Edvance Research Testimony on SB 518: What the Research Says

Good Morning, my name is Kathleen Barfield and I am an Executive Vice President at Edvance Research, located in San Antonio, Texas. We serve as the regional education laboratory for the southwest, and conduct a variety of research and policy studies related to key problems of education practice. We also work to assist state and local education agencies make use of their data to understand educational challenges and address them with research-based interventions. I am here today to share with you research on middle schools that is supportive of the policies contained Senate Bill 518.

Early Warning Indicators

- **Students begin dropping out in 6th grade.** Many students who drop out of high school send strong distress signals for years. These students are metaphorically waving their hands and asking for help.

- **ABC's of Dropping Out.** Much of the research on effective early warning indicators of students dropping out of school has been done at John Hopkins University, under the leadership of Dr. Robert Balfanz and Dr. Ruth Neild. These researchers have tried to determine how soon in a child's educational career distress signals appear that should raise a red flag about student success, so that schools and districts can take action to keep students in school. These early warning indicators are called the "abc's of dropping out" because they include Academics, Behavior, and Course Failures. Other researchers have included state test scores on the list, as well. These are called "actionable indicators" because educators can address each of them by applying the right type of interventions to remediate the student's performance.

- **Link to interventions.** By paying attention, using an early warning indicator system, schools and districts can apply interventions that can help keep potential dropouts in school.

- **Intervention Clearinghouse.** The challenge is to identify and implement interventions that are constructed to meet a child's needs. Edvance has established a database of research-based interventions and tagged each one with the relevant early warning indicators, so that educators can easily search for what they need and quickly them in place.

Teacher Content Knowledge

- **Effective Teachers are the Backbone of Reform**: There is a large body of research demonstrating that the backbone of middle school reform is effective teachers. Other elements of reform (curriculum, assessment, school climate, technology) are unlikely to succeed unless a school is staffed with good teachers.

What Research Says:

- **Experience.** Research has shown that one to two years teaching experience was positively associated with student achievement (Harris and Sass, 2007).
- **Committed and Motivated Teachers.** Case study research has shown that schools that are successful have staff that are committed and motivated to teach which is demonstrated by caring about students, being willing to do whatever is needed to meet the student achievement goals of the school, a collegial relationship with other professionals at the school working together towards these goals (Herman, et. al, 2008).
- **Advanced Degree and Math Achievement.** Using student achievement data for the entire state of Florida, researchers found that obtaining an advanced degree while teaching middle school math was positively associated with student achievement. (Harris and Sass, 2007).
- **Math Content Knowledge.** For math in the middle grades, teachers who know more math either through having obtained advanced degrees or having receiving content specific professional development in math are better at improving student achievement than teachers with less content knowledge.
- **Knowledge of Content and Teaching in Math**. According to a review of math and science PD programs (Kennedy, 1998), programs whose content focused mainly on teachers' behaviors demonstrated smaller influences on student learning than did program whose content focused on teachers' knowledge of the subject, on the curriculum, or on how students learn the subject.
- **Professional Development.** In a research study of professional development (Garet, Porter, Desimone, Birman, and Yoon, 2001), a national sample of teachers was surveyed by researchers who discovered that activities that are content focused, but do not increase the knowledge and skills of teachers result in a negative impact on teacher practice. Therefore, just providing teachers with content is not sufficient; the professional development must provide a deepening of the teachers' conceptual knowledge and skills in the subject(s) they teach.
- **Use of data to monitor and evaluate teacher progress.** This research draws on administrative data systems that have come online in the last decade in many states and school districts. These same systems can be used to monitor and evaluate teacher progress towards student achievement goals.

Parent Orientation

- **Involvement.** Parent and community involvement is critical to the success of schools today (Marzano, 2005). No longer can the school work in isolation.
- **Parent Outreach Programs.** Parent outreach programs are an effective means to engage parents in school programs
- **Communication.** Establish communication strategies to share and publicize relevant school data and respond rapidly to requests for data.
- **Clear Message.** In early adolescence students need to hear a combined and consistent message from school and home that it is important that they attend, behave, and try and if they do there is a clear and understandable pathway to adult success through achievement in school.
- **Celebration.** Recognize, celebrate and reward the contributions of community members who contribute to the realization of school goals.

What Research Says:

- **Parent Outreach Programs.** Research using extant data indicates that developing parent outreach programs are an effective means to engage parents in school programs, increase interest in their child's learning and achievement, and contribute to improvements in learning (Murphy, et al. , 2007) when they include activities that

  - encourage and help parents learn about the instructional and curricular program at the school
  - assist parents in working more productively with their children at home on the goals of the school
  - assist parents in extending their own parenting skills.

- **Collectively Work Towards Success.** Student success is greatest when teachers, students, and parents are collectively working together to enable student success (Balfanz, 2007; Goodwin; 2010).
- **Intervention Committee.** Research supports the design of an intervention committee (Goodwin, 2010) of teachers, administrators, parents, and community members that will a response team to address problems with attendance and behavior before they lead to bigger problems such as drop-outs. This team can monitor warning signs from classroom reports of tardies, absences, and office referrals and then assign members to targeted students to form personal relationships, recognize good behaviors, closely monitor, and problem solve. The community businesses can be engaged to report truant students to the school.
- **Communication Strategies.** It is important to establish communication strategies to share and publicize relevant school data and to respond rapidly to constituencies requests for data (Murphy & Hallinger, 1988; Murphy et al. ,2007) including

recognizing, celebrating and rewarding the contributions of community members who contribute the realization of school goals.

Instruction in Writing

- **Writing as a tool.** To be an effective writer in middle schools, students need to view writing as a tool to support learning in all content areas.
- **Writing Improves Learning.** Writing about material presented in content classrooms as well as writing about material read improves learning and understanding (Graham & Hebert, 2010; Graham & Perrin, 2007).
  - o Provides opportunities to think about ideas
  - o Requires students to organize and integrate these ideas into a coherent whole
  - o Fosters explicitness
  - o Facilitates reflection
  - o Encourages personal involvement with the to be learned ideas
  - o Involves students transforming ideas into their own words.
- **School-wide Goal.** To ensure that writing to learn occurs in all content areas, it needs to be a school-wide goal.

What Research Says:

- **Monitor and assess student writing progress.** When teachers assess or monitor students' writing progress, it has a positive impact on students' overall progress as writers (Graham, Harris, & Hebert, in press). This includes weekly assessing students' classroom writing in terms of ideas, organization, voice, word choice, sentence fluency, and usage/conventions as well more formal and standardized writing measures. Data provide teachers with information on the effectiveness of instruction and a mechanism for identifying students who need intensive assistance and instruction.
- **Analyzing Models.** Research suggests that the use of models and having students analyze models is an effective strategy for providing middle school students with illustrations of genre-specific features, such as the essential elements of a persuasive argument, as well as for developing their awareness of more general aspects of good writing, such as word choice and sentence construction (Ferretti, MacAurthur, & Dowdy, 2000; Page-Voth & Graham, 1999).
- **Common and Individual Goals.** Research suggests that goals are most effective when they are specific and at level of difficulty that is challenging, yet attainable (Harris, Graham, Mason & Friedlander, 2010). Use a combination of common goals (i.e., apply to all students in the class) and individualized goals (i.e., selected based on each student's strengths and needs).
- **Self-Regulated Strategy Development (SRSD).** A substantial body of empirical research shows that one particular strategies instruction model, Self-Regulated Strategy

Development (SRSD; Harris & Graham, 1996; Graham & Harris, 2005; Harris, Graham, Mason & Friedlander, 2008), is particularly effective with diverse populations of students, including those who are in middle-school (Graham & Perrin, 2007; Rogers & Graham, 2008).

- o SRSD uses explicit and systematic instruction to help students learn strategies for planning, drafting, and revising text, as well as strategies for accomplishing specific writing tasks.
- o Students learn to use self-regulation procedures to manage the writing process (e.g., goal setting, self-monitoring, self-instruction, and self-reinforcement).
- o Other noteworthy characteristics of SRSD include: individualized instruction, criterion- rather than time-based learning, authentic writing tasks, a positive classroom environment, and collaboration among teachers and students.

- **Writing Interventions.** Students who are experiencing difficulties learning to write often need extra instruction in how to use these tools effectively (Berkowitz, 1986). Writing tools such as note taking, summarizing, and analyzing/interpreting may need to be taught through a gradual release model where the technique is described, modeled (possibly repeatedly), and practiced on real learning tasks with assistance and feedback from the teachers until students can apply them successfully and independently.

- **Ineffective writing approaches.** Research has shown the following to be ineffective (Graham, S., MacArthur, C. A., & Fitzgerald, J., 2007) instructional approaches that should be discontinued: defining and practicing a grammar skill in a decontextualized manner (e.g., selecting the right tense for a verb in a sentence from three options) or practices such as sentence diagramming (Graham & Perin, 2007). There are, evidence-based practices for improving students' grammar in writing, such as the sentence combining procedure.

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An Early Warning System

By promptly reacting to student distress signals, schools can redirect potential dropouts onto the path to graduation.

Ruth Curran Neild, Robert Balfanz, and Liza Herzog

The alarm has sounded. The United States has a high school graduation crisis. The crisis does not stem, however, from any precipitous drop in the percentage of students who graduate. In fact, graduation rates are about as high as they have ever been. What makes current graduation rates alarming is a reality of the new U.S. economy: It is practically impossible for individuals lacking a high school diploma to earn a living or participate meaningfully in civic life. Adding to the urgency is evidence of disproportionately low graduation rates among low-income and minority youth. Recent estimates suggest that between one-third and one-half of minorities do not earn a high school diploma (Education Week, 2007).

Policymakers and educators have tended to view dropping out of high school in two contradictory ways. On the one hand, they view it as predictable, given the high dropout rates in certain demographic categories and geographic locations. At the same time, they view the experiences that precede a specific student's dropping out as mysterious, difficult to predict, and idiosyncratic. Some students unaccountably "become bored with school"; "fall in with the wrong crowd"; or experience a jarring life event, such as a pregnancy or a parent's unemployment, that precipitates their dropping out of school.

Our research suggests that, on the contrary, many students who drop out of high school send strong distress signals for years. These students are metaphorically waving their hands and asking for help. By paying attention, schools and districts can develop interventions that can help keep potential dropouts on track to graduation.

Policymakers and educators face several challenges in devising these early intervention strategies. The first is to figure out which signals to look for and when to look for them. These signals form an early warning system that schools can use to identify students who are at risk of dropping out. The second challenge is to develop a set of structures and practices within schools that enable educators to review data and pinpoint those students who are sending signals. The third challenge is to determine the help that students need, on the basis of the signals they send and their responses to previous interventions.

