

# R & D Connections

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## Dropping Out of High School: Prevalence, Risk Factors, and Remediation Strategies

By Jeremy Burrus and Richard D. Roberts

### Key Concepts

- *Dropping out* — To quit a course or school without achieving a diploma.
- *Dropout* — A student who fails to complete a school or college course.
- *Dropout factories* — Schools with very poor graduation rates.
- *Theory of Planned Behavior* — The Theory of Planned Behavior states that the best predictor of behavior is one's intention to perform that behavior. In turn, intentions are determined by attitudes (evaluation of the behavior), subjective norms (social pressure to perform the behavior), and perceived control (one's belief that he or she has the ability to perform the behavior).

As a reader of ETS's *R&D Connections*, you have doubtless graduated from high school and, more than likely, from college. But what if you had not? In what ways would your life be different? Such questions are of particular interest to us as scientists at ETS's Research and Development division and its Center for Academic and Workforce Readiness and Success.

To address the high school dropout problem, educational institutions must identify early on which students are likely to drop out. We are exploring the possibility of working with state boards of education on projects that identify students at risk of dropping out of high school. This is not only a problem for high schools, but also for colleges and universities. To that end, we have just embarked on a multiyear study to predict dropout rates at Northern Kentucky University. The work on dropouts whether in high school or college supports ETS's mission of advancing quality and equity in education.

### A Bleak Prospect

High school dropouts earn \$9,200 less per year on average than those who graduate. Over the course of their lifetimes, they will earn an average of \$375,000 less than high school graduates, and roughly \$1 million less than college graduates (Center for Labor Market Studies, 2007). This income gap has increased over recent years: median earnings of families of high school dropouts were nearly 30% lower in 2004 than they were in 1974 (Achieve, 2006). Furthermore, high school dropouts are three times more likely to be unemployed than college graduates. Chances are also much higher that they will be living in poverty compared to high school graduates (Bridgeland, Dilulio, & Morison, 2006). Given these facts, it is not surprising that those with lower levels of education also tend to be less healthy (Lleras-Muney, 2005).

It is not only the individual that suffers economically from dropping out. Society also pays a price when students fail. Forty percent of 16- to 24-year-old dropouts received some form of government assistance in 2001. And it is estimated that each high school dropout who turns to drugs or crime costs the nation anywhere from \$1.7 million to

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*“ETS can design assessments that predict which students are most at risk for dropping out. Researchers have identified several factors related to dropping out of school, and many of these factors can be identified early on in a student’s school career.”*

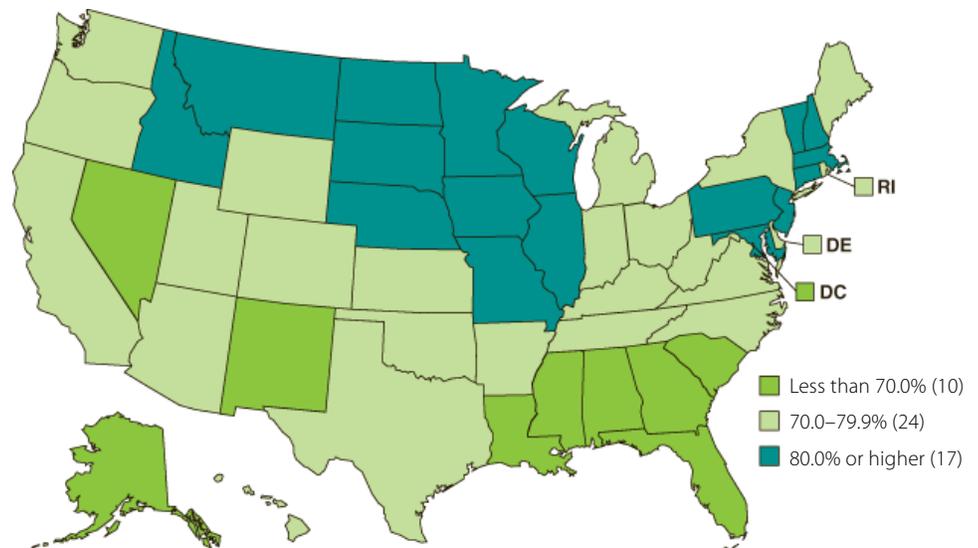
\$2.3 million dollars over his or her lifespan (Bridgeland, 2006). High school dropouts may — taken together — represent billions of dollars annually in lost revenue for the U.S. economy (Achieve, 2006; Christenson & Thurlow, 2004).

