efficiently addressing the dropout problem clearly requires knowing these underlying causal factors.

Students regularly report, for example, some measure of school disengagement as the primary reason for leaving school.<sup>23</sup> The commonality of these responses (“did not like school” and “classes were not interesting”) is often cited as a reason that schools must become more “relevant” and that teachers must learn to structure curriculum and pedagogy so that it is more “interesting” and “engaging” to students at risk of dropping out. Both suggestions may be completely on

the mark and, if enacted on a wide scale, might reduce dropout rates.

But if the causal arrow in the above responses ran the other way, the types of school reform being urged would have a much smaller than anticipated effect on dropout rates. That is, if other nonschool factors cause a student to lose interest in school and drop out, then focusing on school disengagement and ignoring the underlying factors that cause the school disengagement might do little to change the dropout decision. Of course, the goal is to uncover the underlying causes, and it is not clear how well research has done in that realm. As a result, information on the “causes” of dropping out generally rests on a combination of the observable characteristics, behaviors, and outcomes of dropouts, along with their self-reported reasons for leaving school.

### Student Characteristics

Student characteristics associated with a higher probability of dropping out, often called student “risk factors,” are both numerous and oft-cited as dropout “predictors.” Not surprisingly, poor school performance is a strong predictor of dropping out of school. For example, low test scores, course failure, and grade retention have all been found to be strongly associated with leaving school.<sup>24</sup> As noted, weak student engagement, often measured by absenteeism and discipline problems in survey data, is also strongly linked with a higher dropout probability.<sup>25</sup>

Early adult responsibilities have also been linked with a lower likelihood of graduation. One such responsibility is becoming a parent. Although teen parents are more likely than their peers who are not parents to drop out of school, research does not provide a clear picture of whether childbearing has a causal



impact on the probability of quitting school. Not surprisingly, much of the research focuses on women.<sup>26</sup> Early research quite clearly indicates that having a child has a strong negative effect on educational attainment, but more recent work questions this conclusion.<sup>27</sup> Joseph Hotz, Susan McElroy, and Seth Sanders use a creative empirical method in an attempt to obtain causal estimates and find a small negative but statistically insignificant effect of childbearing on teenage mothers' probability of earning a traditional high school diploma.<sup>28</sup> The additional responsibilities and demands of parenthood make this finding surprising. Most recently, Jason Fletcher and Barbara Wolfe, using an empirical approach similar that of Hotz and his colleagues, but also controlling for community effects and using alternative comparison groups, find that teenage childbearing decreases the probability of graduating with a traditional high school diploma by 5 to 10 percentage points.<sup>29</sup>

Out-of-school work also affects the probability of dropping out. Several studies find that students who work while in school are more likely to drop out.<sup>30</sup> A closer look reveals, however, that working a few hours a week has no negative effect and may even have a positive effect on graduating.<sup>31</sup> The negative effect appears with intensive work involvement—more than twenty hours a week—and with certain types of jobs.<sup>32</sup> The effects also vary by gender, race, and ethnicity. Clearly some students who work do not do so voluntarily but as a result of a family situation.

### **Family Characteristics**

Students' family background greatly affects their educational outcomes and is commonly viewed as the most important predictor of schooling achievement.<sup>33</sup> Among the strongest

family domain dropout predictors are parental education, occupation, and income—in other words, socioeconomic status.<sup>34</sup> Although students who need to take a job to help out the family are more likely to drop out of school, Stephen Cameron and James Heckman find that long-run factors associated with parental background and family environment matter the most for students' schooling progress, including graduation from high school.<sup>35</sup> These long-run factors may partially reflect parental involvement in school and the greater human capital investment in children's education in relatively well-to-do families.<sup>36</sup> Family stability, reflected in both family structure and school mobility, has also been linked to quitting school.<sup>37</sup> Potentially important, but less well-researched, are the roles played by family preferences, and attitudes, and how well families are informed about the importance of education in modern society.

