

# Falling Off Track during the Transition to High School: What We Know and What Can Be Done

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*Ruth Curran Neild*

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## Summary

Ninth grade, observes Ruth Curran Neild, marks a critical juncture in American schooling. Students who manage the academic demands of the transition to high school have a high probability of graduating four years later. But those who do not—who fail to earn as many credits as they should during ninth grade—face a substantially elevated risk of dropping out of high school.

Neild examines four theories about why ninth grade poses difficulties for some students. The first is that ninth grade coincides with life-course changes, such as reduced parental supervision and increased peer influence. The second is that in moving to a new school, students must break the bonds they have formed with their middle-school teachers and peers. The third is that some students are inadequately prepared for high school. The final theory is that the organization of some high schools is itself a major source of students' difficulty. Each theory, says Neild, suggests a particular type of policy response.

The strongest evidence, observes Neild, points to inadequate preparation for high school and the organization of high schools. Reform efforts thus far have tended to address high school organization, with or without a focus on instructional quality or helping students to catch up on academic skills. Evaluations of these reforms, says Neild, suggest that both school organization and instructional improvement are necessary to keep ninth graders on track to graduation.

Neild notes that school districts and state departments of education also are addressing the problem. In addition to supporting comprehensive school reform with a focus on ninth graders, districts have created accountability indicators of how well high schools are keeping ninth graders on track. States are helping districts to develop their capacity to maintain and analyze data on ninth-grade progress, including “early warning indicator systems” that identify students who are falling off track to graduation.

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As American students progress through the K–12 educational system, they encounter several key transition points. These transitions generally coincide with the commencement of a new level of schooling: the beginning of elementary school, the move to the middle grades, the start of the high school years. Transitions in schooling are moments of great promise for children, holding the potential for personal growth, new learning, and greater independence and responsibility. At the same time, as any parent will attest who ever has watched a child disappear through the schoolhouse door for the first time, school transitions are moments of peril. Students who do not navigate a school transition well face the possibility of personal and academic turmoil and even falling off track for promotion and graduation.

The entrance to ninth grade marks one such critical juncture in American schooling. For 80 percent of ninth graders attending public schools in the United States, the eighth- to ninth-grade move is a literal one, involving the switch from an elementary or middle school to a high school with a 9–12 grade structure.<sup>1</sup> Regardless of whether a change of school occurs, ninth grade is widely understood to mark the beginning of the high school years and to usher in a new set of academic expectations. From states' high school diploma standards, which typically assume that the task of earning course credits toward graduation begins in ninth grade, we can infer that the K–12 educational system views ninth grade as a new level of schooling.<sup>2</sup> The entrance to ninth grade also may serve as a social marker, signaling to parents that the young person deserves greater independence and to peers that the student is worthy of inclusion in the social activities of older adolescents.<sup>3</sup> Entering ninth grade, then, may

be thought of as a transition to a new stage in the life course as much as a transition to a new school.

The high schools that serve the majority of American students in grades nine to twelve have long been aware of the anxiety and confusion associated with starting ninth grade. In response, they have sought to make ninth graders more comfortable by organizing programs and activities that will help freshmen find their way around an unfamiliar school building, tackle more challenging academic material, and negotiate the more complex adolescent social scene.<sup>4</sup> Many students adjust to ninth grade with only minor difficulty and steadily earn course credits toward graduation. For some students, high school provides an academic and social experience that is a vast improvement over the middle grades. For example, ninth grade can mark the point at which some students begin to establish a personally fulfilling social identity. Among students who received grades of mostly C or lower on their eighth-grade report cards, attending a high school with fewer classmates from eighth grade is associated with higher freshman grades, suggesting that there may be some benefit to starting anew with a different set of peers and teachers.<sup>5</sup>

In this article I focus not on the students who experience rather minor stress associated with starting high school or for whom high school represents a welcome relief from the middle grades, but rather on the subset of students for whom the transition to ninth grade is marked by the failure to stay on track to high school graduation.<sup>6</sup> As early as the first and second report periods, these students receive failing grades in some or all of their courses. By the end of the school year, they have not accumulated enough course credits to be promoted to tenth grade.

Evidence is growing that students who fall off track during the freshman year have very low odds of earning a high school diploma.<sup>7</sup> Indeed, analysis of the progression of students through high school suggests that approximately one-third of the nation's recent high school dropouts never were promoted beyond ninth grade.<sup>8</sup> For policymakers and educators, then, the task of increasing high school graduation rates necessitates a serious look at which students experience trouble in ninth grade, the reasons for their difficulty, and what the research evidence reveals about how to help them stay on the pathway to graduation.

### **Defining What It Means to Be Off Track for Graduation**

The most basic definition of being off track for graduation is not having earned sufficient course credits in the normally allotted time.<sup>9</sup> From the moment that students enter ninth grade as first-time freshmen, their fundamental task is to earn credits toward graduation by passing their classes.<sup>10</sup> In many school districts, high school students must earn specific numbers and types of credits (for example, one credit in mathematics, one credit in English) to be promoted to the next grade.

School districts set their own standards for promotion to the next grade, and promotion requirements vary from one district to another. Some of this variation is evident in promotion standards in the largest school districts. For example, students in the Miami-Dade Public Schools are required to earn four full-year credits, including either math or English, for promotion to tenth grade. Ninth graders in the Chicago Public Schools face stricter requirements; they must pass three of their core subject courses and earn at least five full-year credits toward graduation to be promoted to tenth grade.

Freshmen in the District of Columbia Public Schools must earn six credits, including English and Algebra I.<sup>11</sup>

Comprehensive national evidence is not available on the number of school districts that have grade-to-grade promotion standards at the high school level or on the nature of those promotion requirements. A cursory perusal of the promotion policies in large districts suggests that passing five full-year courses is a common standard for promotion to tenth grade. However, given the above examples of cross-district variation in promotion standards, one ought not to infer that a student necessarily is on track to graduation merely because she is classified as a tenth grader during her second year of high school. For districts and schools seeking to determine which ninth graders have gotten off track to graduation, a more informative indicator is whether the student has earned course credits in all or most of the classes taken during the ninth-grade year.

### **Getting Off Track in Ninth Grade: Educational Consequences**

There are obvious short-term educational consequences for ninth graders who fall off track to graduation. At a minimum, because failed courses must be retaken, the graduation date will be deferred unless the student redoubles his efforts to earn the missing credits in time to graduate with his cohort. However, one of the most compelling reasons for focusing on ninth grade is the evidence that getting off track at that point has negative long-term educational consequences. The strongest evidence of these consequences comes from large urban districts with student databases that allow researchers to track the educational progress of individual students from year to year.