Early Indicators

During the past 25 years, a great deal of research has focused on why students

drop out. This research typically uses data from complex surveys or in-depth interviews with students, none of which are commonly available to schools and school districts. We wondered whether the ordinary data that school districts keep in student records could operate as a crystal ball of sorts to predict which students might drop out.

We began our research in Philadelphia, using data on several cohorts of students that became available to us when we established a number of Talent Development High Schools and Middle Grades Programs in the city. Johns Hopkins developed these school models, and the Philadelphia Education Fund was the local reform partner. Schools implementing the Talent Development model were located in areas with low graduation rates.

The school district data that we examined included test scores, report card grades, behavior marks, attendance records, special education status, English language learner status, and demographic categories. We identified the following indicators using Philadel-

The earlier a student first sends a signal, the greater the risk that he or she will drop out of school.

phia data. However, we have been able to replicate them with slight modifications in other cities, such as Boston and Indianapolis.

Signals in the Middle Grades

A high percentage of dropouts send distress signals in the middle grades, long before they actually drop out of school. We followed an entire cohort of students in Philadelphia who entered the 6th grade in September 1996— approximately 14,000 students—to determine their dropout status six years later. Then, going back to the 6th grade

data, we looked for any signals—a poor course grade, a low test score—that would give students *at least* a 75 percent probability of dropping out of high school. We chose the 75 percent threshold because it enables schools and districts to focus their scarce resources on students who are at high risk of dropping out.

In Philadelphia, we found that a 6th grader with even one of the following four signals had at least a three in four chance of dropping out of high school:

- A final grade of *F* in mathematics.
- A final grade of *F* in English.
- Attendance below 80 percent for the year.
- A final "unsatisfactory" behavior mark in at least one class.

Students with more than one signal— for example, failing mathematics *and* missing a lot of school—had an even higher probability of dropping out within six years. But we also found that some students sent just one signal, indicating that various factors can culminate in dropping out. Students with failing course grades may struggle with academic skills and motivation, those with inconsistent attendance may find little support for schooling at home, and those with poor behavior marks may have social and emotional challenges that require attention. The signals that have the greatest predictive power relate to student action or behavior in the classroom, rather than to a particular status, such as receiving special education services.

In a separate analysis, we looked at indicators for a cohort of 8th graders. For these students, too, a failing course

grade in mathematics or English or an attendance rate of less than 80 percent during the year were highly predictive of dropping out. In fact, more than 50 percent of the students who ultimately dropped out sent one or more of these signals during 8th grade, meaning that more than half of the dropouts in the cohort could have been identified even before they entered high school.

Although all distress signals should be taken seriously in the middle grades, schools should pay special attention to students who send a signal in 6th grade. The earlier a student first sends a signal, the greater the risk that he or she will drop out of school.

Signals in High School

Ninth grade is a treacherous year for students, particularly those in large urban districts. Even students who were doing moderately well in the middle grades can be knocked off the path to graduation by the new academic demands and social pressures of high school. Among students who sent their first serious distress signal in 9th grade, those who earned fewer than two credits or attended school less than 70 percent of the time had at least a 75 percent chance of dropping out of school. Most of these students did not drop out immediately but attempted 9th grade courses for another one or two years before finally giving up on school altogether.

Eighty percent of the dropouts we studied in Philadelphia had sent a signal in the middle grades or during the first year of high school. The majority of U.S. high school dropouts are enrolled in such large urban districts (Balfanz & Legters, 2004). Consequently, an effective early warning system could identify—at least by 9th grade—the vast majority of future dropouts nationwide.
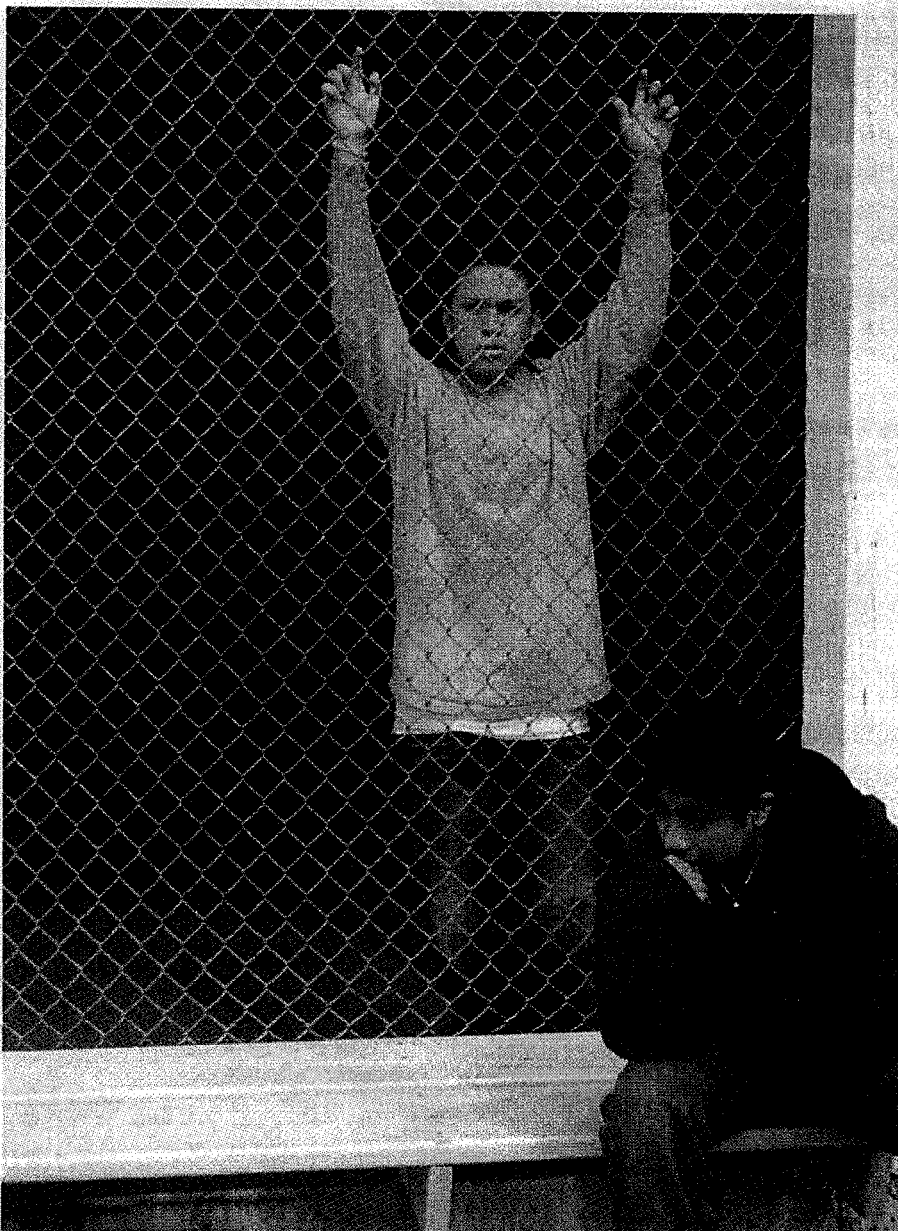
What Can Schools Do?

Our experience with urban middle schools and high schools suggests that several strategies can help keep students on the path to graduation.

Intervening in the Middle Grades

Philadelphia is currently piloting a middle grades program—Keeping Middle Grades Students on the Graduation Path—that seeks to develop tools and practices for responding to early indicators that signal potential dropouts. Developed through the joint efforts of the School District of Philadelphia, the Philadelphia Education Fund, and the Johns Hopkins University Center for the Social Organization of Schools, the program is based on two fundamental assumptions: (1) that students' signals

are surface indicators of deeper academic problems, behavioral issues, or responses to the home or school environment that schools need to identify and address; and (2) that only a small percentage of students will need the most intensive and costly interventions. For the majority of students, lower-cost schoolwide strategies that seek to prevent the problems will suffice.

Schools can identify strategies for addressing each signal—such as course failure, poor attendance, and behavior issues—using a three-tiered school-

dance program might sign an attendance contract or attend a conference at school with family members; the student may then receive a brief daily check-in from a school staff member. This adult might acknowledge that the student is in school and mention that he or she looks forward to seeing the student the next day and will call home if the student does not show up.

Finally, the third tier of *intensive interventions* is reserved for the 5–10 percent of students who need small-group or one-on-one supports. A student with severe attendance problems might be

program. Teachers can use this program to track individual students on a day-to-day basis so they can quickly identify students who need to move to a more intensive level of intervention. Likewise, they can reevaluate students who have responded to intensive interventions. This early indicator tracking tool has proved so useful that Philadelphia plans to make it available to other schools through the districtwide integrated data management system.

Keeping an Eye on 9th Graders

The best thing a high school can do to keep students on track to graduation is to develop a comprehensive set of strategies that includes attention to climate, curriculum, and credit accumulation. At a minimum, high schools need to set the conditions for 9th grade success by making sure that the curriculum and associated supports help fill gaps in mathematics and reading comprehension. Our work with schools in low-income areas across the United States indicates that the majority of students in these schools are two to three years below grade level when they start 9th grade. They need an age-appropriate curriculum that enables them to catch up on the intermediate skills that high school courses assume that students have.

These signals form an early warning system that schools can use to identify students who are at risk of dropping out.

based model for prevention and intervention. The top tier consists of effective *whole-school preventative measures*. In urban districts that struggle with high dropout rates, these whole-school measures can keep an estimated 70–80 percent of the students on track to graduation during the middle grades. For example, a school might institute a schoolwide attendance program that highlights the importance of attendance; tracks attendance daily at the classroom level; has an adult in the building respond to the first absence of each student; and provides weekly recognition and monthly social rewards (such as pizza parties or field trips) to students with perfect or near-perfect attendance.

The second tier of *targeted interventions* is aimed at the 10–20 percent of students who require additional focused supports. A student who continues to miss school despite a schoolwide atten-

assigned to a team of adults at the school (including, for example, a counselor, an assistant principal, and a teacher) who will work together to understand the source of the attendance problem and try to solve it. If the problem is too deep-rooted for the school alone to resolve, the team will arrange for the student and his or her family to receive appropriate social service supports.

Using the three-tiered model, schools in the pilot program take a hard look at what they are actually doing to address attendance, behavior, and academic performance. Our experience has shown us that schools are often doing far less in each of these areas than they think.