### **School Characteristics**

Much of the task of reducing dropout rates falls on the schools. Implicit in NCLB is the notion that schools can affect the dropout decision of students, and research shows that school characteristics do affect student achievement.<sup>38</sup> But although some school characteristics, such as school practices and processes, resources, size, and pupil-teacher ratio, are under the control of school policy, others, such as student composition and location, are arguably not. Russell Rumberger and Scott Thomas find that pupil-teacher ratio, the quality of teachers, and school size all influence the dropout probability of students in the expected direction.<sup>39</sup> And Magnus Lofstrom reports that spending per pupil, school location, and student composition affect students' dropout probability.<sup>40</sup> Furthermore, Cory Koedel finds that teacher quality also determines dropout outcomes.<sup>41</sup>

## Accountability and High-Stakes

### Exit Exams

High-stakes exit exams are the tests that students must pass to graduate. These exams are controversial for a number of reasons, not least because they may lower high school completion rates, especially those of minority students. Existing research does not provide an entirely clear picture of the effect of high-stakes testing. Brian Jacob found that graduation tests appear to have no effect on the probability of dropping out of high school for the average student, but that they make it significantly more likely that the lowest-performing students, who are disproportionately minorities, will drop out.<sup>42</sup> The disproportionately negative effect on low-performing students is also stressed by Thomas Dee and Brian Jacob.<sup>43</sup> Research is decidedly mixed. Several other studies indicate a more widespread negative effect of exit exams on high school completion rates.<sup>44</sup> But one study finds no link between exit exam requirements and high school completion, even for low-achieving students.<sup>45</sup> Overall, most of the evidence suggests that exit exams may not be a graduation barrier for the average student, but that they are for disadvantaged and low-achieving students.

Clearly, of the many factors that affect students' decision to leave school, relatively few, including the economic situation of students' families, are easily affected directly by school policy. But the decision to drop out, once made, is highly costly both to the student and to society.

## Costs of Dropping Out

Every year more than a million children leave school without a traditional high school diploma. The costs associated are large, both for the student who drops out and for society as well. Because minority and low-

income students are significantly more likely than well-do-do white students to drop out of school, the individual costs fall unevenly across groups and ultimately affect important social issues, such as racial and ethnic education gaps, the income distribution, and health disparities.

### Costs to the Individual

The most obvious cost to failing to complete high school is lower expected lifetime earnings. In 2006, the median annual earnings of women without a high school diploma were \$13,255; those of men without a diploma were \$22,151.<sup>46</sup> The median earnings of women and men with a diploma were, respectively, \$20,650 and \$31,715.<sup>47</sup> The earnings of women who drop out are thus only about 65 percent of those of female high school graduates—an annual difference of \$7,395. The earnings of men who drop out are slightly less than 70 percent of those of men with diplomas—an annual difference of \$9,564.

Graduating from high school does not necessarily cause these earnings differences. Because students self-select into schooling levels by the way they perceive the lifetime benefits and costs to themselves of such schooling, it may be wrong to conclude that if a randomly selected individual dropout were to complete high school, his or her earnings would increase by these amounts. But after reviewing research attempting to obtain the causal effects of education on earnings, Cecilia Rouse concludes that “the basic ‘cross-sectional’ relationship (that is, the mean difference in income between those with and without high school degrees) is a fairly good approximation to the causal relationship.”<sup>48</sup> In addition, Rouse shows that relative to high school graduates, dropouts have higher unemployment rates and lower employment

rates. They also work fewer weeks each year.<sup>49</sup> Because of these less favorable employment outcomes, the estimated lifetime earnings of dropouts are \$260,000 less than those of high school graduates. Rouse also shows that dropouts are less likely to benefit from employer-provided pension plans and health insurance.<sup>50</sup>

More education may also improve individuals' health in a causal manner. The observed link between low schooling levels, and poor health may be due to other factors, such as income, that are correlated with both schooling and health. Or it could be that the causal arrow runs in the other direction, with poor health preventing the full pursuit of higher schooling. David Cutler and Adriana Lleras-Muney find a clear relationship between education and health that cannot be entirely explained by labor market outcomes or family background and conclude that better health outcomes have to be included as one of the benefits of more education.<sup>51</sup> The flip side of this link, of course, is that poorer health and higher health spending are additional costs that dropouts face.