Ninth graders from these large urban districts who get off track face a substantially elevated risk of dropping out of high school. Students in the Chicago Public Schools who got off track during ninth grade had a 22 percent on-time graduation rate, compared with an 81 percent graduation rate for students who were on track after their first year in high school. The five-year graduation rate was not much different (28 percent for off-track students and 85 percent for on-track).<sup>12</sup> Similarly, in Philadelphia, just 20 percent of freshmen who were not promoted to tenth grade on time—that is, after their first year in high school—graduated within six years. When statistical controls were introduced for a range of pre-high school student characteristics, the researchers found that each additional course failed in ninth grade increased the odds of dropping out by approximately one-third.<sup>13</sup>

The peril of the ninth-grade year is demonstrated clearly by the number of credits earned by typical high school dropouts. In Philadelphia, one-third of the dropouts were still considered ninth graders, credit-wise, even though most had been enrolled in high school for several years; an additional 25 percent had earned only enough credits to be classified as tenth graders.<sup>14</sup> In New York City's Class of 2003, approximately 30 percent of the students who did not graduate in four years had earned no more than one-quarter of the credits needed for graduation, making them the equivalent of tenth graders, at most.<sup>15</sup>

## How Prevalent Is Getting Off Track in Ninth Grade?

Assessments of the prevalence of ninth graders getting off track to graduation have drawn on three types of evidence: the Common Core of Data (CCD), a federally created

database of student enrollments by grade and school for publicly funded schools; state reports of the percentage of students repeating ninth grade; and nationally representative survey data. Each of these data sources has strengths and weaknesses. Because each data source relies on reports of grade enrollments rather than credits earned (the latter being a better on-track indicator), these data are most helpful for ruling out the possibility that academic difficulty in ninth grade is limited to a particular type of district or geographic locale. Further, some estimates can be biased by population growth or decline within a geographic area and by student movement between public and private schools. Taken together, however, these data sources point to the transition to high school as a place in the educational progression where students across the United States are at increased risk of getting “stuck.”

## Evidence from National Databases of Student Enrollment

Comparing the number of students enrolled in ninth grade with the number in eighth grade during the previous school year and tenth grade during the subsequent year provides a rough indication of the extent to which ninth graders are not promoted to the next grade. Enrollment data from the CCD indicate that during the 2003–04 school year, half of the school districts in the United States had a tenth-grade enrollment that was no greater than 95 percent of ninth-grade enrollment. In one-quarter of the districts, tenth-grade enrollment was no greater than 90 percent of that of ninth grade.<sup>16</sup>

Drawing on the same data set, Walt Haney and several colleagues show that during the thirty years from 1970 to 2000, ninth grade increasingly became a primary bottleneck grade. In 1970, there were 3 percent fewer

tenth graders than ninth graders; by 2000, that share had risen to 11 percent. Some evidence indicates that the increasing number of ninth graders is at least partly the result of statewide exit exams, many of which are given in tenth grade; I discuss this evidence later. Some states had ninth- to tenth-grade attrition rates that were considerably higher than the national average: for example, Florida reported enrolling 24 percent fewer tenth graders in 2000–01 than ninth graders the previous year, and South Carolina followed closely with 23 percent fewer ninth graders.<sup>17</sup>

### **Evidence from the State Reports**

Yearly data from 1990 to 2000 on retention by grade, obtained from some twenty-five state departments of education by Robert Hauser, Carl Frederick, and Megan Andrew, show a similar pattern of ninth grade as a major point at which students get “stuck.” In the vast majority of states and years in that sample, more than 10 percent of the students were not promoted to tenth grade. Notably, in this sample of state-reported data, the share of students who were not promoted from eighth grade to ninth grade increased rather dramatically from 1990 to 2000.<sup>18</sup>

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### **Evidence from Nationally Representative Surveys**

Using nationally representative data from the Current Population Survey (CPS), a household survey of educational and economic indicators conducted by the United States Bureau of the Census, Hauser, Frederick, and Andrew found that grade retention is highest in kindergarten and first grade, followed by a moderate gradual decline from second to fifth grade, a slight elevation in the middle grades, and a spike in ninth grade.<sup>19</sup> Their analyses suggest that, from 1996 through 2003, approximately 3 percent of ninth graders were not promoted. This estimated retention rate differs considerably from estimates from the Haney study and state reports, both of which suggest that approximately 10 percent of ninth graders are not promoted. One explanation for the lower CPS estimates is that they rely on parent reports of whether the student has been retained in grade. Many parents responding to the survey may assume that a student in the second year of high school is automatically a tenth grader, even though the student who has failed to earn sufficient credits may still be classified as a ninth grader by the school district. CPS estimates of ninth-grade retention also may be lower because the survey covers families with children in private schools as well as those whose children are enrolled in the public system.

### **Getting Off Track in Ninth Grade: Demographic Correlates from National Data**

Although the CPS likely underestimates the share of ninth graders who are not promoted, it provides useful comparative evidence about how the incidence of getting off track in ninth grade varies across race and ethnicity, gender, and family socioeconomic status. During the period 1996–2003, African American and

Latino ninth graders were more than twice as likely as white students to spend an additional year in the ninth grade (approximately 5 percent for African Americans and Latinos versus 2 percent for white students). Ninth-grade boys were retained in ninth grade at almost twice the rate of girls (4 percent versus 2 percent). Likewise, approximately 5 percent of ninth graders whose families were in the lowest income quartile were not promoted, as compared with approximately 1 percent of those whose families fell in the highest quartile.<sup>20</sup>

Analysis of the CCD from the 2002–03 and 2003–04 school years shows that, compared with school districts in rural or suburban areas, districts in large cities are more likely to have a tenth-grade enrollment that is no greater than 90 percent of their ninth-grade enrollment. Fifty percent of the districts in large cities had tenth-grade enrollments that were 90 percent or less of the ninth grade, compared with approximately 30 percent of districts in suburbs or rural areas. School districts with higher shares of low-income students are more likely to enroll fewer students in tenth grade than in ninth. Among districts in which more than 75 percent of the students were from low-income families, the majority had tenth-grade enrollments no greater than 90 percent of their ninth-grade numbers; in districts with no greater than 25 percent low-income students, just over 10 percent of the districts had a disparity of this size between ninth- and tenth-grade enrollments.

## Why Do Ninth Graders Get Off Track?

If one were to ask researchers, policy makers, and ninth-grade teachers to explain why ninth graders get off track, their responses most likely could be categorized into one or more

of four general types of explanations or theories. Each theory suggests a policy response with a different kind of emphasis. However, the various theories are difficult to separate analytically, and few studies seek to weigh the empirical evidence for each or to assess its independent contribution to getting off track in ninth grade.

### Life-Course Changes

The first, or developmental, argument holds that ninth grade coincides with life-course changes that are independent of the structure or academic requirements of schooling itself. Although the transition to ninth grade does not occur alongside the dramatic physical changes of early adolescence, a number of studies have shown that parental influence wanes when children enter high school. Many parents, for example, decide to grant greater autonomy to their children at this transition point.<sup>21</sup> The reduction of parental supervision and support, accompanied by the increase in peer influence that characterizes adolescence,<sup>22</sup> may result in increased risk-taking behaviors and declining academic performance. A study by Christopher Weiss and Peter Bearman provides good national evidence of the increase in drinking, smoking, and drug use between eighth and ninth grade.<sup>23</sup>

If the primary cause of ninth-grade difficulty were life-course changes, then one would expect to see an increase in academic difficulty during ninth grade regardless of whether the student moved to a new school, the degree of his or her academic preparation, or the particular characteristics of the school he or she attends. Although it is likely that such life-course factors as changes in parental supervision, development of romantic relationships, and a perception among older peers that a student in high school is

now worthy of inclusion in risk-taking and illegal activities affect ninth-grade outcomes, the evidence also suggests that they cannot explain fully the difficulty that students encounter in the ninth grade. The evidence reviewed below indicates that students with weak academic preparation are more vulnerable to getting off track during ninth grade and that aspects of high school organization and curriculum can have an appreciable impact on ninth graders' academic success.