To help schools identify which students send signals and how they respond to interventions, we developed an on-demand, classroom-level data

At the same time, schools need to be organized so that they can flag students who are having difficulty early on. Data from urban districts (Roderick & Camburn, 1999) indicate that struggling 9th graders typically send their signals in the first or second marking period—or even during the first few weeks of school. The Talent Development High School model (see www.csos.jhu.edu /tdhs), developed by urban educators and Johns Hopkins researchers, organizes 9th grade teachers into four-person interdisciplinary teams. Each team
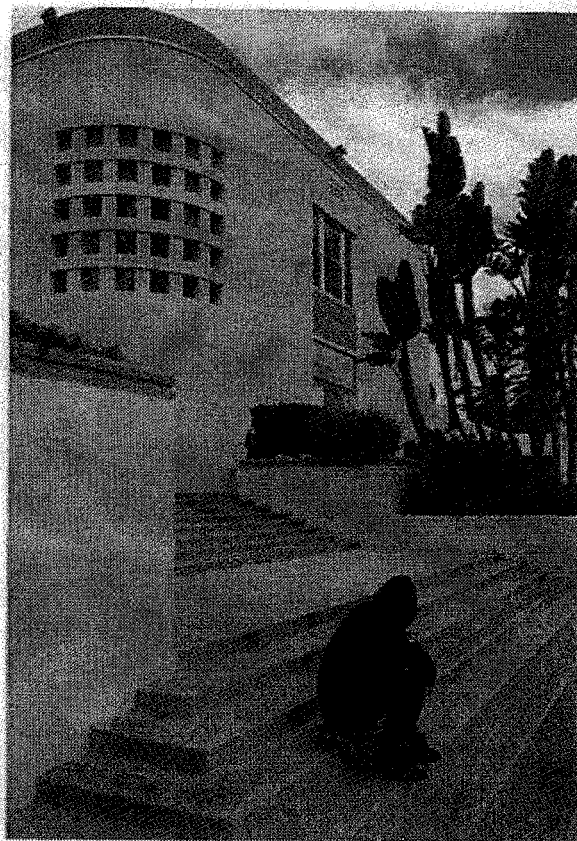
compares notes about its students' classroom performance and collaboratively decides on strategies for dealing with those who are having trouble.

Finally, schools need to make available to struggling or disengaged students various avenues through which they can experience short-term school success. These include such activities as debates, artistic and performance experiences, and service learning projects, with opportunities to participate linked to good attendance and course effort.

Reengaging Out-of-School Youth

Despite the best efforts of schools to keep students on the path to graduation, some students will always drop out. Some will try to return to school, but the traditional high school format may not serve them well because of their age, lack of credits, or personal responsibilities. In Philadelphia, a group of partners—including the school district, city agencies, nonprofit groups that advocate for children and public education, workforce development organizations, and research universities—has begun to collaborate on a multiple-pathways system that will enable out-of-school youth to earn their diplomas.

This collaboration, known as Project U-Turn (www.projectuturn.net) and led by the Philadelphia Youth Network, envisions a system that offers opportunities for students on the basis of their age, literacy and numeracy levels, and credits earned. By examining district data, the Project U-Turn partners learned that although the largest group of dropouts had earned fewer than eight credits despite being at least 17 years old, they had few opportunities to earn a diploma other than reenrolling in tradi-

tional high schools, which were hardly enthused about taking in older students with histories of failure. The partnership is currently working to design and fund new education options for these students. In addition, youth who have dropped out just shy of graduation need opportunities to fast-track their high school diplomas while earning credits from a community college.

The Price of Not Intervening

Data from large urban districts and our work with urban middle schools and high schools have shown us that, for the majority of students who drop out of high school, the major cause is *not* an unanticipated life event or disinterest in receiving a diploma, but rather school failure. Moreover, the vast majority of dropouts stay enrolled in school for an additional year or two after their first

experience of course failure. This continuing connection with school, however tenuous, suggests a window of time during which schools can redirect potential dropouts back onto the path to high school graduation.

It also tells us that what schools do matters. Growing numbers of high schools have beaten the odds and kept their students on the path to graduation. Good research-based and practice-validated interventions can improve student attendance, behavior, and effort; academic interventions can improve course performance more directly. The U.S. graduation rate crisis is not fueled by students who lack the potential or desire to graduate, but rather by secondary schools that are not organized to prevent students from falling off the path to graduation or to intervene when they do.

Finally, we need to recognize that some middle schools and high schools are overwhelmed by the number of potential dropouts who walk through their doors. Research shows that approximately 50 percent of the dropouts in the United States are produced by 15 percent of the high schools, all of which serve populations with high poverty rates (Balfanz & Legters, 2004). Further, most of these high schools have two or more feeder middle schools. Dropout rates for an entering cohort can top 50 percent, meaning that hundreds and sometimes thousands of students at each school are in need of comprehensive and sustained supports. These schools need to have in place strong prevention and intervention systems aimed at improving student attendance, behavior, effort, and course performance.

The need for strong programs has

significant implications for how we staff and fund the secondary schools that educate economically disadvantaged students. Implementing the whole-school reforms and multitiered prevention and intervention systems that these schools need requires financial and human resources equal to the task, along with high-quality technical assistance. High-poverty schools will also likely benefit from partnerships with external organizations skilled at delivering integrated student supports as well as with community organizations and national service organizations that can provide the necessary people power for mentoring and tutoring on a sufficient scale.

Without question, there are financial costs associated with intervening with students who are on the path to dropping out. But the price of not intervening—in terms of individual lives that do not reach their potential and the broader social costs of having a class of citizens who lack a basic academic credential—is incalculably greater. **EL**

The majority of students drop out of high school because of school failure.

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Freshman Watchlist[1] Report for ABC DISTRICT ISD – as of June 25, 2011
ABC HIGH SCHOOL

WATCHLIST REPORT SUMMARY

Total Students with Flags: 5 / 55.5%

By Indicator Flags:	N / %
Attendance Flag	2/22.2%
Academic Flag	4/44.4%
Discipline Flag	2/22.2%
TAKS Flag	3/33.3%

By # Flags:	N / %
One Flag	2/22.2%
Two Flags	1/11.1%
Three Flags	1/11.1%
Four Flags	1/11.1%

Local Student ID	Last Name	First Name	Spec Ed	LEP	Age	Freshman Watchlist Flags				# of Absences	Final Course Grades		# of Disciplinary Referrals	TAKS		Feeder School/ Campus ID
						Attendance	Academic	Discipline	TAKS		Math	Reading/ ELA		Math	Reading/ ELA	
123456789	Smith	John	N	N	14	N	Y	N	N	2	62	74	2	72	79	XYZ Middle School
234567890	Howard	Leon	N	N	15	Y	N	N	N	40	80	85	2	78	80	123 Middle School
34567901	Guy	Maria	N	Y	14	N	N	N	N	2	80	87	0	75	80	XYZ Middle School
456789012	Jones	Mark	Y	N	16	Y	Y	Y	Y	38	65	72	5	60	70	XYZ Middle School
567890123	Hank	Rosie	N	N	14	N	N	N	N	4	79	83	0	75	80	123 Middle School
678901234	Young	Kai	N	N	13	N	Y	Y	Y	10	71	68	7	65	65	XYZ Middle School
789012345	Martinez	Sophia	Y	Y	14	N	N	N	N	8	82	79	0	79	75	123 Middle School
890123456	Williams	Markus	N	N	14	N	N	N	N	3	80	81	2	80	83	123 Middle School
901234567	Gonzalez	Antonio	N	Y	14	N	Y	N	Y	4	78	69	0	75	65	XYZ Middle School

 # Flags Legend:
1	2	3	4

Student Early Warning Factor Legend:
Attendance Flag - Student had <80% attendance in 8th grade
Academic Flag - Student did not pass Math and/or Reading/ELA in 8th grade
Discipline Flag - Student had one unsatisfactory behavior referral in 8th grade
TAKS Flag - Student did not pass TAKS Math and/or Reading/ELA in 8th grade

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[1]Report Description
Report of incoming first-time freshmen and their potential early warning indicators

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SAMPLE DATA ONLY
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Freshman On-Track Report[1] for ABC DISTRICT ISD -- as of June 25, 2012
ABC HIGH SCHOOL -- Grade 9

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ON-TRACK REPORT SUMMARY

	N	%
On-Track	6	67.7
Off-Track	3	33.3

Local Student ID	Last Name	First Name	Spec Ed	LEP	Age	# of Absences	# of Disciplinary Referrals	Final Course Grades (%) Math	Reading/ ELA	Social Studies	Science	Credits Earned	On-Track
123456789	Smith	John	N	N	15	1	0	78	74	79	81	12	Y
234567890	Howard	Leon	N	N	16	4	1	72	83	85	77	12	Y
345678901	Guy	Maria	N	Y	15	2	0	79	85	88	88	12	Y
456789012	Jones	Mark	Y	N	17	15	2	67	69	67	68	10	N
567890123	Hank	Rosie	N	N	15	8	2	73	73	75	71	12	Y
678901234	Young	Kai	N	N	14	7	1	71	70	78	70	12	Y
789012345	Martinez	Sophia	Y	Y	15	6	3	57	68	72	47	9	N
890123456	Williams	Markus	N	N	15	1	0	80	89	83	79	12	Y
901234567	Gonzalez	Antonio	N	Y	15	12	2	68	59	73	71	12	N

Off-Track Criteria Legend:
Credits Earned (insufficient total credits earned in the 9th grade); or
Final Course Grades (failed a core course in the 9th grade); or
Both Credits Earned & Course Grades in the 9th grade.

[1] Report Description:
Report tracks students' status of being on or off track
toward high school graduation, based on the
appropriate criteria, at the end of the freshman year.

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(rev. 3/18/2011)

Putting Middle Grades Students on the Graduation Path

A Policy and Practice Brief

Robert Balfanz
Everyone Graduates Center and Talent Development Middle Grades Program

National Middle School Association

June 2009

 JOHNS HOPKINS
U N I V E R S I T Y

About Everyone Graduates Center

The Everyone Graduates Center (EGC) is located at the Center for Social Organization of Schools at Johns Hopkins University, one of the nation's leading research universities. The mission of the Everyone Graduates Center is to develop and disseminate the know-how required to enable all students to graduate from high school prepared for college, career, and civic life. Through a systematic and comprehensive approach, EGC combines analysis of the causes, location, and consequences of the nation's dropout crisis with the development of tools and models designed to keep all students on the path to high school graduation, and capacity building efforts to enable states, communities, school districts, and schools to provide all students with the supports they need to succeed.