As an educational assessment organization, ETS can design assessments that predict which students are most at risk for dropping out. Researchers have, as shown below, identified several factors related to dropping out of school, and many of these factors can be identified early on in a student’s school career. ETS can support this field by providing reliable assessments that measure these factors, thus helping educators identify students in need of intervention while there is still time.

### Changing Status Quo

It is our hope that our work will help change the dropout “status quo,” but let us begin by reviewing the current state of affairs. How many young people drop out of high school? For 2009, the National Center for Education Statistics (NCES) estimates that 8.2% of all non-incarcerated 16- to 24-year olds in the United States were not enrolled in school and had yet to earn a high school degree (Aud et al., 2011). That adds up to about 3.17 million people. Furthermore, 40% of all incarcerated 16- to 24-year olds in the United States are high school dropouts, adding an additional 205,000 people to this population. This figure may need to be revised upwards as it does not include a group that NCES’s research may not well represent — those whose immigration status is undocumented. If we add this group to the total, the number of 16- to 24-year-old dropouts will probably exceed 4 million at any one time. The average graduation rate by state is depicted in Figure 1.

**Figure 1. Average freshman graduation rate for public high school students, by state or jurisdiction: School year 2007–08**



Source: U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics.

*“Seventy percent of the participants in one study were confident that they could have graduated high school if they had stayed in school, and 66% said they would have worked harder if their teachers and parents had had higher expectations of them.”*

The dropout numbers for ethnic minorities are considerably higher. In 2009, the proportions of 16- to 24-year-old high school dropouts were 10.7% for African Americans, 15.9% for American Indians, and 17.9% for Hispanics. This problem is exacerbated in urban centers (Neild & Balfanz, 2006). Researchers estimate that as few as 50% of African-American, American Indian, and Hispanic students graduate from high school in some cities (Bridgeland et al., 2006).

These are dismal numbers, but we do have reasons to believe that they can be improved. Some of the most compelling reasons for hope come from the dropouts themselves. For instance, Bridgeland et al. (2006) conducted focus groups and face-to-face interviews of a diverse set of 467 dropouts aged 16 to 25 in 25 locations across the United States. Most interviewees believed that they had the ability to earn a high school degree: 70% said they were confident that they could have graduated high school if they had stayed in school, and 66% said they would have worked harder if their teachers and parents had had higher expectations of them. One should take care in interpreting these results, however, as this was not a nationally representative sample.

In addition, many respondents were aware of the importance of having a high school diploma. Eighty-one percent of the people interviewed said that getting a high school diploma was essential to their personal success. Furthermore, the great majority of dropouts regretted dropping out: 74% said they would have stayed in school if they could decide again. In addition, 76% of those who said they regretted their decision to drop out said that they would return to school if that option existed for students in their age group (Bridgeland et al., 2006).

These individuals are clearly not lost causes, and there is value in identifying students at risk of dropping out. If we can reach these students before they drop out and intervene to keep them in school, we can improve the future of both individual students and the nation as a whole.

### **The Dropout Process**

Dropping out is a process that begins well before high school, and students exhibit identifiable warning signs at least one to three years before they drop out (e.g., Allensworth, 2005; Neild & Balfanz, 2006; Roderick, 1994; Rumberger, 2004). Furthermore, most students who drop out tend to do so relatively early in their high school careers. One recent study found that most students who dropped out of the Philadelphia public schools did so by the end of the 10th grade (Neild & Balfanz, 2006). Although students in Pennsylvania do not have the legal right to drop out until they are 17 years old, these students are referred to as “undercredited,” meaning that they have successfully completed relatively few courses compared to the number of years they have spent in school. This means that they have dropped out for all practical purposes even though they are not legally allowed to do it at that age. Furthermore, 70% of Philadelphia students classified as “near dropouts,” or students who attend class less than 50% of the time, were in the ninth or 10th grade. These students had a 45% chance of dropping out if they had reached ninth grade, a 34% chance if they had reached tenth grade, a 23% chance if they had reached eleventh grade, and a 16% chance if they had reached twelfth grade (Neild & Balfanz, 2006).

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What are some of the early warning signs that a student may drop out? Below we outline early indicators of student dropout risk. These include both demographic and performance indicators. Later we outline some psychosocial factors — factors related to personality and motivation — found to be associated with dropping out of high school. Table 1 displays a summary of these factors.

**Predictors of Dropout Risk: Early Warning Indicators**

Students at risk for dropping out display certain easily identifiable characteristics, some of which are demographic and some of which are related to their performance in school.