### Costs to Society

The costs of failing to graduate from high school are not limited to dropouts themselves, but also spill over to society. These social costs include lower tax revenues, greater public spending on public assistance and health care, and higher crime rates.

Because dropouts do not perform as well in the labor market as high school graduates, as measured by earnings, employment, and unemployment, they also do not contribute as much in terms of tax revenues. Rouse estimates that dropouts pay about 42 percent of what high school graduates pay in federal and state income taxes each year (\$1,600 and

\$3,800, respectively).<sup>52</sup> Over a lifetime, Rouse estimates, the difference in the discounted present value of federal and state income tax revenues is about \$60,000.<sup>53</sup> Given a cohort of 600,000 eighteen-year-old dropouts, these estimates suggest a yearly loss of \$36 billion in state and federal income taxes.

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Public assistance to dropouts is also out of proportion to their share of the population. Jane Waldfogel, Irwin Garfinkel, and Brendan Kelly report that nearly half of single mothers receiving Temporary Assistance for Needy Families (TANF) are high school dropouts and that 27 percent of all single mothers lacking a high school diploma receive TANF (17 percent of high school graduates with no further education).<sup>54</sup> Waldfogel and her colleagues estimate that single mothers with a high school education are 24 percent less likely to be on TANF than are those who are high school dropouts.<sup>55</sup> The authors also estimate that if all welfare recipients who were high school dropouts were high school graduates, welfare costs would fall some \$1.8 billion.<sup>56</sup> Public spending on health insurance is also estimated to be higher for dropouts. Peter Muennig estimates that over a lifetime, the discounted average public health insurance spending is \$35,000 for school dropouts, compared with \$27,000 for high school graduates.<sup>57</sup>

Dropouts are also greatly overrepresented in U.S. prisons. The Bureau of Justice Statistics reports that 68 percent of the nation's state prison inmates are dropouts.<sup>58</sup> Dropouts constitute 62 percent of white inmates, 69 percent of black inmates, and 78 percent of Hispanic inmates. Although these figures represent strikingly strong relationships between education and crime, the extent of causality is unknown. For example, children who grow up in poor, inner-city neighborhoods are more likely both to drop out of school and to engage in criminal activities during the adolescent and post-adolescent years. It is clearly challenging to estimate the causal effect of education on criminal behavior.

In an influential study, Lance Lochner and Enrico Moretti find that education does causally affect individuals' propensities to engage in criminal activities, though with racial differences.<sup>59</sup> Black male high school graduates are more than 3 percentage points less likely to be incarcerated than black dropouts; the share for white males is less than 1 percentage point. Lochner and Moretti also estimate the effect of schooling on different types of crime. They find that, on average, one additional year of schooling will reduce the murder and assault rate by close to 30 percent, motor vehicle theft by 20 percent, arson by 13 percent, and burglary and larceny by about 6 percent. They find no significant negative effect on robbery and rape.<sup>60</sup> Their findings indicate that a 1 percent increase in male high school graduation rates could save as much as \$1.4 billion a year, or up to \$2,100 for each additional male high school graduate.

Students who drop out may also be less effective at parenting and may participate less often and less effectively in the nation's democratic processes. To date there is little research on these costs of school dropout.

The discussion so far has dealt only with the costs—individual and social—associated with dropping out. A full social cost-benefit analysis would include potential social benefits associated with having students leave school early, such as lower public spending on education. It could also be that relatively high dropout rates improve the education of students who remain in school, especially if the dropouts were students who commanded much teacher time and energy. But almost certainly the high individual and societal costs associated with dropping out make it very hard to come up with a plausible scenario where the “benefits” of dropping out outweigh the costs.

## Dropout Prevention

The high costs associated with dropping out make clear the need for programs to help students stay in school. The Dropout Prevention Center/Network lists hundreds of dropout-prevention programs in its online database of “model programs.”<sup>61</sup> Only relatively few of these programs, however, have been rigorously evaluated for effectiveness. Even fewer have proved effective in achieving this goal. As Mark Dynarski and Philip Gleason write in a report on dropout-prevention programs, “Dropping out is as hard to prevent as it is easy to do.”<sup>62</sup> Based on the evidence, one might add that it is equally hard to identify confidently the programs that are effective.