About Philadelphia Education Fund

The mission of the Philadelphia Education Fund is to improve the quality of public education for underserved youth throughout the Philadelphia region. Working closely with school districts, schools, businesses, universities, nonprofit organizations, community stakeholders, and other partners, the Philadelphia Education Fund aims to create high-performing secondary schools (grades 6 – 12) where public school diplomas are synonymous with rigorous and high quality education that leads to post-secondary success; provide all students with access to postsecondary education opportunities and the assurance that they can complete appropriate and rigorous classes to allow them to succeed in college and career; and create strategic alliances to support student success from pre-K through college.

The Philadelphia Education Fund's portfolio of programs and initiatives focus on enhancing teaching and learning, conducting research studies that fuel its work and that of others, directly assisting students to access and succeed in postsecondary education, convening public education stakeholders in support of school reform policy and practice, and informing and engaging citizens as public school advocates.

NMSA.

About National Middle School Association

Since its inception in 1973, National Middle School Association (NMSA) has been a voice for those committed to the educational and developmental needs of young adolescents. With nearly 30,000 members representing principals, teachers, central office personnel, professors, college students, parents, community leaders, and educational consultants across the United States, Canada, and 46 other countries, NMSA welcomes and provides support to anyone interested in the health and education of young adolescents. In addition, NMSA has a network of 58 affiliate organizations in the United States, Canada, Europe, and Australia that strengthens our outreach to the regional, state, provincial, and local levels.

Through the release of our landmark position paper, *This We Believe: Successful Schools for Young Adolescents*, NMSA has been a key resource to middle level educators looking to develop more effective schools. Our message is for schools to be academically excellent, developmentally responsive, and socially equitable for every young adolescent.

A Policy and Practice Brief

Putting Middle Grades Students on the Graduation Path

Robert Balfanz
Everyone Graduates Center and Talent Development Middle Grades Program

The middle grades will play a pivotal role in enabling the nation to reach President Obama's goal of graduating all students from high school prepared for college or advanced career training. In high-poverty neighborhoods, in particular, our research and school improvement work indicate that students' middle grades experiences have tremendous impact on the extent to which they will close achievement gaps, graduate from high school, and be prepared for college. Consequently, there is a need to reconceptualize the role the middle grades play in the public education system. The middle grades, broadly defined as fifth through eighth grade, need to be seen as the launching pad for a secondary and post-secondary education system that enables all students to obtain the schooling and/or career training they will need to fully experience the opportunities of 21st century America.

This brief, drawing on our research and field work, illuminates key policy and practice implications of the middle grades playing a stronger role in achieving our national goal of graduating all students from high school prepared for college or career and civic life. The brief is based on more than a decade of research and development work at the Center for the Social Organization of Schools at Johns Hopkins University.

It also draws on direct field experience in more than 30 middle schools implementing comprehensive reform and a longstanding collaboration with the Philadelphia Education Fund.

Major Research Findings

We first highlight our major research findings in two critical areas—the role of the middle grades in determining the likelihood that a student will graduate from high school and their role in closing achievement gaps.

Role of Middle Grades in Determining the Odds of High School Graduation

Our fundamental finding is that in high-poverty environments a student's middle grades experience strongly impacts the odds of graduating from high school.

Initial Findings from Philadelphia

Working with the Philadelphia Education Fund, we followed several cohorts of Philadelphia students from sixth grade through one year past on-time graduation. Our central question was: How early in the middle

grades could we see clear signals that students had fallen off the path to high school graduation? Our goal was to find high-yield indicators that shared two critical features: Identifying students who, absent intervention, would have low odds of graduating (25% or lower graduation rates) and collectively identifying a significant number (at least 25%) of future nongraduates or dropouts. In short, we looked for indicators that were not only accurate, but also had practical application.

We found that sixth graders who failed math or English/reading, or attended school less than 80% of the time, or received an unsatisfactory behavior grade in a core course had only a 10% to 20% chance of graduating on time. Less than 1 of every 4 students with at least one off-track indicator graduated within one extra year of on-time graduation.

Although these numbers are shocking initially, upon reflection they are understandable. Once a sixth grader has demonstrated that he or she lacks either the knowledge to pass tests in math or English or the ability to complete assignments, absent successful intervention, this is unlikely to change on its own. This may be especially true in high-poverty environments, where home and community resources can be limited.

As a result, the student continues to fail courses and may not achieve on-time promotion to the next grade. The student then enters high school, overage for the grade with a history of course failure. Lacking the skills, knowledge, and self-confidence to succeed in high school and feeling distanced from his or her peers, the student continues to fail, does not earn promotion to the 10th grade, and, at this point, may well have reached the legal age for dropping out. Similar trajectories can be seen for 11- and 12-year-olds who miss one or two or more months of school or who receive poor behavior ratings from their teachers. Both clearly signal lack of engagement and participation in school. Absent successful intervention, these behaviors do not typically self-correct over time and lead to course failure, non-promotion, and ultimately, dropping out.

Findings from Replications and Extensions in Additional School Districts

We have subsequently replicated the Philadelphia study in five school districts. These replications confirm the core findings of the Philadelphia study and collectively indicate that, at least in high-poverty environments, it is possible to identify in the middle grades up to half, and sometimes even more, of eventual dropouts. The replications also provide some important nuances.

- **Critical attendance thresholds varied by school district.** In some districts, students who missed a month or more of school (roughly, 90% attendance rates or less) had greatly diminished graduation odds. In other districts, like Philadelphia, students needed to miss two or more months (roughly, attendance of 80% or less) to achieve similar outcomes. This suggests that both the number of days a student misses and how his or her attendance compares with that of peers signal that a student is not fully engaged and is in danger of falling off the graduation path.

- **Mild but sustained misbehavior appears to have an independent effect on graduation odds.** In other words, not paying attention in class, acting out, and not getting along with teachers in sustained fashion signal disengagement. Left unaddressed, behaviors that typically might generate a low mark for conduct or multiple behavior referrals knock students off the graduation path. Thus, schools and districts that do not have data that capture these interactions in a systematic and cumulative fashion ultimately miss some students who are clearly signaling they are off track.

- **Students who fall off track in the sixth grade tend to have one or two off-track indicators.** Relatively few sixth graders have three or four indicators, that is, failing math and English and having low attendance and poor behavior (a pattern, by comparison, that is common in high school). The most common combination was for students to be failing either math or English (not both) and to

have either an attendance or a behavior indicator. A significant subset of students, however, had just one indicator—failing a single class, not attending school regularly, or misbehaving. This suggests that students, at least in the sixth grade, are falling off the graduation path from different avenues. The avenues, moreover, appear to follow basic human reactions to uncomfortable environments. The students are fleeing (not coming to school), pushing back (acting out), or withdrawing (coming to school and behaving, but not paying attention or engaging).

- **The earlier students develop off-track indicators, the lower their graduation odds appear to be.** The first year of the middle grades (typically the sixth grade year), much like ninth grade, appears to be a make-or-break year. Across the school districts we examined, most middle grades students developed their off-track indicators in sixth grade. Moreover, students who signaled that they were falling off the graduation path in the sixth grade had worse outcomes than students who did not begin to develop off-track indicators until at least the seventh grade.

- **Students who exhibit off-track indicators in the middle grades are resilient.** Sixth graders who signaled they were falling off the graduation path typically remained in school for at least five more years. This indicates there is substantial time to intervene and that, despite years of struggle, students, perhaps with diminishing motivation, continue to attempt to participate and succeed in their schooling.

- **Different measures of academic outcomes are often highly correlated, but some are still better indicators than others.** Across the districts, we found that course grades were better indicators; they were both more reliable and had a higher yield (predicted a greater percentage of dropouts) than standardized test scores. Only very low test scores—scores below the 15th percentile on a nationally normed test—had predictive power and useful yields. It was only when course grades were not entered into the analysis that test scores, in

general, showed predictive power. This was because, in general, though not always, students with poor grades also had low test scores. Upon reflection, it is not that surprising that grades predict better than test scores. Grades will, on average, be more sensitive to students' attendance and effort over time. Thus, receiving a failing grade for an entire year likely signals substantial and sustained disengagement as well as skill and knowledge gaps. Moreover, passing courses in high school is key to earning the required credits to graduate. Even states with graduation or exit exams require students to pass their courses to graduate. Thus, middle grades students who have difficulty passing their courses are directly signaling difficulty with the most salient factor in determining whether they will graduate.

- **Ds seem important, too.** In Philadelphia we found that focusing on math and English grades only provided strong predictive power, while in other districts we saw that any course failure and even overall GPA were also effective indicators. How much course performance information is used becomes a judgment call balancing predictive power and yield (the likelihood a student will graduate versus how many future nongraduates are identified). This tension can clearly be seen in the question of Ds. Across the districts we found course failure—typically defined as receiving an F or a grade below 60% or 65%— was more predictive than receiving the grade just above failing, typically a D. Students who received Ds, however, still had considerably lower graduation odds than students with C averages or higher. Also, Ds tended to be predictive of Fs. So, here is the judgment call: Does it make sense to include students who receive Ds in an early warning system to signal that, absent successful intervention, these students likely will not graduate, even if it means that a greater proportion of the students who receive additional supports may not have needed them? In the case of Ds, we believe the answer is yes, but we highlight this question to show the importance of using local judgment as well as solid empirical analysis in establishing the set of on- and off-track indicators a school, district, or state will use.

- **Students who come every day, behave, and get good grades graduate in high numbers.** Across the districts we examined, middle grades students who had 95% or better attendance, B averages or better, and no record of misbehavior graduated in relatively large numbers, even when they attended low-performing schools in high-poverty districts.

- **Similar schools serving similar student populations had different percentages of students with off- and on-track indicators.** This indicates that schools can have a powerful influence on shaping student behavior. This provides a clear goal to schools and districts: Drive down the number of students exhibiting off-track indicators and drive up the number of students exhibiting on-track indicators.

- **Middle grades schools within districts also often have unequal distributions of off-track students.** In every school district we examined, every middle school had some students exhibiting off-track indicators. In some this amounted to a small percentage of students, and in others, it amounted to half or more of all students. This suggests that while all schools can employ these indicators and benefit, some schools will need substantially more resources than others to respond effectively.

Role of the Middle Grades in Closing Achievement Gaps

Efforts to keep students on the graduation path should be paired with efforts to close achievement gaps. It is during the middle grades, particularly in lower-performing schools that serve high-poverty populations, that achievement gaps often become achievement chasms. To achieve the nation's goal of graduating all its high school students ready for college and career, it will be essential for students to enter high school with at least close-to-grade-level skills and knowledge. Many high schools have been able to provide additional supports for succeeding in high standards environments if their students enter with skill and knowledge levels equal to those of average seventh or eighth graders. However, the number of programs able to achieve similar results

with students entering with upper elementary level skills—those typical of fifth and sixth graders—is much smaller. Yet in high-poverty environments, nonselective high schools often educate primarily students who enter with the skill levels of typical fifth or sixth graders. In short, these are students who lack a solid middle grades education.