**Table 1: Factors associated with dropping out of high school**

| Demographic Characteristics                   | Performance Characteristics              |
|---|--|
| Comes from low-income family                  | Lack of credits earned                   |
| Male  | Poor attendance                          |
| Members of racial or ethnic minority group    | Poor grades (especially in core courses) |
| Older than the average student in their grade |  |

| Self-Identified Factors About Self | Self-Identified Factors About Others            |
|------------------------------------|---|
| Class not interesting              | Adults did not expect them to perform in school |
| Lack of engagement with school     | Parents not involved in education               |
| Tests too difficult                | Teachers did not seem interested in school      |
| Poor attendance                    |   |

**Demographics.** Demographic indicators of at-risk students include the following (Allensworth, 2005; Roderick, 1994; Rumberger, 2004):

- Coming from a low-income family
- Being a member of a racial or ethnic minority group
- Being older than the average student in one’s grade
- Being male

**Performance.** Researchers have found performance indicators that can identify students at risk of dropping out as early as eighth grade with a high degree of certainty. The previously mentioned study of Philadelphia’s public schools found each of the following factors measured in eighth graders to predict dropping out: low attendance, poor grades in core courses, and being overage for one’s grade (Neild & Balfanz, 2006).

An eighth grade student had at least a 75% chance of dropping out if he or she:

- a) attended school less than 80% of the time in eighth grade, and
- b) failed mathematics and/or English during the eighth grade.

This research categorized ninth grade students as “at risk” if they:

- a) attended school less than 70% of the time in ninth grade,
- b) earned fewer than two credits during the ninth grade, and
- c) were not promoted to the 10th grade on time.

Overall, 80% of eighth and ninth grade students who were categorized as “at risk” eventually dropped out of high school.

Other studies have found similar results. For example, in a study of students in Chicago’s public schools, Allensworth (2005) created an indicator variable to designate whether ninth-grade students were “on track” to graduate. Students were classified as not “on track” if they had low numbers on at least two of the following risk factors: attendance, grade point average, credits earned, and individual grades. This method of classifying the students in Chicago’s public school system was 85% accurate in predicting high school graduation (Allensworth, 2005).

Another example comes from an investigation of a small school district in Massachusetts, where students with the largest drop in performance during the transition from elementary school to middle school, and from middle school to high school, were most likely to drop out (Roderick, 1994). This result further reinforces the conclusion of the study of Philadelphia students that students at risk for dropping out can be identified at, or prior to, the beginning of high school.

### **Predictors of Dropout Risk: Psychosocial Factors**

Other predictors of dropping out of high school may be characterized as psychosocial factors, or factors related to personality and motivation. For example, it is possible to use the extent to which students — and their parents and teachers — actively engage in the educational process to predict how likely the students are to graduate. Engagement is multifaceted and includes the level of identification with the school and the development of positive relationships with peers and teachers. Forty-seven percent of participants in the Bridgeland et al. (2006) focus-group study said that they did not find school interesting, and that this was a factor in their decision to drop out. Such lack of engagement may not be limited to the students. Many of them doubted that their teachers were interested in school or student learning, and felt that they were more concerned with completing their workday than teaching class.

This lack of adult engagement is a recurring theme in research done by Bridgeland et al. In a 2006 study, 69% of the dropouts claimed that adults did not expect them to perform well, and that these low expectations contributed to their decision to drop out. Moreover, these students’ feelings seem to be accurate. In a follow-up study that involved interviews with teachers, Bridgeland, Dilulio, and Balfanz (2009) found that only 32% of surveyed high school teachers agreed with the statement, “We should expect all students to meet high academic standards and provide extra support to struggling students to help them meet those standards” (p. 22). Empirical research has in fact demonstrated that teacher expectations do indeed affect both grades and students’ likelihood of dropping out (Kaufman, Bradbury, & Owings, 1992).

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Many participants in the Bridgeland et al. study (2006) also said that they felt insufficiently challenged by their teachers and that classes were not motivating. Most participants in the survey responded that expectations to complete homework were very low: 80% said they completed one hour or less per day, while 26% said they completed no homework. Higher parent and teacher expectations could have increased the likelihood that they would have graduated. As stated earlier, 66% of participants claimed that they would have worked harder in high school if more had been asked of them. Research does however suggest that few teachers would have done that. In the Bridgeland et al. (2009) follow-up study, 76% of the teachers placed most of the responsibility for the dropout problem on the students; only 13% said that teachers were responsible.