### **The Transition to a New School**

A second explanation links ninth-grade problems with the transition to a new school. According to this argument, the transition breaks the social bonds that students had formed with their teachers and peers from the middle grades. Students must negotiate new social relationships and adapt to the practices and routines of the new school.<sup>24</sup> The uncertainty and anomie that result may manifest themselves in behavior problems, weaker attendance, and poor course grades. Indeed, it is common for eighth-grade classmates to disperse to multiple high schools, including private schools. On average, ninth graders attend high school with about 60 percent of their eighth-grade classmates.<sup>25</sup> If the transition itself were the primary source of ninth-grade difficulty, then one would expect to see better ninth-grade outcomes for students who attend the same school for eighth and ninth grade than for those who transition to a new school.

One reason why it is difficult to assess the importance of the transition to a new school for ninth grade is that the vast majority of American students start high school at a new school. The resulting lack of diversity in school structure complicates efforts to estimate the effect of moving to a new school for ninth grade. Using the nationally

representative Add Health data set, Weiss and Bearman found that while grade point averages (GPAs) declined and substance use increased between eighth and ninth grade, students who made the transition to a new high school actually had *better* outcomes than those who remained at the same school for eighth and ninth grade. The "fresh start" of high school appeared to be especially important for students who were less attached to school in eighth grade or who had a history of grade retention. This analysis, viewed in combination with other data suggesting that some students benefit from attending high school with many new classmates, provides suggestive evidence that the transition to a new school is likely not a major source of students' getting off track in ninth grade.<sup>26</sup>

### **Inadequate Preparation for High School**

A third explanation is that students' inadequate preparation for high school is the primary cause of ninth-grade difficulty. When students who struggled academically in the middle grades or who might have earned decent grades but were inadequately challenged before high school enter ninth grade, their lack of knowledge and skills finally catches up with them. According to this theory, students with poor math and reading skills are overwhelmed by the academic demands of high school. Floundering academically, they become discouraged about ever completing high school, may become truant, and finally drop out. A corollary explanation is that, regardless of academic skills, students have learned how to "get by" in earlier grades but do not realize until too late that advancement in high school depends on earning credits. Taken to its logical conclusion, this theory would suggest that the organization and climate of high schools are not the primary culprits for ninth-grade difficulty; rather, the problem lies with

students' weak preparation for high-school work or misconceptions of the diligence required to earn a high school diploma, or both. If inadequate academic skills were a primary source of the difficulty in ninth grade, then one would expect to see few or no off-track students among those with the highest eighth-grade test scores and many off-track students among those with low eighth-grade test scores.

Indeed, for some ninth graders who get off track to graduation, success in school has been elusive for many years; recent research in Philadelphia indicates that approximately 50 percent of the eventual dropouts could be identified on the basis of poor grades or attendance, or both, before entering high school.<sup>27</sup> Approximately 40 percent of the dropouts could be identified using these grade, attendance, and behavioral indicators as early as sixth grade.<sup>28</sup>

The best evidence for the effect of skills, beliefs, and coping strategies acquired (or not acquired) before entering high school comes from analyses of student cohorts in large urban districts. Data from these districts indicate that students who enter high school with academic skills below grade level are at higher risk of getting off track to graduation than those with on-grade skills. For ninth graders in Philadelphia who scored at grade level on a standardized test in mathematics, the odds of not being promoted to tenth grade were 42 percent lower than for those who scored two or more years below grade level. Likewise, for students at grade level in reading comprehension, the odds of not being promoted were 25 percent lower than for those who were reading at least two years below grade level. Moreover, mathematics and reading comprehension skills independently predicted grade retention (that is, they

were not simply proxies for one another).<sup>29</sup> In Chicago, students who scored two or more years below grade level on tests of math or reading had a 50 percent chance of failing a core course or dropping out in ninth grade.<sup>30</sup>

Although data from these districts show a link between eighth-grade standardized test scores and getting off track in ninth grade, studies of cohorts of Philadelphia students showed that failing math or English in the middle grades was a better predictor than standardized test scores of academic difficulty in ninth grade.<sup>31</sup> The stronger effect of course grades relative to test scores provides indirect evidence that, in addition to math and reading skills, academic attitudes, behaviors, and coping strategies developed before high school have an effect on ninth-grade outcomes.

Researchers have begun to identify the specific kinds of academic skills that freshmen need to hone in order to succeed in challenging high school courses. No specific evidence links particular math skills, such as the ability to work fluently with rational numbers, to getting off track in ninth grade. But it is not difficult to follow the chain of logic. Drawing on research in mathematics education as well as the structure of mathematics itself, the National Mathematics Advisory Panel's 2008 report recommended that to succeed in algebra, students need to have acquired a "thorough understanding" of fractions, decimals, and signed numbers during the middle grades.<sup>32</sup> However, students who enter high school below grade level in mathematics have only a weak facility with these intermediate operations.<sup>33</sup>

Ninth graders' ability to read course texts with fluency and comprehension affects their ability to achieve across many classes. Reading



and making sense of information presented in texts is an important component of most tasks that students confront in social studies, science, and English. For students who enter high school below grade level, trying to read and comprehend standard high school texts is deeply frustrating, and many simply give up. Although some ninth graders struggle with decoding (that is, identifying specific words), the greatest challenge for most freshmen is reading with fluency and comprehension, particularly when confronted with more complex passages involving advanced and subject-specific vocabulary.<sup>34</sup>

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#### **High School Organization and Climate**

A final explanation suggests that high schools themselves are the major source of the difficulty that some students encounter in ninth grade. The traditional social organization of the high school, in which teachers' primary allegiance is to subject-matter departments and students are hurried from one forty-five-minute class period to another, can leave students feeling anonymous and alienated. Classmates change from one class period to another, and each school year brings a mostly different set of teachers. From the teacher's perspective, there is little opportunity or

incentive to learn more about how the student is doing in other classes. As a result, the responsibility for shepherding the student to graduation falls to no one with firsthand knowledge of how she is doing in her classes.<sup>35</sup> Further, high school teachers often do not have the expertise or inclination to work with students who enter high school with weak academic skills. If high school organization were the primary explanation for ninth-grade difficulty, then one would expect to see dramatically lower percentages of freshmen who get off track in high schools that have certain kinds of organizational features, better instructional quality, or a more positive academic climate.