Moreover, while it is arguable that a long-term solution involves better pre-K through elementary instruction so that nearly all students enter the middle grades having mastered elementary skills, middle grades schools must find ways to accelerate student learning and close rather than widen achievement gaps.

Core Findings from Philadelphia

To date, the research we have conducted on closing achievement gaps has been limited to Philadelphia and has focused primarily on mathematics. Specifically, we examined the 23 middle grades schools in Philadelphia serving student bodies that were at least 80% minority with at least 80% of students qualifying for free and reduced-price lunch. Thus, our results are illustrative rather than definitive.

The fundamental questions we explored were: What factors enable middle school students to make large, gap-closing achievement gains? What factors constrain middle school students from making those gains? In these investigations we defined large gains as increases of 10 percentile points or greater on standardized tests. Thus, if a student started sixth grade scoring at the 30th percentile on a nationally- or state-normed test and left the eighth grade at the 40th percentile, we would classify this as a large and gap-closing achievement gain. The student's achievement gap was not fully closed. He or she was still below the 50th percentile but left the middle grades much closer to it than when entering.

Achievement Gap Closing Within and Between Middle Grades Schools

Middle grades students in these 23 schools either **significantly closed their achievement gaps or fell further behind.** Within each of the schools, two sets of students were having very different experiences.

While some students were making impressive gains, others were leaving the middle grades further behind than when they entered. Within each school, roughly a quarter to a third of students made very large gains, while the majority of students lost ground. In a few schools, only 10% to 15% of students made gains, but in a few others more than 40 percent did. This indicates that with relatively similar populations in the same city, some schools witnessed three times as many students making gap-closing gains as other schools did. In no school, however, did half or more of the students experience large achievement gains.

Across the 23 middle grades schools, average achievement gains for the school could lead to false impressions. When the outcomes of the gap-closing and gap-increasing students are averaged at the school level, it creates the illusion of either small school-wide improvements or declines. In truth, what distinguished one school from the next was not whether they were making small improvements for all students but how widespread an opportunity they were creating for students to make large achievement gains.

Enablers and Constraints of Achievement Gap Closing

1. **In line with prior research, we found that teachers had the strongest impact on whether or not a student would close or widen achievement gaps during the middle grades.** If, for two of the three years, students were in classrooms in which the average student witnessed more than a year's growth in a year's time, all were considerably more likely to close their achievement gaps.

2. **Attendance, behavior, and effort all had independent and additive impacts on the likelihood that a student would close achievement gaps.** This indicates that to close achievement gaps, students needed not only strong teachers, they also had to show up, behave in class, and try hard to learn. Research shows school actions can positively impact all of these behaviors. This reinforces the point that schools need to pay attention to shaping both learning opportunities and student motivations.

3. **For large numbers of students to close their achievement gaps, all of these factors must operate in concert.** When students were in a high-gain classroom for at least two years, came to school 95% of the time, on average had excellent behavior marks, and put forth greater-than-average effort in math class, a remarkable 77% closed their achievement gaps during the middle grades. However, across the three representative middle grades schools we studied intensely, only 20% of the students experienced these conditions and exhibited these behaviors.

Implications for Policy and Practice

What do these research findings on the role of the middle grades in determining high school graduation and in closing achievement gaps, particularly in schools that serve high- poverty populations, imply for policy and practice in a college-and-career-readiness-for-all era?

First and foremost, the research demonstrates that the middle grades matter—tremendously. During the middle grades, students in high-poverty environments are either launched on the path to high school graduation or knocked off-track. It is a time when they can close achievement gaps and enter high school ready or at least close to ready for standards-based instruction that leads to college readiness. Alternatively, it is a time when students' achievement gaps widen, forcing them to enter high school still in need of a good middle grades education.

These findings also demonstrate why reform is difficult, as no single reform stands out as the major action required. Using our combined Philadelphia data from our achievement gap and staying on the graduation path studies, we were able to model explicitly the contributions of major school reform elements. Essentially, we found that everything one might think matters, does so, but modestly at best. This included parental involvement, academic press, teacher support, and the perceived relevance of what was being taught and its intrinsic interest to students. Some of these

factors influenced attendance, others influenced behavior or effort, and they either indirectly or directly impacted course performance, achievement gains, and graduation outcomes. It was only when all the elements were combined in a well-functioning system that major gains were observed.

The ABCs of Putting Middle Grades Students on the Graduation Path

The research, development, and school improvement work we have done on the factors that throw middle grades students off the graduation path and the actions that lead to large achievement gains in the middle grades tell us much the same thing. This is fortunate because it enables the formation of a unified middle grades improvement strategy that will lead to both increased academic achievement and higher graduation rates. When combined with good middle grades practices such as those detailed in publications such as *This We Believe: Successful Schools for Young Adolescents, This We Believe in Action: Implementing Successful Middle Level Schools, Success in the Middle: A Policymaker's Guide to Achieving Quality Middle Level Education, Making Middle Grades Work,* and *Breaking Ranks in the Middle;* curricula and instructional practices linked to college and career readiness; and enhanced teacher quality, our research and experience suggest that the following actions and practices can accelerate and magnify the impact of the middle grades on student success.

Attendance

School districts with low graduation rates usually have significant—and often unrecognized —chronic absenteeism in the middle grades. It is in the middle grades that students learn they can miss first a few and then a growing number of school days with few or no repercussions. It is also during the middle grades, especially in urban areas, that students start taking mass transportation to school—municipal buses and subways—sometimes involving a transfer. This provides them the opportunity to set off for school but not quite get there or to leave during the school day. In some cities we have examined, the majority of middle grades students in some schools

and neighborhoods miss 20 or more days (a month or more) of school. In one large city, we tracked students over time and found that 40% of students missed a year or more of school cumulatively over a five-year period beginning with sixth grade. This indicates that one source of the growing achievement gaps in the middle grades, in some locations and for some students, is the simple fact that they are not in school enough to keep up. Consequently, middle schools must monitor attendance more carefully and make strong efforts to prevent students from developing poor attendance habits.

Schools must

- **Measure attendance in informative and actionable manners.** At a policy level this will involve recording not simply average attendance in a school, but keeping track of how many students have very good attendance, i.e., miss 5 or fewer days a year; are moderately absent, missing between 10 and 19 days; are chronically absent, missing 20 or more days; or extremely chronically absent, missing 40 or more days.

- **Take measures to increase the number of students with very good attendance and decrease the number who are chronically absent.** This means that every absence needs to elicit a response. At first this can be simple outreach to let students know they are missed and to solve any problems standing in their way of attending school. If the absenteeism persists, more structured responses are required. For better or worse, acknowledge that middle grades students are starting to make independent decisions about their level of school engagement. As important as parents are, the extent to which schools encourage good attendance and help problem solve attendance issues, matters.

- **Recognize good attendance regularly through public acknowledgement and social rewards (i.e., earning privileges).** Positive peer pressure can also be activated by recognizing not only good individual attendance but collective success as well (i.e., homeroom or classroom and grade level attendance).

- **Separate attendance from course performance.** Student grades should not be administratively affected by poor attendance (e.g., lowering grades if students miss a certain number of days). Rather, give students a structure for making up missed assignments. Then address the source of the student's absenteeism, whether disengagement or issues in school, at home, or in the community. Similarly, students who are chronically absent should not be suspended. Having students miss more school because they missed too much school has not proven to be an effective response. This does not mean that students should not be held responsible for their own attendance, as it is clear that at least some students are making a choice not to attend on a given day. But the consequences need to be modulated so that they lead to improved attendance behaviors and do not knock students off the graduation path.

- **Be and be perceived as safe and engaging places.** Schools should regularly survey students on the reasons they miss school, their perceptions of school safety and climate, and their levels of engagement. Surveys should be analyzed by whatever units the school uses to organize students (homerooms, core groups, pods) to help identify clusters of students whose micro-experience differs in negative ways from that of their classmates. A group of disaffected or uneasy students may encourage and enable each other to miss school.

Belief, Behavior, and Effort

Central to increasing the positive impact of the middle grades on the nation's graduation rate is engaging students in the quest. Middle grades students need to believe that hard work will bring life success, that positive behavior is recognized and desired, and that they need to invest their personal agency and apply effort to succeed. In many low-performing middle schools, however, what students learn is that rules and rewards are applied capriciously (i.e., each teacher has different rules), that school is something to be endured, that negative behavior gets attention, and that doing just enough to get by and pass is acceptable. Policies and practices that promote good behavior, engagement, and effort and build upon student assets include:

- **High engagement electives that provide avenues for short-term success and positively recognize asymmetrical skills levels.** Students who enter the middle grades with poor preparation require time to build up their formal academic skills to the point where they feel successful and are recognized as such. This is too long to wait for most adults, let alone young adolescents. Thus, students need other educational experiences that provide avenues for short-term success. Experiences like debate and drama in which students with strong verbal skills but weaker writing skills can show their talents or robotics and chess in which students with good engineering or logic abilities but limited formal mathematics skills can demonstrate strengths are essential.

- **Activities that honor and use middle grades students' desire for adventure and camaraderie.** Some students cut class or act out for the sheer thrill, or because they want to belong to the group of students who earn social recognition from their peers for such behaviors. Students need positive alternatives that allow them to work collectively on activities that are meaningful to them. Group rather than individual service learning projects, for example, encourage students to put their collective energy to use solving problems and helping others.

- **Recognition at both the individual and group level for positive behavior.** Make students responsible for managing part of the effort. Have them work with teachers to develop short and common lists of positive behaviors and recognize individuals, classes, and groups that achieve them.

- **Teaching organizational and self-management skills.** In moving to college and career readiness for all, we must now teach some skills formerly learned by students on their own. All students need lessons and modeling of study and work skills like time and task management, note taking, and assignment

completion strategies as well as social skills like working cooperatively with others and resolving conflict. Equally important is modeling the level of effort needed for adult success and building upon and expanding students' resilience.

Course Performance

The most critical challenge is finding ways to improve the quality of middle grades coursework and course performance. Students who receive high-quality instruction and course assignments will learn and advance and, ultimately, graduate college-ready. Those who do not, will not. To meet this challenge, progress and improvements in several areas will likely be required. Some reconceptualization of what constitutes student achievement in the middle grades may also be needed.