In what follows, we group dropout-prevention interventions into two categories. The first is interventions that set dropout prevention as the primary goal and that target specific students or groups of students. The second is interventions that have a broader goal than dropout prevention and a broader target audience than “at-risk” students, but that, nevertheless, aim to lower dropout rates. The first category embraces programs in the

regular school or in the community, alternative schools for at-risk students, and smaller learning communities that tend to fit the “school-within-a-school” model and that target at-risk students. The second, broader category includes school restructuring or school reform models. Broadly stated, programs in both categories aim to lower dropout rates through one or more of four mechanisms: increasing school attendance, increasing student school engagement and learning, building student self-esteem, and helping students cope with the challenges and problems that contribute to the likelihood of dropping out.

To date, relatively few evaluations of dropout-prevention interventions could be considered rigorous. One of the largest rigorously conducted evaluations was a late 1990s study of twenty-one different interventions, each funded by the U.S. Department of Education’s School Dropout Demonstration Assistance Program (SDDAP). In addition to the SDDAP evaluations, a second source of evidence on the efficacy of dropout-prevention interventions can be found in the Department of Education’s What Works Clearinghouse (WWC), which reviews and synthesizes studies of a wide variety of education interventions. The combined findings of the SDDAP evaluation and the WWC synthesis of dropout-prevention programs leave one less than sanguine about the knowledge base about how to lower dropout rates.

The SDDAP evaluation, conducted by Mathematica Policy Research, Inc., included both targeted and broadly defined dropout-prevention efforts. Targeted interventions were usually evaluated through randomized, controlled experiments, while the evaluations of the school-restructuring efforts were quasi-experimental and used observationally similar schools as the comparison group for

SDDAP schools. The evaluation looked at sixteen targeted interventions and five school-restructuring projects. Eight of the interventions took place at the middle school level. Two of the targeted interventions at the high school level were community-based programs aimed at helping students who had already left school acquire a GED.

The key finding from the SDDAP evaluations is that “most programs made almost no difference in preventing dropping out *in general*.”<sup>63</sup> Some SDDAP programs did make a difference on some outcomes, and we will take a closer look at one of the more successful programs. One of the more consistent positive findings in the SDDAP evaluations, however, involves programs to increase GED acquisition among students who have already left school. Although increasing the GED attainment rate of school dropouts may be a laudable outcome, it seems less clear that it should be considered as successful dropout *prevention*.

The picture is hardly any brighter when it comes to findings of the What Works Clearinghouse. To date, the first-wave WWC review of dropout-prevention programs has looked at fifty-nine studies of sixteen programs.<sup>64</sup> From this group, ten of the programs had undergone evaluations that were rigorous enough to make it possible to reach firm conclusions about program effectiveness.<sup>65</sup> These ten programs include a wide range of interventions: counseling and monitoring, school restructuring and curriculum redesign, financial incentives for students and families, and community services designed to mitigate factors that can negatively affect school achievement and success.<sup>66</sup>

Of the ten programs, five showed promise in reducing dropout rates.<sup>67</sup> Two of the five—

Achievement for Latinos through Academic Success (ALAS) and High School Redirection—are no longer active. ALAS, a pilot program launched in San Diego during the early 1990s, was designed to address student, school, family, and community factors that affect dropping out. At the end of the ninth grade, 98 percent of the students who were randomly assigned to the ALAS program were still enrolled, compared with 83 percent of the students in the non-ALAS control group.<sup>68</sup> Meanwhile, three years after random assignment, 43 percent of the students assigned to the High School Redirection program—an alternative high school program for students considered at risk—had dropped out, compared with 53 percent of the randomly assigned control group.<sup>69</sup>

The three remaining positive programs represent three distinct approaches to dropout prevention. One, Check & Connect, is a relatively intensive program for (mostly) high school students; a second, Career Academies, fits the school-within-a-school model; a third, Talent Development High Schools, is best described as whole-school reform. We discuss each in turn.