In fact, although data from large cities show that students with weaker grades and test scores are more likely to get off track in ninth grade, a substantial minority of off-track ninth graders tested at or above grade level or had no course failures or poor attendance in eighth grade, or both. In Chicago, a student who was two years above grade level in reading or mathematics had approximately a 25 percent chance of ninth-grade course failure or dropout.<sup>36</sup> In Philadelphia, about 30 percent of eventual dropouts were students who, despite having no failing grades in core courses and reasonably good attendance in eighth grade, earned few credits or became so disengaged with school that they attended less than 70 percent of the time in ninth grade.<sup>37</sup>

Statistics such as these may point to a negative impact of high school organization and climate on students who appear to be on track for success when they enter ninth grade. The argument that some high school characteristics make a difference for ninth graders is bolstered by analyses that show how, within a single school district, ninth-

grade course failure rates can vary considerably, even after one adjusts for characteristics of the schools' student populations.<sup>38</sup>

Beginning in the 1990s, researchers began to analyze data from a large national study of high schools (the National Educational Longitudinal Study, or NELS), looking for organizational features of high schools that were linked with student achievement. These studies did not address ninth-grade outcomes specifically, but their relevance to the argument that high school organization may contribute to ninth-grade difficulty is clear. Statistical analysis of the NELS data suggested that students attending high schools that were “communally” organized—where there was shared responsibility and decision making among staff, a commitment to a common set of goals, and an emphasis on personal relationships between teacher and students—experienced greater learning gains than their peers at “bureaucratically” organized schools. At these latter schools, staff roles were highly differentiated, decision making was hierarchical, and affective relationships between teachers and students were de-emphasized.<sup>39</sup> Studies based on the NELS data also suggested that student learning growth was greater at high schools that implemented greater numbers of “reform” practices, such as common planning time for teachers, schools-within-a-school, interdisciplinary teaching teams, and a cooperative learning focus, than at schools with more traditional practices.<sup>40</sup> In addition, researchers found that students at smaller schools (typically with fewer than 1,000 students) experienced greater learning gains, particularly compared with students attending high schools with more than 2,000 students. The evidence also suggests that smaller schools may be more important for low-income students.<sup>41</sup>

A case study in a large urban district suggests that teachers who are assigned to ninth graders are more likely than teachers in the upper grades to be uncertified, new to the profession, new to the school, or sometimes all three.<sup>42</sup> Like students in the lowest academic tracks, ninth graders have been considered among the least desirable students to teach at the high school level. It is difficult to quantify the effect on ninth graders of assigning them inexperienced teachers, but common sense suggests that, on average, such teachers are less likely than their more senior colleagues to have the needed classroom management skills, mastery of instructional strategies for ninth graders who need to catch up on academic skills, and access to the various material resources of the school.

Research also suggests that disorganization and chaos at the beginning of the school year has a negative effect on ninth graders' course performance. In a 1997 survey, 40 percent of ninth graders in a large urban district reported that at least one of their classes had not had enough seats for every student during the first two weeks of school (a result of intentional over-registering of students to classes, on the assumption that many will drop out anyway). Almost half of the ninth graders surveyed reported a teacher change in at least one class. Forty percent reported a change in course schedule since school began. Ninth graders who experienced more of this turbulence at the beginning of the school year earned lower GPAs, controlling for a range of demographic and academic characteristics measured in eighth grade.<sup>43</sup>

The best evidence for the effect of specific features of high school climate on ninth-grade outcomes comes from research that examines the relationship between student outcomes and students' reports about their

high schools. Using survey data, researchers in Chicago examined the relationship between school climate (as reported by students) and student outcomes. They found that ninth graders averaged 0.78 fewer course failures at schools with high levels of trust between teachers and students than at schools with low levels of teacher-student trust. Similarly, there were fewer course failures at schools where teachers offered more help with personal problems, gave students more personal attention in class, and held higher expectations for students to work hard, stay in school, and have high aspirations for the future. The relationships between these school climate variables and student outcomes remained after statistically controlling for characteristics of students—including prior achievement levels and family socioeconomic status—that are known to be related to a more positive school climate.<sup>44</sup>

### **What Can Be Done in Schools to Keep Ninth Graders On Track**

Each of the four types of explanations for ninth-grade difficulty suggests a particular type of policy response. If getting off track in ninth grade is explained primarily by adolescent development, then the best response should be to surround young people with supportive and caring adults who can help them navigate the treacherous waters of growing up. If the transition to a new school is the culprit, then the most appropriate response should be to find ways to ease the transition to a new school, postpone the transition to high school, or eliminate the transition altogether. If poor preparation for high school explains getting off track, then policy should be focused on improving instruction in the elementary and middle grades and providing academic catch-up opportunities for students who enter high school without the necessary skills. Or if large, anonymous high

schools are the real problem, the policy focus should be on imagining new ways of organizing high school.

Each of the four theories relies on correlational evidence, rather than on data from experiments that were designed intentionally to gather evidence for and against these explanations. It is difficult, therefore, to disentangle the factors that contribute to ninth graders' getting off track or to assess the specific impact of each. However, the strongest evidence points to students' inadequate preparation for high school and high school organization as primary sources of getting off track in ninth grade. As a result, efforts to keep students on track once they get to ninth grade have tended to address high school organization, with or without a focus on instructional quality or helping students to catch up on academic skills they need to succeed. Further, the school reform models that have been most rigorously evaluated—and therefore provide the best evidence of effectiveness—have also been based on the notion that traditional high school organization requires some redesign.

Rigorously evaluating the effects of school reform models on ninth-grade outcomes is no mean feat. Although the ideal research design would involve dividing a group of schools that were interested in implementing the model into two groups—those who are randomly assigned to implement and those who are randomly assigned not to implement—this design can be difficult to put into practice. It is a major undertaking to build consensus in a high school faculty to engage in comprehensive school reform that may usher in major change in roles, relationships, curriculum, the use of time, and school organization. When model developers encounter a school that shows such a commitment, they are inclined

to implement the model rather than assign the school to “control group” status. Second, evaluators are often brought into the process after the model has been implemented for some time already, making it too late to randomly assign schools to one condition or another. Next to random-assignment studies, one of the methods that provides the most credible evidence is interrupted time-series designs, which compare the trajectories of model schools and a set of similar schools in the same district before and after the intervention. The most rigorously evaluated analyses of comprehensive school reform that have not used random assignment have employed an interrupted time-series design.

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*The Talent Development High School model places an explicit focus on keeping students on track in ninth grade and allowing them to catch up on the academic skills needed for success in high school.*

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**Comprehensive School Reform Models**  
Many high school reform models have been designed for high schools at which ninth graders traditionally have struggled. Only some of these models, however, have been evaluated using rigorous methods, and of these, not all have reported results that are explicitly for the ninth grade. I present evidence about two school reform models, Project Transition and Talent Development High Schools, from evaluations that

specifically provided data on the effects of high school reform programs on ninth-grade outcomes. It is important to keep in mind that school reform models are typically multifaceted, involving many different features intended to create a personalized and orderly school environment or an engaging and appropriate curriculum, or both. In other words, comprehensive efforts to re-make the experience of ninth graders occur as packages of interventions. Therefore, research evidence on the effectiveness of these interventions speaks to the intervention as a whole, not to the effect of any specific feature.