- **Encouraging quality coursework may require new forms of assessment.** Benchmark testing, which provides teachers formative assessments of students' progress toward mastering skills and standards, can play an important role. Its primary focus, though, is usually identifying the subset of skills in a topic or concept that a student has or has not mastered. Focusing only on discrete skills or knowledge, however, misses a key component of quality coursework: the ability to integrate a series of skills and a set of knowledge to produce an intellectual product such as a persuasive essay, a substantive science experiment; an equation, table, or graph that helps solve a problem; or analysis of a historical event that provides insight. If these are the desired outcomes—and analysis of emerging concepts of college readiness argue that they are—we will need to develop formative and summative assessments that focus effort and support on them.

- **Accept and acknowledge the implications of course grades being more predictive of eventual success than test scores.** Course grades capture effort, engagement, and even attendance over time as well as knowledge and skill levels. Yet, inherently, we often recoil from the implications of this finding because we fear grade inflation and easy ways to game the system. The result is that the dominant focus of our academic improvement efforts becomes raising student test scores rather than improving course performance. A more productive strategy is to fix the potential limitation of grades by creating common rubrics across subjects, grades, and classrooms within schools and by employing common final exams to check consistency of grades.

- **Create developmentally appropriate high school/ college readiness indicators that are meaningful and engaging to middle grades students and understood by parents.** One way to conceptualize this is to consider creating the academic equivalent of merit badges. Students could be recognized for demonstrating mastery of meaningful chunks of knowledge or intellectual skills in ways such as successfully arguing a case in moot court, writing an effective op-ed, statistically illuminating a public policy challenge, or creating a logic model of the spread of disease.

- **Get extra help right.** Fundamental in effecting broad-based improvement in the quality of middle grades course work will be developing extra help and support systems that are integrated with class activities assignments and provided when the need arises, not long after it is needed. Currently, too much extra help is offered through after-school programs and is disconnected from students' day-to-day classroom needs. Students struggling in math may receive extra help, but it is often designed to build their general skill level or address a skill deficiency that is tested. If students get extra help in fractions, but their test on Friday covers integers, they are not getting the support they need to succeed in class.

Early Warning and Intervention Systems

Early warning and intervention systems provide the necessary means to unify, focus, and target efforts to improve attendance, behavior, and course performance. Their fundamental purpose is to get the right intervention to the right student at the right time. To achieve this, consider the following:

- **Focus on effective intervention, not just identification.** As our research and that of others has shown, it is possible to identify as early as

sixth grade large numbers of students who, absent successful intervention, likely will not graduate. Identifying students as they are just beginning to fall off the graduation path enables schools to target resources effectively and move from a reactive to a proactive intervention strategy. Simply identifying students, however, will have no significant impact unless it leads to the students receiving the additional supports they need to get back on track. As identification is relatively easy and effective intervention can be hard, the temptation may be to focus on the first and not the second. Or, districts and states may see their role as setting up the early warning system, then leaving it to the schools to figure out how to use the data and build an intervention system. What will likely be required, however, for early warning and intervention systems to fulfill their promise, is collaboration among states, districts, and schools to design, implement, and staff multitiered intervention systems. In the areas of attendance, behavior/effort, and course performance, these intervention systems will need to provide research-based and practice-validated, whole-school prevention strategies; targeted supports for students who need more; and intensive supports for students for whom whole-school and targeted approaches are not enough. It does not make sense for every school to have to invent, validate, implement, and resource this intervention system on their own.

- **Recognize and build on student strengths.** It is also vitally important that early warning and intervention systems are not built around deficit models. Student strengths, as well as areas of struggle, need to be recorded, recognized, analyzed, and used to help build and deliver effective interventions.

- **Provide time, training, and support to teachers for implementing early warning and intervention systems.** For early warning and intervention systems to work, interdisciplinary teams of teachers (pairs, triads, four- to six-person teams can all work) must share a common set of students and have common planning time to monitor student progress, evaluate the effectiveness of interventions, and adapt

strategies as needed to make sure that the right intervention is getting to the right student at the right time. Teachers will need technical assistance on how to run and operate early warning and intervention systems as well as ongoing support and facilitation to help them establish effective teaming and intervention practices.

- **Match resources to student needs but practice intervention discipline.** For early warning and intervention systems to work, schools will need access to the resources required to respond to their students' needs. Often, this will be a question of scale. A high-poverty middle school with 800 to 1,000 students could have 200 students needing daily targeted supports of moderate intensity. These students may need someone to call their homes when they do not show up at school, make sure they have completed their homework and school assignments, help them understand what they need to do or how to do it, remind them to behave in class, check on their progress in fulfilling a behavior contract, and invite them to an engaging after-school activity. Serving 200 students with these needs, however, far outstrips the typical capacity of a sole attendance monitor, social worker, guidance counselor, or dean. In this case, there is a need to recruit and support additional adults from the community or national service organizations or older students involved in service learning to act as shepherds for these students. Because intervention support is expensive, administrators must establish criteria for prioritizing who receives it. This intervention discipline must be exercised to make resource acquisition feasible. In some high-poverty middle schools, it could well be true that most students would benefit from a social worker or counselor and a tutor. Social workers, counselors, and tutoring programs, however, are usually scaled for tens of students, not hundreds. High-quality one-on-one or small-group support is also expensive. So these supports need to be preserved for the students for whom nothing else works, not employed as the first line of intervention for all students showing signs of falling off track.

- **Evaluate the effectiveness of interventions.** Because so many different interventions can be going on at one time in a school, it is difficult to determine which intervention methods are effective for which problems. If an important outcome like achievement goes up, then every intervention in the school is deemed successful. Likewise, if achievement goes down, everything is viewed as ineffective. The truth, however, is likely to be much more mixed, with some interventions working in both circumstances. Simple tools enabling teachers to track which intervention is used with which student and how well the student responded to the intervention are needed along with the time to analyze the impact of the interventions. For example, if only two of the ten students assigned mentors improved their attendance, there is evidence that mentoring might not be the best frontline strategy, at least for certain types of students. Over time, this micro-evaluation of interventions is what will enable schools to successfully target the right intervention to the right student at the right time.

- **Teachers and administrators can get started with just the data currently available in their schools.** Although, ultimately, state and district data systems will enable early warning and intervention systems to realize their full power, all of the key data needed to begin is already available in schools. Grades, daily attendance, and behavior referrals and consequences are recorded routinely and regularly in schools. Thus, it is not necessary to wait for the district or the state to build early warning data systems. Teams of teachers sharing common sets of students can share the key early warning data among themselves, and principals, deans, and counselors can organize, model, and support the use of these school-based data.

Challenges

There are three major challenges to acting effectively on the insights generated by our research and fieldwork.

- **Getting the ratio of skilled adults to students in need right.** One of the fundamental drivers of the nation's graduation rate crisis is the concentration of our neediest students in a subset of largely under-resourced schools. Customarily, middle schools are designed with the assumption that, perhaps, 15% of students might need various forms of extra help to succeed, with similar numbers ready for acceleration, and the vast majority of students able to make it through on their own. These assumptions, for example, are what determine ratios of one counselor or assistant principal to hundreds of students and class sizes of 25 or more. In the high-poverty middle schools feeding the high schools that produce most of the nation's dropouts, up to half, and sometimes more, of the students need extra supports to succeed. In these schools, there simply are not enough skilled adults to help the students in need. The result is triage, burnout, and high mobility among administrators, teachers, and staff members. This, in turn, makes the situation worse, as reforms are unable to take hold amidst constantly shifting sets of adults. These, then, are the schools that will require an infusion of skilled and committed adults from the community, local colleges and universities via work study programs, and, perhaps most promisingly, through national service programs. Recent federal legislation has greatly expanded the funding available to national service programs and has targeted them more closely to solve urgent national priorities. Schools and districts can expand the role of national service organizations with proven track records, such as Experience Corps and City Year. At the same time, the federal government, states, and districts need to work together to increase the skill, longevity, and, in many cases, the number of teachers, administrators, and support staff in middle schools with large numbers and percentages of students needing extra supports to stay on the graduation path.

- **Getting teacher buy-in and support for the mission of keeping middle grades students on the graduation path.** Asking teachers not only

to focus on getting students to succeed in their coursework but also to pay attention to their long-term educational trajectory is a new mission. It is a mission that teachers will willingly embrace if they have been given sufficient information about the impact of attendance, behavior/effort, and course performance on students' odds of long-term success, and when they believe a support system exists to enable adults to effectively collaborate to help students. This allows them to see it as more than just one more demand on their already full schedule.

- **Strengthening the family-student-teacher support triangle.** Ideally, middle grades students are strongly supported by their parents/families and their teachers, with the teachers and parents supporting each other. In practice, often as the result of miscommunication or lack of communication, one or more of these relationships breaks down or is not sufficiently strong. Moreover, as the nation raises its goal to college and career readiness for all, the need for parents, teachers, and students to be on the same page increases. Take, for example, student effort. Teachers need to be able to expect that students will complete assignments in acceptable fashion. But parents need good information on what those assignments are and how they can help. Students may or may not convey this well on their own. Students also need to know that when they face a real impediment to completing an assignment—whether they do not understand the material or a family situation distracts them—that teachers will take them at their word and find ways to help them finish it. In these situations, teachers need to be able to double check the details with parents. Although his seems straightforward, more often than not, it does not occur without effort. Thus, active and evidence-based strategies need to be in place to increase family-student-teacher partnerships.

Conclusion

Two thousand high schools produce half the nation's dropouts and more than two-thirds of its minority dropouts. The nation's dropout crisis is driven by these high schools and their feeder middle grades schools. Until we transform these high schools and the middle grades schools in which large numbers of students are falling off the path to graduation, the nation will not achieve its goal of graduating all its students from high school prepared for college, career, and civic life.

As our research, experience, and the work of many others have shown, particularly in high-poverty environments, a student's middle grades experience is critical to his or her life's chances. It is during the middle grades that students either launch toward achievement and attainment, or slide off track and placed on a path of frustration, failure, and, ultimately, early exit from the only secure path to adult success. This essential path is leaving high school prepared for post-secondary education and career training.

Our research, experience, and the work of many others, however, also shows that there is hope and considerable knowledge and know-how regarding how the middle grades can be transformed to enable all students to stay on the graduation path. Our challenge is to use this knowledge and know-how where it is needed most and in ways tailored to local circumstances.