Parental involvement in a student’s education plays an important role for his or her success in school (White & Kelly, 2010). Several dropouts in the Bridgeland et al. (2006) study indicated that their parents were not engaged in their education, or had become involved too late to make a difference. Twenty-one percent of the participants said that their parents were “not at all aware” and 51% of participants said that their parents were “just somewhat aware” of their school attendance and grades. Furthermore, 28% said that their parents were “not at all aware” that the student was on the verge of dropping out, and 50% of participants said that their parents were “just somewhat aware” of this fact (Bridgeland et al., 2006).

We see a need for more study of attitudes as a psychosocial factor that predicts drop out. Specifically, the *Theory of Planned Behavior (TPB)* — a psychological theory that includes the role of attitudes — holds promise in predicting drop out. Briefly, the theory says that intentions are the best predictor of behavior and that intentions are predicted by:

- *Attitudes*, meaning a person’s evaluation of his or her own behavior or of others’ behaviors;
- *Subjective norms*, which refers to the social pressure one feels to perform the behavior; and
- *Perceived control*, meaning a person’s perception of his or her own capability to perform the behavior.

Thus far, only one study has used this theory to predict high school drop out, and it did so with great success (Davis, Ajzen, Saunders, & Williams, 2002). In this study, inner-city high school sophomores completed a short questionnaire that assessed each of the components of the TPB. The authors then predicted whether the students would graduate from high school three years later. Results revealed that the participants’ responses as sophomores significantly predicted whether they eventually graduated or dropped out.

### **“Dropout Factories”**

There is a subgroup of high schools in the United States where the annual graduation level is at best 50% (Balfanz & Letgers, 2004), making them de facto “dropout factories.” About 15% of all high schools in the United States belong to this category, and half of all

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dropouts in the country are “produced” by these schools. A very large portion of all minority student dropouts come from such dropout factories; about 50% of the African-American and 40% of the Hispanic students in the United States attend them. Most of these schools are located in the country’s largest cities, or in the rural south and southwest.

#### **What do these schools have in common?**

*Poverty.*

Balfanz and Letgers found a strong relationship between poverty and the dropout rate: The higher the percentage of a school’s students living in poverty, the higher the dropout rate. Poverty seems to be one of the strongest, if not the strongest, predictor of a school’s dropout rate. This is underscored by the fact that minority students graduate at the same rate as white students when attending schools in low-poverty areas.

#### **Can We Reduce the Dropout Rate?**

The research discussed here on predicting high school dropouts would be nearly inconsequential unless something could be done about it. Fortunately, we see reason for optimism that graduation rates can indeed be improved. But two things are needed for this change to happen.

1. To keep students from dropping out, we need to know which students are most at risk. It should be clear by now that we have the ability to identify the students who are most likely to drop out. We can also identify high schools with extremely high dropout rates. This means that we can intervene both at the individual student level, and at the school or district level.
2. We need effective intervention programs. Many dropout intervention programs have been developed, but we do not know which of them would have the best effect on dropout rates. Some do hold promise, however. The What Works Clearinghouse at the Institute for Education Sciences (IES) evaluates educational interventions, and it has evaluated 28 dropout prevention programs. Given space limitations, we will not discuss individual intervention programs, but invite interested readers to learn more about these programs by visiting the IES website.<sup>1</sup> Of the 28 dropout prevention programs described on the IES website, 13 have demonstrated some “evidence of positive or potentially positive effects for at least one improvement outcome,” meaning that they have demonstrated some effectiveness in helping students to stay in school or show improvement in school. Of these 13, however, only five have demonstrated “potentially positive” effects in helping students to complete school. This is not to say that the other eight programs do not help students to complete school; however, there is no evidence to date that they do. The main point is that, although some programs appear promising, more research is needed. Clearly, though, some programs seem to be on the right track.

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<sup>1</sup> <http://ies.ed.gov/ncee/wwc/reports/topicarea.aspx?tid=06>

## Concluding Comments

There is no denying that student dropout rates are a major social and economic problem in the United States. Too many students leave high school without graduating. This is costly not only for the individual, but also for the entire society.

The narrative surrounding the dropout problem is often one of doom and gloom, but we would like to finish by offering a more positive perspective. While it is clear that the United States desperately needs to improve high school graduation rates, it is a possible task if our citizens and policymakers demonstrate the will to do it. We do know how to identify the great majority of students on track to drop out, and we can identify the schools that are most likely to produce dropouts. In addition, researchers and educators are developing promising interventions that can help these students.

The good news is that we as a nation can ameliorate the dropout problem, if only we can mobilize the necessary resolve.

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