The Project Transition demonstration project focused on improving the experience of ninth graders at two high schools. Pulaski High School in Milwaukee participated for two school years (1995–96 and 1996–97); Schlagle High School in Kansas City, Kansas, for a single year (1996–97). Both high schools enrolled high shares of low-income students, and many of their students recently had experienced academic difficulty during the ninth grade. One of the project’s key levers for change in student outcomes was a more personalized school environment for teachers and students. To this end, ninth-grade teachers and students were placed on interdisciplinary teams of four core subject teachers and approximately 120 students. In addition, teachers had daily common planning time and a coach whose role was to facilitate teacher meetings, coordinate professional development, and provide constructive feedback on lessons that teachers offered. The coach did not have a discipline-specific role (for example, adolescent literacy or mathematics), and no new curriculum was implemented other than what may have been developed by the teachers as they worked together during the year.

The research design for the evaluation of Project Transition included no comparison high schools. The lack of a comparison school is a significant weakness, because any improvements that were observed could have been a reflection of broader improvements in the district as a whole, rather than of the project itself. Instead, the study compared outcomes from the project implementation year and outcomes from the previous year's cohort of ninth graders. Although it is worth noting the evidence regarding this project, because it focused on ninth grade specifically, it is also important to be aware that findings of any positive effects of the program are not based on the strongest research design.

Project Transition was better implemented at one of the high schools (Schlagle) than at the other (Pulaski). Both schools were able to make the structural changes (teams of teachers with common planning time) called for by the project's designers. However, at Pulaski, teachers never entirely accepted the classroom coach or came to a consensus about the coach's role in the project. At Schlagle, on the other hand, the coach played a more vital role in developing teachers' expertise in new instructional techniques, including interdisciplinary teaching and cooperative learning.

Students at both Pulaski and Schlagle who experienced Project Transition were more likely than the previous year's ninth graders (the comparison group) to report that they knew and felt supported by their classmates. However, it was only at Schlagle that modestly higher shares of Project Transition students than comparison students had average GPAs of 2.0 or above, passed more courses, and reported that their teachers knew them and cared about them and that they liked being with their teachers. For students at Pulaski, there were no statistically significant

differences in GPA, course passage, or relationships with teachers.<sup>45</sup>

Although feelings of connectedness with other people are important in their own right, the primary purpose of the project was to improve academic outcomes in ninth grade. The Project Transition findings provide some suggestive clues that organizational changes are insufficient, in and of themselves, to make a difference in student outcomes. Only at Schlagle, which had a collaborative instructional focus in addition to a more personalized school environment, did students earn higher GPAs and more course credits. More rigorous evaluations of subsequent high school programs, described below, also highlight the importance of having an instructional focus accompany more "structural" reforms such as interdisciplinary teams.

The Talent Development High School model is a comprehensive school reform model developed by the Center for Research on Students Placed at Risk, based at Johns Hopkins University, and Howard University. The model places an explicit focus on keeping students on track in ninth grade and allowing them to catch up on the academic skills needed for success in high school. Key features of the model include personalized school environments (including schools-within-a-school and interdisciplinary teams of teachers), curricula specifically designed to help students "backfill" on skills they are lacking and a course schedule to accommodate those curricula, and professional development for teachers.

With the aim of creating a more personalized environment, the model places freshmen in a Ninth Grade Success Academy staffed by several interdisciplinary teams of teachers who instruct the same groups of students and

have daily common planning time. The academy, located in a physically separate area of the high school building, provides a sense of greater security and community by limiting the number of students who enter its hallways. In addition, ninth-grade teachers' close proximity to each other is intended to facilitate communication and problem-solving. In some schools, students who are creating disruptions in the classroom are assigned to an afternoon "Twilight School" until their behavior improves, and those who are not promoted to tenth grade at the end of their first year in high school are placed in a Ninth Grade Repeater Academy with the goal of promoting them to tenth grade by mid-year.<sup>46</sup> Students in the upper grades are placed into thematic academies based on their preferences at the end of ninth grade. Each academy has a principal to coordinate and direct its efforts.

Talent Development schools use the "four by four" block rostering schedule, in which students take four full courses during each semester and potentially can earn eight credits during the school year. Classes meet daily, and each class period is approximately ninety minutes long. To catch up on academic skills, ninth graders take the equivalent of two courses in English and two in mathematics during the year. During the first semester, they take Transition to Advanced Mathematics, a course designed to increase their fluency with rational and signed numbers, hone mathematical reasoning skills, and boost confidence in themselves as math learners. First-semester freshmen also take Talent Development's Strategic Reading course, intended to increase reading comprehension skills, and a freshman seminar that teaches study skills and personal organizational strategies for high school success. These three curricula include specific lesson plans, student materials, teacher manuals, and

manipulatives, thereby requiring teachers to do minimal, if any, development of course materials. English I and Algebra I follow during the second semester of ninth grade.

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*Despite noteworthy gains in attendance and credit accumulation during ninth grade, many ninth graders at Talent Development schools still had poor attendance and were not promoted on time to tenth grade.*

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The third key part of the Talent Development model is professional development for teachers who are assigned to the three freshmen courses described above. At the beginning of the school year, teachers participate in several days of training in the curriculum and associated instructional strategies. Throughout the year, teachers receive intensive support from classroom coaches, who preview upcoming curriculum units, provide feedback on lessons that they observe, model key instructional strategies, and research additional instructional materials.

Using an interrupted time-series design, an evaluation of Talent Development High Schools compared outcomes for Talent Development students in Philadelphia with outcomes for students at comparison high schools in the district that were initially similar in demographics and achievement. All of the Talent Development and the comparison schools were neighborhood high schools characterized by low achievement, and all

were either majority African American or Latino. The study found that Talent Development ninth graders' attendance, total credits earned, credits earned in algebra, and on-time promotion to tenth grade exceeded those of ninth graders at the comparison schools. On average, ninth graders at Talent Development schools attended school for about nine days more per year than comparison ninth graders and earned 0.67 more credits. Talent Development ninth graders also out-earned comparison students in algebra credits by 25 percentage points and by 8 percentage points in on-time promotion to tenth grade. The Talent Development students' advantage in on-time promotion after their first year of high school continued through to their third year of high school (the final year of evaluation data); Talent Development students led comparison students in being on-time eleventh graders by 6.5 percentage points.<sup>47</sup>

The fact that the on-time promotion gains persisted into the students' third year of high school suggests that providing a supportive school environment for ninth graders is not simply an exercise in postponing their inevitable difficulty in high school—at least as long as there is a whole-school commitment to shepherding students to graduation. When Talent Development students were promoted to tenth grade and left the Ninth Grade Success Academy, they were taken into another school-within-a-school that attempted to continue the personalized environment to which the students had become accustomed.

At the same time, it is likely that an improved promotion rate among ninth graders will result in a group of tenth graders who have weaker academic skills than prior cohorts of tenth graders. To some degree, these higher promotion rates suggest that tenth-grade teachers (and, indeed, eleventh- and twelfth-

grade teachers) may need new strategies and tools for working with students. Rather than create small learning communities that included students in grade ten through twelve, some of the Talent Development schools developed tenth-grade academies that mirrored the ninth-grade academies in teacher teaming and double-dosing in mathematics and in English.