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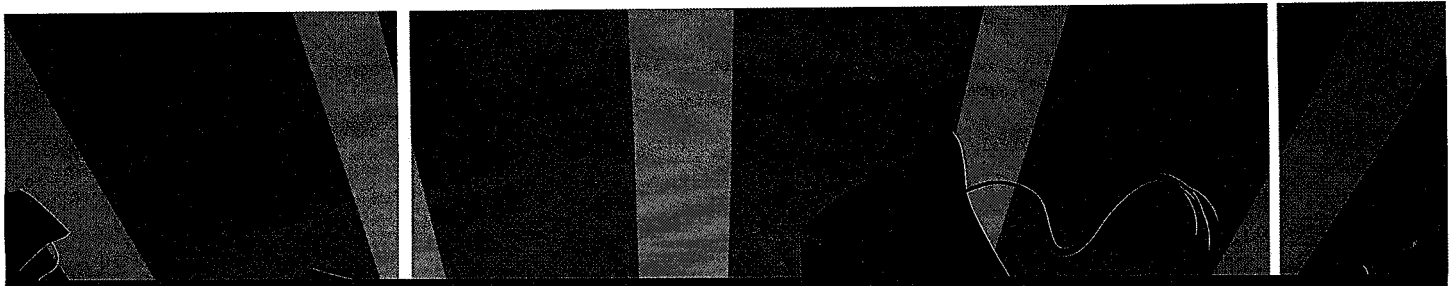
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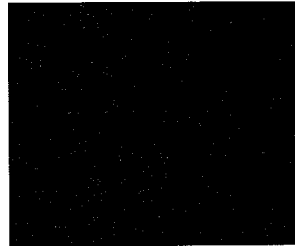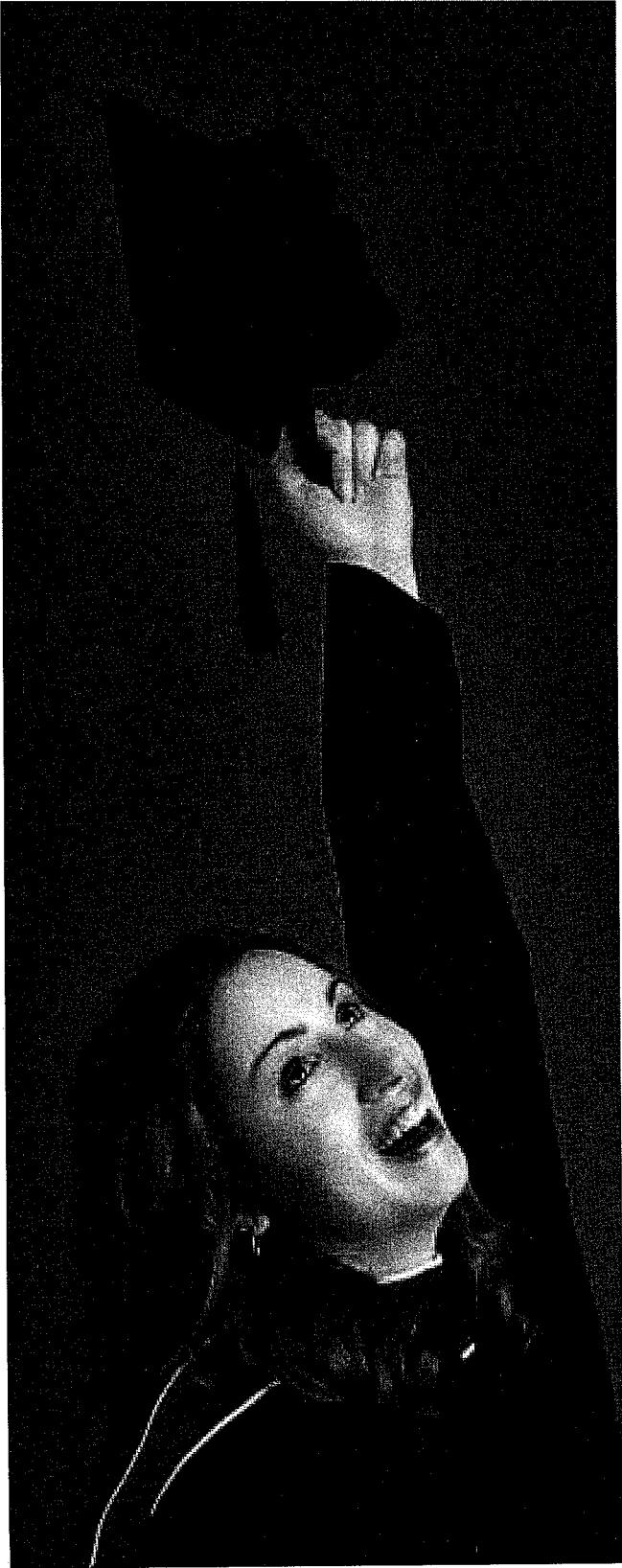
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January 2011

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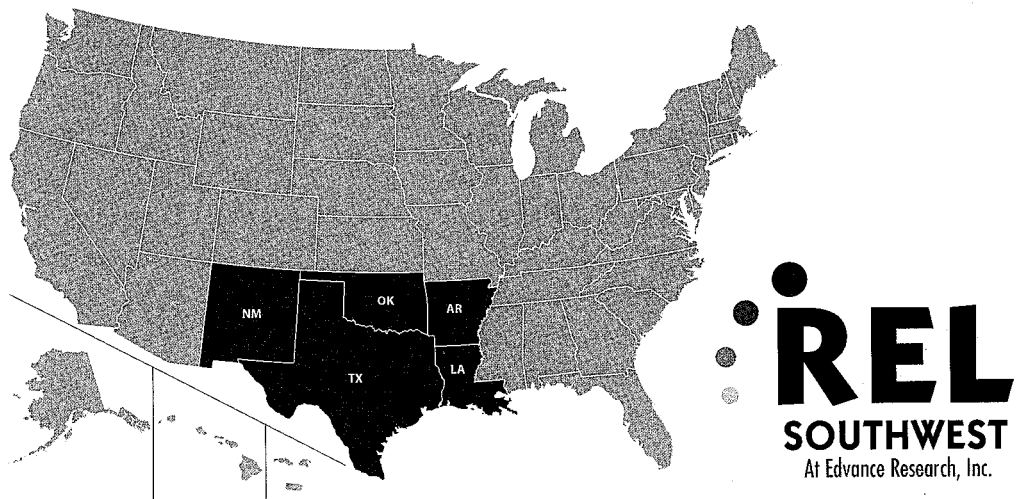Regional Educational Laboratory-Southwest

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January 2011

Applying an on-track indicator for high school graduation: adapting the Consortium on Chicago School Research indicator for five Texas districts

This study uses a measure of the on-track or off-track status of students at the end of grade 9 as an indicator of whether students in five Texas districts would graduate from high school in four years. In all five districts, on-time graduation rates were higher for students who were on track at the end of grade 9 than for students who were off track, both for students overall and for all racial/ethnic groups.

Failure to graduate from high school is a widespread problem in the United States. Although reporting methods vary, one recent estimate indicates that 73.2 percent of grade 9 public school students graduate within four years (Stillwell and Hoffman 2008) and that graduation rates are lower in districts with higher proportions of minority and economically disadvantaged students (Swanson 2004, 2009). Despite variations in reporting methods, there is enough agreement across datasets to conclude "with reasonable confidence that roughly three of every 10 students in the United States are not graduating from high school on time" (Belfield and Levin 2007, p. 6).

The overall graduation rate in Texas is similar, at 72.5 percent (Stillwell and Hoffman 2008),

and state officials have made increasing the proportion of students who graduate from high school a high priority. Several initiatives have been established to identify students who may be at risk of not graduating on time (within four years of entering grade 9 for the first time), so that district and school personnel can intervene early enough to support students before they drop out or fall too far behind to graduate (Bill & Melinda Gates Foundation 2009; Texas High School Project n.d.).

These initiatives reflect research that focuses on the systematic use of indicators to identify students who may be at risk of not graduating. Researchers from the Consortium on Chicago School Research (CCSR) have developed an indicator using data from a student's grade 9 year (Allensworth and Easton 2005). CCSR compared Chicago Public Schools students' course performance in their first year of high school with their graduation rates four years later and classified students as on track for on-time graduation based on two criteria: earning enough credits to be promoted to grade 10 and having no more than one semester "F" in a core course (English, math, science, and social studies). Students who failed to meet either or both of these benchmarks were classified as off track. The CCSR researchers found on-track

status at the end of the first year of high school to be a more useful indicator of whether Chicago Public Schools students graduated from high school in four years than other indicators examined, such as grade 8 test scores and students' background characteristics (Allensworth and Easton 2005).

The current study applies the CCSR on-track indicator in five school districts across Texas. Participating districts were selected on the basis of prior collaboration with the researchers on another project involving early warning indicators; the districts are not representative of districts in Texas. A total of 12,662 students were examined. The CCSR criteria used to determine on-track status were modified to reflect the number of credits required for promotion to grade 10 in each participating Texas district during the 2004/05 academic year. Because graduation rates differ for specific student subgroups, such as racial/ethnic minorities and economically disadvantaged students, the study sought to determine how accurately this on-track indicator differentiates between all students who do and those who do not graduate on time and between students in specific student subgroups who do and those who do not graduate on time.

This report answers two research questions:

- How do students who are classified as on track and those who are classified as off track at the end of grade 9 differ in on-time graduation rates?

- How do students in specific subgroups who are classified as on track and those who are classified as off track at the end of grade 9 differ in on-time graduation rates?

The results of the study indicate the following:

- In all five districts, a majority of first-time grade 9 students were on track for graduation at the end of grade 9. On-track rates ranged from 61.2 percent to 86.0 percent.

- In all five districts, on-time graduation rates were higher for students who were on track at the end of grade 9 than for students who were off track. In four districts, the difference between on-time graduation rates for on-track and off-track students was 36.1–51.7 percentage points; the fifth district had a difference of 18.4 percentage points.

- Across districts, variability among racial/ethnic groups was greater for off-track graduation rates than for on-track graduation rates. For all racial/ethnic groups, the on-time graduation rate was higher for on-track students than for off-track students.

This study is a first step in helping local districts and the Texas Education Agency develop an on-track indicator that accurately differentiates at the end of grade 9 between students who do and those who do not graduate on time. Across the districts, the on-track indicator differentiated between students who do and those who do not graduate on time, as seen by the higher on-time graduation rates for on-track students. However, it did not differentiate to the same degree as the original CCSR on-track indicator study (Allensworth and Easton 2005). That study found a differential of 59 percentage points between on-time graduation rates of on-track and off-track students. (Note that the minimum number of credits required to graduate is 24 for Chicago

Public Schools and 22 for Texas schools; Chicago Public Schools n.d.; Texas Education Agency 2008d.)