### **A Dropout-Prevention Program: Check & Connect**

The Check & Connect<sup>70</sup> model, developed through a partnership between the University of Minnesota, local public schools, and local community service organizations, was originally funded by the Department of Education. The Check & Connect model “was initially developed for urban middle school students with learning and behavioral challenges and was designed to promote students’ engagement with school and learning, and to reduce and prevent dropping out. The model is currently being replicated and field-tested for youth with and without disabilities in

grades K–12 in urban and suburban communities.”<sup>71</sup> Broadly speaking, Check & Connect works with and coordinates services among the student, family, school, and community to help the student succeed and stay in school.

The signature feature of Check & Connect is the assignment of a “monitor” to each student in the program to be the student’s mentor and case worker. In the Check component, the monitor continually assesses the student’s school performance, including attendance, behavior, and academics. Monitors are trained to follow up quickly at the first sign that a student is struggling in any of these areas. The Connect component combines individualized attention to the student with the coordination of services and information about the student across school personnel, family, and community service providers. The program carries a minimum two-year commitment to students and families, including the promise and ability to follow highly mobile youth from school to school so that students do not lose services when they move from their original program site.

In two separate experimental evaluations, Check & Connect showed positive effects on staying in school and progressing through school. One study showed that ninth-grade students enrolled in Check & Connect were substantially less likely than control group members to have dropped out of school by the end of the year—9 percent compared with 30 percent. Another study showed that by the expected graduation year, 39 percent of students in the Check & Connect treatment group had dropped out of school compared with 58 percent of the control group. The high dropout rate associated with both groups indicates the level of dropout risk present in the population targeted by Check & Connect. The cost of implementing the

Check & Connect model was about \$1,400 per student during the 2001–02 school year.<sup>72</sup>

### **The School-within-a-School Model:**

#### **Career Academies**

Career academies are another intervention that rigorous evidence shows effective in lowering dropout rates, at least for students most at risk of dropping out.<sup>73</sup> The career academy model has three key features. First, it is organized as a school-within-a-school: students in a smaller and more personal learning atmosphere stay with the same teachers over the three or four years of high school. Second, it includes both academic and vocational coursework, with the two integrated in the curriculum and in pedagogy. And, third, it uses partnerships between the academy and local employers to build links between school and work and to provide students with career and work-based learning opportunities.

Begun in the 1970s, the career academy model has both evolved in concept and grown in numbers over time. Today some 1,500 career academies nationwide serve a much wider set of students than the “vocational ed” students who were seen as the original constituents of the academies.

The most important study of career academies is an experimental evaluation of more than 1,700 students who applied for admission to one of nine career academies across the nation. The study found that among high-risk youth, the career academies reduced the baseline dropout rate of 32 percent by 11 percentage points and that in the students’ projected twelfth-grade year, 40 percent of the high-risk academy students had earned enough credits to graduate compared with only 26 percent of the high-risk students in the control group.<sup>74</sup> The best cost estimates are that in 2004 the per-pupil cost of

educating a student in a career academy was \$600 more than the average per-pupil cost of non-academy students.<sup>75</sup>

### **High School Reform Models:**

#### **Talent Development High Schools**

High school reform models do not usually state “dropout prevention” as the sole objective for school restructuring. Nevertheless, these reform models often have goals related to dropout prevention, in particular increasing students’ school engagement and academic achievement. Common components of many reform models include: reorganizing schools into smaller “learning communities”; focusing instruction and curricula on careers or on intensive or high-level English and math instruction, or both; increasing family involvement; and sometimes focusing on a college preparatory curriculum for everyone.

Many different reform models have been tried over the years, most without rigorous evidence of success. One exception is Talent Development High Schools (TDHS), a reform model for large high schools that face persistent problems with student attendance, behavior, performance, and dropout rates. The model, developed at Johns Hopkins University, calls for schools to reorganize into small learning communities that feature a curriculum designed to prepare all students for high-level English and math courses, along with measures to increase parent and community involvement in the school. Begun as a partnership between Johns Hopkins and a high school in Baltimore, the TDHS program now includes schools in forty-three districts in fifteen states across the nation.<sup>76</sup> The added cost is about \$350 per student per year.<sup>77</sup>

A research design that followed twenty cohorts of ninth graders for up to four years

in high school in Philadelphia found that 68 percent of the students in TDHS schools were promoted to tenth grade compared with 60 percent of the comparison group.<sup>78</sup> These positive TDHS findings are notable as it has been hard for high school restructuring efforts to document positive results on outcomes of interest, including keeping students in school. At the same time, the findings should probably be viewed with some caution because they are based on a quasi-experimental research design.