Despite noteworthy gains in attendance and credit accumulation during ninth grade, many ninth graders at Talent Development schools still had poor attendance and were not promoted on time to tenth grade. On average, ninth graders in Talent Development schools attended less than 80 percent of the time, and, in the one cohort for which several years of data were available, just over 50 percent of the ninth graders were promoted to eleventh grade on time. These sobering data underscore that an exclusive focus on ninth graders is likely to be insufficient to improve educational outcomes in high schools.

### **Studies of Curricula for Ninth Graders Who Need to Catch Up Academically**

As evidence has begun to accumulate that many struggling ninth graders need to make catch-up gains in mathematics and reading skills, a number of new curricula for freshmen with below-grade-level skills have been developed. Some of these curricula have been created in conjunction with comprehensive school reform programs, as in the case of the Transition to Advanced Mathematics and Strategic Reading courses described above. In many cases, the curricula are intended as a supplement to existing courses in mathematics or English. The goal of the curricula is to accelerate learning gains for students so that they can take a traditional college preparatory course sequence before they graduate from high school.

The next step, which is just beginning to be taken, is to conduct rigorous evaluations of the effect of these curricula on the development of student skills. The first large-scale evaluation of two supplemental reading programs for ninth graders focused on the effects of Reading Apprenticeship Academic Literacy (developed by WestEd) and Xtreme Reading (developed by the University of Kansas Center for Research on Learning). Both courses are designed as year-long ninth-grade electives that supplement an English course, and both seek to provide experiences that increase students' reading fluency, vocabulary, writing, and ability to extract meaning from text across the academic content areas.<sup>48</sup> Teachers of the Reading Apprenticeship or Xtreme Reading program receive curriculum materials and professional development.

The ongoing evaluation of these reading programs, which randomly assigns students to experience one of the curricula or neither curriculum, is taking place in ten school districts and thirty-four high schools. Class sizes range from ten to fifteen students. First-year results from the evaluation indicate that students enrolled in Reading Apprenticeship and Xtreme Reading made greater gains in reading comprehension on a standardized assessment than those not enrolled in these programs. While statistically significant, the gain during this first year of implementation was small: less than one standard scale point. There was no statistically significant difference in students' vocabulary knowledge. The evaluation will continue to assess the learning gains of future cohorts of ninth graders. The additional data will be informative because logistical hurdles during the program's first year delayed the start of some courses until ten weeks into the school year and because teachers' proficiency in teaching strategic

reading skills may increase in the program's second and third year.<sup>49</sup>

In mathematics, there is suggestive evidence that catch-up courses may help to accelerate ninth graders' learning. The evidence arises from small-scale studies and awaits more extensive and rigorous evaluation. A small-scale randomized study that compared learning gains for students enrolled in Talent Development's Transition to Advanced Mathematics course with gains of students in the school's traditional math sequence for ninth graders found that students in the Transition course significantly and substantially out-gained those in the control course.<sup>50</sup> A national randomized study of the effectiveness of the Transition to Advanced Mathematics is under way. Cognitive Tutor, a mathematics curriculum that does not specifically target struggling ninth graders but may be effective for them because of its individualized instructional software component, is also being evaluated in randomized trials.

It is worth noting that although there is early evidence that these curricula can help ninth graders with weak academic skills to make faster gains, it is very unlikely that a single catch-up course in ninth grade will allow students to complete a rigorous high school course sequence without additional academic support. For example, although enrollment in the supplemental freshman reading courses described above is associated with greater learning gains, students in the reading courses nevertheless scored at the 25th percentile, on average, at the end of ninth grade. Some schools have found that they need to continue to "double-dose" students, especially in mathematics. The Talent Development High School model offers catch-up courses in geometry foundations



and Algebra II foundations and a second-year supplemental course in reading and writing.

## **The District Role in Keeping Ninth Graders On Track**

Although much of the hard, everyday work of keeping ninth graders on track needs to be done at the school level, school districts also have played a role. They have tried to address the challenge of the ninth grade in two main ways. First, they have created data systems and indicators to assess the share of off-track ninth graders at each school. And, second, they have developed and funded district-wide summer bridge programs for incoming freshmen. In addition, evaluations of comprehensive school reform programs with a focus on ninth graders suggest that there are benefits to high school reform of having district leadership that actively supports the reform with consistent year-to-year funding, appropriate and timely school staffing, minimal bureaucratic interference, and technical resources as necessary. It goes almost without saying that one of the most important things that school districts can do to support ninth-grade reform is to encourage interventions at the school level that have research support.

### **Data Systems and On-Track Indicators**

A notable example of district leadership in the use of data to shine a light on ninth-grade progress is the Chicago Public Schools, which has incorporated an on-track indicator for ninth graders into its school accountability system. The indicator draws on empirical research by the Consortium on Chicago School Research showing that first-time ninth graders in Chicago who are promoted to tenth grade on time and who do not receive any Fs for semester core courses are three and a half times more likely to graduate from high school than students who do not meet these criteria. As part of the district's High

School Scorecard, the share of students at each high school who are on track after ninth grade is reported publicly, along with other indicators of high school performance such as the share of students enrolled in Advanced Placement courses, average daily attendance, and student reports about the quality of their school (gathered from a district-wide student survey).<sup>51</sup> The Consortium on Chicago School Research reports that the on-track indicator contributed to an increase in the share of students who were on track at the end of ninth grade (48 percent in 1994–95, rising to 58 percent in 2003–04).<sup>52</sup> There is no evidence that these gains resulted from the indicator in and of itself, as opposed to other efforts to improve ninth grade outcomes; it would be a mistake to infer that simply putting in place an accountability indicator will transform the freshman experience in a district.

In addition to providing data about student performance after the fact—that is, after the school year is already over—some districts have developed tools that can provide real-time data to help school personnel identify and monitor students who appear to be getting off track. In Philadelphia, a pilot project in the middle grades provides teachers with regularly updated data on student attendance and course grades on the district's data interface. Teams of teachers use these data to decide collectively when students need more intensive interventions, including access to counselors and social workers.<sup>53</sup> This example also illustrates how school districts—far more than individual high schools themselves—can support efforts to prepare middle-grade students for high school.

### **Summer Transition Programs for Incoming Ninth Graders**

Many school districts also offer summer programs that are intended to increase students'

math or reading comprehension skills, teach study strategies, orient them to the layout of the school, and enable them to meet high school teachers and classmates. For example, the Step Up to High School program, offered by the Chicago Public Schools beginning in 2003, targeted students who scored between the 35th and 49th percentiles in reading or math on a nationally normed standardized test. Although these students would not have qualified for other kinds of academic supports offered by the district because their test scores were too high, the district's research showed that the students still had a high probability of performing poorly in ninth grade. The program was voluntary, and participating students attended classes five mornings a week for four weeks during the summer.

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*Districts increasingly are trying to mine their student databases for clues—attendance below a certain level, GPA, or course failure—that a student is on the path to dropping out of school.*

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Reports of successful summer bridge programs abound, often drawing on claims by principals of the success of their program or on data assembled by school districts that may or may not have used a comparison group.<sup>54</sup> However, it is exceedingly difficult to identify evaluations of summer bridge programs that use a random-assignment strategy to accept students into the program. The lack

of random assignment means that one cannot be confident about whether any observed differences between program attendees and non-attendees are the result of the program itself, as opposed to other student characteristics that may have an effect on eventual high school success but are difficult to measure. Students who attended the program may have had advantages—such as greater motivation, stronger family support, or less pressure to seek employment during the summer—over students who did not attend the program. Thus, although Chicago's internal district evaluation of the Step Up to High School program found that students who attended the program had significantly and substantially higher rates of being on track after ninth grade (60 percent for participants, 43 percent for students who were invited but did not participate), its lack of a randomized design makes it necessary to interpret the findings with great caution.<sup>55</sup>

Some districts also have developed one-day orientation programs for ninth graders or transition supports such as a “buddy system” in which freshmen are mentored by students in the upper grades. A small-scale study of a transition program that randomly assigned freshmen to be mentored by upper-grade students did not find any statistically significant effects, although the study was likely underpowered.<sup>56</sup> There is little research evidence that these kinds of transition supports, in and of themselves, are able to keep freshmen on track.

## **The State Role in Keeping Ninth Graders On Track**

States have several policy levers to use to improve high schools. One lever is the high school exit exam, which students must pass to earn their high school diploma. About half of the states require students to pass an

exit exam; most are located in the southern or southeastern part of the country. In most cases, the exams are given in tenth grade.<sup>57</sup> A contentious issue among researchers and policy makers is whether these exit exams raise high school dropout rates by providing an incentive for schools to push out lower-performing students who would bring down the school pass rate if they took the exam or by causing discouraged students who fail the exam to leave school on their own, or both. A corollary concern is that exit exams may increase the share of ninth graders intentionally retained in grade by their schools, who do not want lower-performing students to sit for the exam. Because repeating a grade increases the probability that a student will drop out,<sup>58</sup> intentionally holding back ninth graders could be a key mechanism by which exit exams increase dropout rates.

Using data from the CCD and a database of states' exit exam policies spanning the period 1977 to 2002, John Robert Warren and Amelia Corl found two important associations. First, net of a number of other state characteristics such as poverty, unemployment, racial or ethnic makeup, and number of Carnegie units required for graduation, ninth-grade retention rates were higher in states with exit exams that tested high school-level content and in states that gave an exit exam in tenth grade (as opposed to ninth or eleventh grade). Second, states with higher ninth-grade retention rates also had lower graduation rates.<sup>59</sup> A case study of a school district in Texas—a state with a high school exit exam in tenth grade with high-stakes consequences for both schools and students—highlighted how some schools “gamed” the state accountability system by retaining ninth graders. Some schools retained ninth graders who did not pass all of their core courses, thus ensuring that the tenth graders who took the

exit exam were a more select group of students and making it more likely that the school would have a high pass rate. At the end of the retained ninth graders' second year in high school, some would have made up their missing credits, and would be classified as eleventh graders—thereby skipping the testing grade. In other cases, retained students never would be promoted beyond ninth grade. The many ways to game the dropout statistics in Texas meant that schools were less concerned about accountability consequences for having many students drop out than about the consequences for having them perform poorly on the exit exam.<sup>60</sup>

The findings from these two research studies do not necessarily argue against the value of high school exit exam requirements. But they do suggest that one thing that state policy makers should do to support ninth graders is to examine the potential unintended consequences of their accountability plans.

States also may have a role to play in developing statewide data systems with student information, helping districts to develop their own capacity to maintain and analyze data about ninth graders, and providing support for districts to develop empirically based “early warning indicator systems.” Statewide data systems, such as those maintained by Florida, North Carolina, or Texas, provide the necessary infrastructure for state departments of education to identify districts where high proportions of ninth graders get off track so that they can be targeted for assistance. Such data systems also allow states to locate districts that are doing better than expected by their ninth graders and to learn from practices that seem to be working.

Districts increasingly are trying to mine their student databases for clues—attendance

below a certain level, GPA, or course failure—that a student is on the path to dropping out of school. As described above, these indicators have been developed for freshmen (the on-track indicator in Chicago) and for students in the middle grades (Philadelphia). However, even if school districts have the data needed to conduct this sort of empirical work, they often do not have the capacity to complete a customized analysis for their own district. Smaller districts without dedicated research staff are especially likely to lack such a capacity. State departments of education could assist these districts by providing technical assistance in data analysis, creating venues for districts that have made strides in developing early indicators to share their analytic process and findings, and testing the feasibility of a statewide set of early indicators.

## Concluding Thoughts

In the past several years, new data analyses have shown that the high school graduation rate in the United States is likely between 70 percent and 80 percent.<sup>61</sup> As the article by John Tyler and Magnus Lofstrom in this volume demonstrates, there is good research evidence that students who drop out of school earn less on average than high school

graduates, have a high probability of experiencing long stretches of unemployment, participate less in civic life, and are more likely to be incarcerated. The sobering life consequences of high school dropout lend additional urgency to the task of creating the conditions so that more ninth graders stay on track to graduation during their first year in high school.

In a broad sense, the task of helping ninth graders to succeed requires the serious efforts of educators at the pre-K through eighth-grade level to prepare students for the academic requirements of ninth grade; it also requires the involvement of parents in the supervision and support of their children. But, ultimately, it is high schools that bear the most immediate responsibility for putting in place the curriculum, school organizational features, and strong teachers who will increase a ninth grader's chances of making a good transition to high school. There is much to be learned about how to help students succeed when they enter high school, but already there are school reform models and curriculum that—while not silver bullets—show evidence of promise.