### Other Programs

As noted, there are many, many dropout-prevention programs, most of which are “stand alone” programs and many of which are much larger than either ALAS or Check & Connect. As examples, the Valued Youth Program served 108 schools in twenty-four cities in the United States and Brazil during 2002–03, along with an unknown number of schools in Great Britain; the Teen Outreach Program served more than 13,000 students across sixteen states during the 2001–02 school year.<sup>79</sup> These and other larger-scale programs, however, have not been rigorously evaluated, and thus in spite of their apparent popularity, their effectiveness in reducing dropout rates remains unknown.

One program that has been rigorously evaluated through random assignment is the Quantum Opportunities Program (QOP). An intensive and relatively expensive program that offers comprehensive services that begin in the ninth grade, QOP can last for up to five years, providing services even after a student drops out. In six of seven QOP demonstration sites, the cost of the program ranged from \$22,000 to \$28,000 per enrollee (in 2006 dollars) over the full five years of the demonstration, and labor costs in another QOP demonstration site made the program

there even more expensive. In spite of the high costs and intensive nature of the QOP model, experimental evaluations do not offer evidence that QOP participants were more likely to advance in or complete school than were the control group non-participants.<sup>80</sup> These examples suggest that one cannot use a program’s popularity or size, cost, or even intensity as evidence of effectiveness.<sup>81</sup>

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### Summary

An examination of the dropout-prevention interventions that show measurable results shines some light on what it likely takes to reduce a student’s chance of dropping out. Successful programs have some or most of five elements in common. The first element is close mentoring and monitoring of students. With restructuring models, this mentoring occurs as part of the movement to smaller schools or to school-within-a-school models. The normally high adult-student ratio in a smaller learning environment would have to be higher still to reach the level of monitoring found, for example, in Check & Connect. In the High School Redirection model, teachers are encouraged to serve as mentors as well as instructors, and classes are kept small to foster high levels of individual attention. The second element is case management of individual students. Again,



case management is most likely to happen in a restructuring model with a movement to a smaller learning community. The remaining three elements are family outreach; curricular reforms that focus either on a career-oriented or experiential approach or an emphasis on gaining proficiency in English and math, or both; and attention to a student's out-of-school problems that can affect attendance, behavior, and performance.

In closing, we note one complication in designing and implementing dropout-prevention programs. Namely, although common risk factors are important in helping to identify potential dropouts, they are relatively inefficient predictors of who will in fact drop out.<sup>82</sup> For example, the risk factors that best predict dropout for high school students are high absenteeism, being over-age by two years, having low grades, and having a child. Using these factors should help identify a group of students with the highest probability of dropping out. Mark Dynarski and Philip Gleason found that these factors would in fact identify a group where one in three students would actually drop out. Although this rate is higher than the baseline 15 percent dropout rate that Dynarski and Gleason find based on the full sample of high school students, one could still question the use of these predictors to assign students to dropout-prevention programs. After all, a program serving students based on these predictors would serve many students who would not need the services and would fail to serve many students who would need them.<sup>83</sup> Because most programs use a common set of risk factors to target students for intervention, Dynarski and Gleason's work helps to explain why so few programs show positive results, and it challenges program designers and practitioners to develop better ways to identify potential dropouts.

## Second-Chance Programs

Many national education systems around the world tend to channel students into particular pathways at an early age, with few opportunities for mid-course corrections. In contrast, the decentralized U.S. system has relatively porous boundaries between different "paths" through the system and, in particular, tends to offer "second-chance" options that can allow for mid-course corrections. We now look at the second-chance options for students who have made the dropout decision.

As measured by sheer numbers, the most important second-chance option for dropouts is, by far, the GED program. Conceived and developed in the late 1940s as a way to certify that returning World War II veterans who had left their high school classrooms to serve in the war were ready for college or the labor market, the program has grown from 50,000 test takers in 1955 to about 670,000 individuals who attempted the exams in 2007.<sup>84</sup>

As noted, GED holders do not fare as well as regular high school graduates in the labor market, and they get much less postsecondary education. What do these findings say about the GED as a second-chance option for dropouts? The answer is that it depends on the skills that are in place when one drops out of school. For an academically able student who leaves school with a solid set of basic cognitive skills, there is little advantage to acquiring a GED *except* to move into postsecondary education.<sup>85</sup> Because the academically able person can probably pass the GED exams with little extra effort or preparation, the GED is unlikely to lead to extra human capital accumulation.

On the other hand, for a person who leaves school with poor reading, writing, or math

skills, it may take substantial work and time to improve these skills enough to pass the exams. For such a person, pursuing a GED could increase marketable skills, making the GED a valuable second-chance option. To the extent that the market rewards these skills, such students could expect better labor market outcomes.<sup>86</sup>

Although the GED is the preeminent second-chance option, students who have left school also have opportunities to get a regular high school diploma, typically in an alternative school operated by the school district. These alternative schools structure coursework and class time to better accommodate the work schedules and parenting responsibilities of students who have left or are contemplating leaving school.

In New York, for example, thirty “transfer high schools” in the 2007–08 school year served some 9,000 students. These alternative schools, which operate out of the Office of Multiple Pathways to Graduation in the New York City Department of Education, are designed for students who are “over-age and under-credited or have dropped out of school.”<sup>87</sup> As this target population shows, the line between dropout prevention and second-chance option is not always distinctly drawn: some programs and schools serve both purposes.

A second alternative school option in New York is the Young Adult Borough Centers (YABC), evening academic programs for students “who might be considering dropping out because they are behind or because they have adult responsibilities that make attending school in the daytime difficult.”<sup>88</sup> In the 2007–08 school year, twenty-two YABCs served about 5,500 students. When students earn all required credits and pass all required

exams, they are awarded a diploma from their regular high school.<sup>89</sup>

New York’s transfer high schools and YABCs, like most other alternative school programs such as Chicago’s Evening High School Program, try to address dropout risk factors that are more difficult for more traditional high schools to address. Alternative schools tend to be smaller and to have lower student-teacher ratios. They try to offer a more individualized and personalized education experience, and they are often characterized by flexible course scheduling or non-traditional school hours, or both. These schools also tend to offer more support programs for students, such as child care for teen parents, and they often focus on connections to college or work, or both. Although alternative high schools are increasingly seen as an important tool for both dropout prevention and dropout “recovery,” researchers as yet know little about how well these schools achieve stated goals.

There are two other routes to a high school diploma for students who have dropped out of school. One requires the student to earn the necessary high school credits that were lacking when he or she left school. These credit-earning programs are often delivered by community-based organizations that have an agreement with a sanctioned diploma-granting organization such as the local school district or with the state department of education. No hard data exist on the numbers of students who receive a high school diploma by going back and earning the necessary credits.

A second route to a high school diploma for school dropouts is through programs that allow individuals to demonstrate that they have high school-level skills. Although some

states have developed and offer a diploma program that relies on demonstration, a national program has been in existence since 1979. Students in the National External Diploma Program (NEDP) demonstrate their high school-level skills by “applying their life experiences in real-life situations.”<sup>90</sup> When an NEDP assessor certifies that the applicant has met benchmark skill levels, the cooperating school district awards a high school diploma. This alternative high school diploma program is as yet a very minor part of the second-chance landscape; only 1,700 people nationwide earned a high school diploma through the NEDP program in 2006–07.<sup>91</sup>

In terms of both human capital accumulation and education credentialing, the nation’s community colleges provide another second-chance option for dropouts. Most community colleges have an open-enrollment policy combined with placement exams that determine whether applicants are ready for postsecondary education credit programs or whether they first need to complete remediation courses to raise their skill levels. Open admission policies, combined with relatively low tuition and an array of remedial courses, make community colleges a potentially viable second-chance option for school dropouts who wish to move directly into postsecondary education.