## Endnotes

1. An additional 5 percent attend a junior high school or middle school for ninth grade and make the transition to high school as tenth graders. The rest of the students attend schools that span the middle and high school years or are K–12 schools. Data are from the Common Core of Data, 2005–06 school year.
2. For example, of the forty states with statewide minimum high school graduation requirements, thirty-six require four years of high school English. A reasonable inference from this fact is that students are expected to take English—and earn English credits—each year from ninth grade through twelfth grade. See Jennifer Dounay, *Alignment of High School Graduation Requirements and State-Set College Admissions Requirements* (Denver, Colo.: Education Commission of the States, 2006).
3. Kathryn Schiller, “Effects of Feeder Patterns on Students’ Transitions to High School,” *Sociology of Education* 72, no. 4 (1999): 216–33.
4. C. Jay Hertzog and P. Lena Morgan, “Breaking the Barriers between Middle School and High School: Developing a Transition Team for Student Success,” *NASSP Bulletin* 82, no. 597 (1998): 94–98; Patrick Akos and John Galassi, “Middle and High School Transitions as Viewed by Students, Parents, and Teachers,” *Professional School Counseling* 7, no. 4 (2004): 212–21; Kristen Isakson and Patricia Jarvis, “The Adjustment of Adolescents during the Transition into High School: A Short-Term Longitudinal Study,” *Journal of Youth and Adolescence* 28, no. 1 (1999): 1–26.
5. Schiller, “Effects of Feeder Patterns” (see note 3); James Catterall, “Risk and Resilience in Student Transitions to High School,” *American Journal of Education* 106, no. 2 (1998): 302–33; David Kinney, “From Nerds to Normals: The Recovery of Identity among Adolescents from Middle School to High School,” *Sociology of Education* 66, no. 1 (1993): 21–40.
6. Elaine Allensworth and John Easton, *The On-Track Indicator as a Predictor of High School Graduation* (Chicago: Consortium on Chicago School Research, 2005). Allensworth and Easton were the first to use the “on-track/off-track” nomenclature to describe students’ progress toward graduation—terms that have now entered common parlance among dropout researchers, policy makers, and advocates.
7. Melissa Roderick and Eric Camburn, “Risk and Recovery from Course Failure in the Early Years of High School,” *American Educational Research Journal* 36, no. 2 (1999); Allensworth and Easton, *The On-Track Indicator as a Predictor of High School Graduation* (see note 6); Ruth Curran Neild and Robert Balfanz, *Unfulfilled Promise: The Causes and Consequences of High School Dropout in Philadelphia, 2000–2005* (Philadelphia: The Philadelphia Youth Network, 2006).
8. Editorial Projects in Education, “The Freshman Blues,” *Diplomas Count* 25, no. 41S (2006): 16.
9. More sophisticated, empirically derived indicators of being off track for graduation have been developed in specific locales. For example, Allensworth and Easton define students as off track after their first year in high school if they have accumulated fewer than five course credits or earned an F in a core academic course during either semester. See Allensworth and Easton, *The On-Track Indicator as a Predictor of High School Graduation* (see note 6).
10. Students who have been enrolled as ninth graders for more than one year because of failure to accumulate credits for promotion to tenth grade are sometimes referred to as “ninth grade repeaters.”

11. Chicago Public Schools, *Chicago Public Schools Policy Manual*, <http://policy.cps.k12.il.us/documents/605.1.pdf>; *Miami-Dade E-Handbook*, <http://ehandbooks.dadeschools.net/policies/93/secIV.pdf>; District of Columbia Public Schools graduation requirements can be found at [www.k12.dc.us/offices/ocao/Graduation-Requirements-2007.pdf](http://www.k12.dc.us/offices/ocao/Graduation-Requirements-2007.pdf).
12. Allensworth and Easton, *The On-Track Indicator as a Predictor of High School Graduation* (see note 6).
13. Ruth Curran Neild, Scott Stoner-Eby, and Frank Furstenberg, "Connecting Entrance and Departure: The Transition to Ninth Grade and High School Dropout," *Education and Urban Society* 40, no. 5 (2008): 543–69.
14. Neild and Balfanz, *Unfulfilled Promise* (see note 7).
15. New York City Department of Education, Office of Multiple Pathways to Graduation, *Multiple Pathways Research and Development: Summary Findings and Strategic Solutions for Overage, Undercredited Youth*, <http://schools.nyc.gov/NR/rdonlyres/119CD965-BC52-4579-A37A-5E33C1364D2A/31611/FindingsoftheOfficeofMultiplePathwaystoGraduation.pdf>.
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17. Walt Haney and others, *The Education Pipeline in the United States: 1970–2000* (Chestnut Hill, Mass.: Center for the Study of Testing, Evaluation, and Education Policy, 2004).
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19. Ibid.
20. Ibid.
21. Schiller, "Effects of Feeder Patterns" (see note 3); Toni Falbo, Laura Lein, and Nicole Amador, "Parental Involvement during the Transition to High School," *Journal of Adolescent Research* 16, no. 5 (2001): 511–29.
22. Bradford Brown and others, "Parenting Practices and Peer Group Affiliation in Adolescence," *Child Development* 64, no. 2 (1993): 467–82.
23. Christopher Weiss and Peter Bearman, "Fresh Starts: Reinvestigating the Effects of the Transition to High School on Student Outcomes," *American Journal of Education* 113, no. 3 (2007): 395–421.
24. Robert Felner and Angela Adan, "The School Transitional Environment Project: An Ecological Intervention and Evaluation," in *14 Ounces of Prevention: A Casebook for Practitioners*, edited by Richard Price and others (Washington: American Psychological Association, 1988), pp. 111–22.
25. Schiller, "Effect of Feeder Patterns" (see note 3).
26. Weiss and Bearman, "Fresh Starts" (see note 23).
27. Neild and Balfanz, *Unfulfilled Promise* (see note 7).
28. Robert Balfanz, Liza Herzog, and Douglas MacIver, "Preventing Student Disengagement and Keeping Students on the Graduation Track in High-Poverty Middle-Grades Schools: Early Identification and Effective Interventions," *Educational Psychologist* 42, no. 4 (2007): 223–36.

29. Ruth Curran Neild and Robert Balfanz, "An Extreme Degree of Difficulty: The Educational Demographics of Urban Neighborhood High Schools," *Journal of Education for Students Placed At Risk* 11, no. 2 (2006): 123–41.
30. Melissa Roderick and Eric Camburn, "Academic Difficulty during the High School Transition," in *Charting Reform in Chicago: The Students Speak* (Chicago: Consortium on Chicago School Research, 1996).
31. Balfanz, Herzog, and MacIver, "Preventing Student Disengagement and Keeping Students on the Graduation Track in High-Poverty Middle-Grades Schools" (see note 28); Neild and Balfanz, *Unfulfilled Promise* (see note 7).
32. National Mathematics Advisory Panel, *Foundations for Success: The Final Report of the National Mathematics Advisory Panel* (Washington: U.S. Department of Education, 2008).
33. Jeremy Kilpatrick, Jane Swafford, and Bradford Findell, *Adding It Up: Helping Children Learn Mathematics* (Washington: National Research Council, 2001).
34. National Reading Panel, *Teaching Children to Read* (Washington: National Institute of Child Health and Human Development, 2000); Ruth Schoenbach and others, *Reading for Understanding: A Guide to Improving Reading in Middle and High School Classrooms* (San Francisco: Jossey-Bass, 1999).
35. Michelle Fine, *Chartering Urban School Reform* (Teachers College Press, 1994); Valerie Lee and Julia Smith, *Restructuring High Schools for Equity and Excellence: What Works* (Teachers College Press, 1990); Nettie Legters and others, *Reforming Urban High Schools: A Talent Development Approach* (Teachers College Press, 2002).
36. Roderick and Camburn, "Academic Difficulty during the High School Transition" (see note 30).
37. Neild and Balfanz, *Unfulfilled Promise* (see note 7).
38. Roderick and Camburn, "Academic Difficulty during the High School Transition" (see note 30).
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46. Legters and others, *Reforming Urban High Schools* (see note 35).
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48. Schoenbach and others, *Reading for Understanding* (see note 34).
49. James Kemple and others, *The Enhanced Reading Opportunities Study: Early Impact and Implementation Findings* (New York: MDRC, 2008).
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53. Balfanz, Herzog, and MacIver, "Preventing Student Disengagement and Keeping Students on the Graduation Track in High-Poverty Middle-Grades Schools" (see note 28).
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