Of course many dropouts may well need more from a second-chance program than human capital accumulation or education credentialing. Given the many different factors that are often associated with the dropout decision, dropouts often need help with non-academic issues to get their life back on track. Since most program evaluation studies have focused on the effectiveness of programs in reducing dropout rates or

improving educational attainment or labor market outcomes, researchers have little information on how existing programs achieve these goals by improving the overall quality of life of dropouts.

## **Conclusion**

In a world in which education is becoming ever more important, finding solutions to the dropout problem is one of the most pressing issues facing America’s high schools. A first step on this path is to accumulate data that will allow for a more accurate depiction of the dropout problem. Most states now have data systems in place that assign unique identification numbers to public school students. These student IDs can be used to link students to school enrollment and graduation data, providing a way to produce accurate enrollment and graduation statistics for students who remain in public schools in the state. These state-by-state systems rarely allow the accurate tracking of a student who leaves a school in one state to re-enroll in another state—a problem given the relatively high dropout rates associated with student mobility. At the same time, states are still likely to be able to obtain rather accurate graduation and dropout statistics because the prevalence of across-state moves for school-leaving-age students is relatively low. The ideal solution would be a national student identifier akin to Social Security numbers that would allow for dropout statistics from the national to the state to the individual school level.

Even if the United States were to move to a national student ID system, it would still be necessary to settle on how the GED credential should be viewed in computing dropout statistics. Should students who are enrolled in high school in a GED Option program be counted in enrollment statistics?

Should students in these programs who get their GED while still enrolled in high school be counted as high school graduates or as dropouts or as partially-weighted high school graduates? How should students who drop out of school and obtain out-of-school GEDs “on time” for their graduation cohort be counted when it comes to computing dropout rates? Given the many students who obtain a GED, answers to these questions will have a large effect on ultimate dropout statistics. Given the evidence indicating that dropouts with the GED credential do not do as well in the labor market, or pursue postsecondary schooling to the same extent, as traditional high school graduates, treating GED holders as equivalent to high school graduates seems inappropriate.<sup>92</sup>

Finally, what is to be done to lower dropout rates and increase high school graduation rates? The research base for answering this question is woefully inadequate. Although hundreds of dropout-prevention programs exist, from small, discrete programs to whole-school reform models, little hard evidence reveals what does and does not work to decrease the probability of dropping out. The direction for future research is thus clear: more rigorous studies of dropout-prevention strategies are needed. Studies that take advantage of lottery assignment mechanisms in programs that tend to have more applicants than places can produce powerful results that can withstand scrutiny. Likewise, pilot programs can often be designed to generate a rigorous and convincing evaluation, as did the previously discussed ALAS program in San Diego.

Increasing the minimum school-leaving age is another possible, partial, policy solution to the dropout problem. States vary both in minimum school-leaving age, between sixteen and eighteen, and in the extent to which they offer exemptions to the rule based on, for example, parental consent or student-related work reasons, or both.<sup>93</sup> Research has quite consistently shown that students in states with a higher school-leaving age stay in school longer.<sup>94</sup> But before concluding that all states should raise to eighteen the age at which students may legally leave school, it is necessary to recognize that the most recent research indicates that raising the minimum drop-out age above sixteen will not fix the dropout problem. Philip Oreopoulos estimates that such a change would decrease the dropout rate about 1.4 percentage points.<sup>95</sup> He also finds that enforcing the school-leaving age is a factor and recommends that “if states are serious about lowering dropout rates through compulsory schooling, they need to better enforce these laws.” Overall, minimum school-leaving-age policies appear to be a tool that, used properly, can have some, but not a large, effect on dropout rates.

Although researchers have much to learn about which dropout-prevention programs work, they do know that trying to keep students in school is not cheap. They have also learned, however, that the costs to society of each student who fails to graduate from high school are high. What lies ahead is learning not only how to keep students in school, but also how to muster the public will to fund and support programs that are proven effective in doing so.

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