Further research is needed to determine whether alternative on-track indicators would result in greater differentiation for these Texas districts. The research would be similar to the indicator development work of the CCSR in Chicago Public Schools that explored other possible variables for use in an on-track indicator (attendance data and students' grade 8 academic performance; Ponder n.d.). The research could also investigate whether different on-track indicators are needed in Texas districts with different profiles of student characteristics (for example, urban/rural districts or districts with higher/lower percentages of

students participating in free or reduced-price lunch programs) to more accurately differentiate between students who do and those who do not graduate on time, or whether a single on-track indicator could be used across Texas.

The study had several limitations. Districts were not randomly selected and are not representative of all Texas districts. The findings could differ in districts that have not been involved in previous indicator work or have different profiles of student characteristics. Also, only one version of an on-track indicator was used. The degree of differentiation could change if other versions of an on-track indicator were used.

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This study uses a measure of the on-track or off-track status of students at the end of grade 9 as an indicator of whether students in five Texas districts would graduate from high school in four years. In all five districts, on-time graduation rates were higher for students who were on track at the end of grade 9 than for students who were off track, both for students overall and for all racial/ethnic groups.

WHY THIS STUDY?

Failure to graduate from high school is a widespread problem in the United States. Although reporting methods vary,[1] recent estimates suggest that 73.2 percent of grade 9 public school students graduate within four years (Stillwell and Hoffman 2008[2]). Despite the variation in reporting methods, there is enough agreement across datasets that it can be concluded "with reasonable confidence that roughly three of every 10 students in the United States are not graduating from high school on time" (Belfield and Levin 2007, p. 6). Graduation rates are lower in districts with high proportions of minority and economically disadvantaged students (Swanson 2004, 2009[3]). This problem is exaggerated in about 10 percent of high schools with high proportions of these populations, where 60 percent or less of grade 9 students graduate within four years (Balfanz and Letgers 2004[4]). The consequences of failing to graduate from high school are far reaching, affecting earning potential (Rouse 2007), health, and incarceration rates (Muennig 2007; Cutler and Lleras-Muney 2008), as well as the tax revenue and productivity of society as a whole (Rouse 2007).

Because Texas' overall graduation rate, 72.5 percent (Stillwell and Hoffman 2008), is comparable to the national average, and graduation rates for Texas districts with large proportions of minority and economically disadvantaged students are lower (Swanson 2004), state officials have made increasing the proportion of students who graduate from high school a high priority. In 2003, the state invested in a public-private partnership to boost graduation rates and increase the number of high school students prepared for college (Texas High School Project n.d.). More recently, the Office of the Governor, state legislators, the Texas Education Agency, and private partners have worked closely with the Bill & Melinda Gates Foundation to improve and redesign Texas high schools so that every student has access to a rigorous, engaging education (Bill & Melinda Gates Foundation 2009). A goal of these initiatives has been to help educators identify students who may be at risk of failing to

Identifying students at the end of grade 9 who may be at risk of not graduating on time allows time to intervene

graduate so that district and school personnel can intervene early.

These initiatives align with the What Works Clearinghouse *Dropout Prevention: A Practice Guide* recommendation that "utilizing data systems that support a realistic diagnosis of the number of students who drop out and that help identify individual students at high risk of dropping out" is a "critical first step" in effective intervention (Dynarski et al. 2008, p. 12). These types of data systems are termed *early warning systems* because they attempt to identify students who may be at risk of not graduating from high school when there is still time to intervene.

Successful early warning systems track multiple variables that have been shown to relate to students' likelihood of not graduating on time (Heppen and Therriault 2008), such as poor grades in core subjects, low attendance, failure to advance to the next grade, and disengagement in the classroom (Kennelly and Monrad 2007). Such variables are used to develop indicators[5] that identify students who may be at risk of not graduating on time. Studies have shown that on-time graduation rates can be more highly correlated with such indicators than with standardized achievement test scores or student characteristics (Allensworth and Easton 2005; Jerald 2006; Rumberger 2004). However, in practice, any indicator will misidentify some students. This means that some students identified as on track will fail to graduate on time and that (without intervention) some students identified as off track will graduate on time. The goal is to select an indicator that minimizes these misidentifications.

The Consortium on Chicago School Research on-track indicator

An on-track indicator developed by the Consortium on Chicago School Research (CCSR) (Allensworth and Easton 2005) uses data on grade 9 students to determine whether students are on track to graduate on time. Grade 9 has been the focus of much

research (Allensworth and Easton 2005; Neild and Farley 2004) because of its importance as a transition year, when the number of course failures and behavioral problems appear to rise significantly and academic achievement declines (Smith 2006). Identifying students at the end of grade 9 who may be at risk of not graduating on time also allows time to intervene. On-time graduation—defined as earning a high school diploma within four years of entering grade 9 for the first time—has also been a focus of this line of research in the context of regulations stemming from the No Child Left Behind Act of 2001 (No Child Left Behind Act 2002).[6]

The CCSR on-track indicator identifies a student as on track for graduation at the end of grade 9 if the student meets two criteria:

- Earned enough credits to be promoted to grade 10.[7]

- Had no more than one semester "F" in a core course (English, math, science, and social studies).

A student who does not meet either or both of these criteria is classified as off track. Analysis of Chicago Public Schools data showed that 22 percent of students classified as off track at the end of grade 9 graduated from high school in four years, compared with 81 percent of their peers classified as on track (Allensworth and Easton 2005). The CCSR examined other indicators, such as grade 8 test scores and students' background characteristics, and found on-track status at the end of the first year of high school to be the most useful indicator of Chicago Public School students at risk of not graduating in four years.

The on-track indicator has been incorporated into the Chicago Public Schools accountability system and is used by district personnel to focus resources on students at high risk of not graduating on time (Allensworth and Easton 2005, 2007). Indicators (also referred to as early warning systems for identifying possible dropouts) using different combinations of multiple variables (including one or both of

the CCSR on-track indicator variables) have been developed or adopted in Baltimore (Mac Iver et al. 2008), Boston (The Parthenon Group 2007; Pinkus 2008), Dallas (Weir 2008; Oakeley and Weir 2010), Los Angeles (Lim and Pirone 2007), Philadelphia (Neild and Balfanz 2006; Neild, Balfanz, and Herzog 2007), and Portland, Oregon (Cielo and Leveen 2007). National High School Center publications help districts and schools construct an early warning system and recommend including the on-track indicator (Heppen and Therriault 2008).

The current study

The current study investigates use of the CCSR on-track indicator[8] with data from five school districts in Texas. These districts, which have established data systems and a strong interest in using on-track indicators, vary in grade 9 promotion policies and in student characteristics, such as race/ethnicity and socioeconomic status. Using historical data, a cohort of students was tracked from the end of grade 9 (in 2004/05) to the end of the 2007/08 academic year (the on-time graduation date for students in these cohorts). The study examines differences in on-time graduation rates between students identified as on track and those identified

as off track at the end of grade 9 overall and among specific student subgroups. The on-track indicator criteria were modified to reflect each participating district's grade 9 promotion policy during the 2004/05 academic year. This study is a first step in helping local districts and the Texas Education Agency develop an on-track indicator that accurately differentiates between students who do and those who do not graduate on time.

The current study used the on-track indicator to address two research questions for each participating district:

- How do students who are classified as on track and those who are classified as off track at the end of grade 9 differ in on-time graduation rates?

- How do students in specific subgroups who are classified as on track and those who are classified as off track at the end of grade 9 differ in on-time graduation rates?

Box 1 and appendix A describe the data sources and analysis. Appendix B describes the participating districts.

BOX 1
Study data and analysis

This box describes the participating districts, data sources, analytic sample, determination of on-track status and on-time graduation status, and the data analysis methods (see appendixes A and B for details).

Participating districts. The five participating districts were identified from previous collaboration with the researchers on a project on early warning indicators. Because the districts were not randomly sampled, the results of the study cannot be

generalized to all districts in Texas or in all Southwest Region states (Arkansas, Louisiana, New Mexico, Oklahoma, and Texas). The five districts are in the top 8 percent of Texas districts in enrollment and are in suburban or urban areas (Texas Education Agency 2008e). The districts vary in racial/ethnic composition (Texas Education Agency 2008a). One district has a majority Black student population, one has a majority White student population, and three districts have a majority or plurality Hispanic student population (see table B1 in appendix B). One district with large Hispanic and large White

populations closely resembles the racial/ethnic composition of Texas overall. Participation in the free or reduced-price lunch program ranges from 31.7 percent to 73.5 percent (the state average is 55.3 percent), and enrollment in bilingual/English as a second language programs ranges from 1.9 percent to 27.1 percent (the state average is 15.5 percent; Texas Education Agency 2008a). Three districts were rated academically acceptable in 2008, and the other two were rated recognized (Texas Education Agency 2008a).[1] (See appendix B for details on student characteristics and achievement for these districts.)

(CONTINUED)

BOX 1 (CONTINUED)
Study data and analysis

Data sources. The study used district-provided student-level data from the 2004/05, 2005/06, 2006/07, and 2007/08 academic years. Students in grade 9 in 2004/05 are the most recent cohort for which on-time graduation could be assessed with district data. District-provided data files included student characteristics, attendance records, enrollment status, and course records. An encrypted student identifier linked student records across datasets. Appendix A describes the data elements, including missing and discrepant data. Each district defines its own codes, so the five datasets were not standardized by code or data field. This presented a challenge to ensuring that the same variables were compared across districts and suggests caution in interpreting findings.

Analytic sample. The analytic sample includes all first-time grade 9 students in 2004/05 for whom complete course and graduation data were available. First-time grade 9 students were excluded from the analytic sample if their on-track status could not be identified at the end of grade 9 (students who transferred, dropped out, or had incomplete course data), if they died, or if they were enrolled in another public school system during

2005/06–2007/08 or moved abroad. Students in this last group are considered neither graduates nor dropouts (U.S. Department of Education 2008). Table A1 in appendix A details the number of excluded students from each district.

The sample for each district varies considerably in enrollment and student characteristics. The number of students in the analytic sample ranges from 1,401 students in District A to 4,720 in District E (see table B2 in appendix B). In all districts except District D, Whites are in the minority. The proportion of students participating in free or reduced-price lunch ranges from 21.7 percent to 58.8 percent, and the proportion with an Individualized Education Program (IEP, which specifies learning goals and activities for each student receiving special education services) ranges from 6.0 percent to 13.1 percent.

Defining on-track and off-track status. On-track status was determined for each student using grade 9 course data on credits earned and semester Fs in core courses. Students were identified as on track at the end of grade 9 if they earned the required number of course credits for promotion to grade

10 according to each district's policy and had no more than one semester F in a core subject (see appendix A for details). A student who does not meet either or both of these criteria is identified as off track (see table).

Defining on-time graduation. This study classified students as on-time graduates if they received one of Texas' three main types of diplomas (minimum,[2] recommended, or distinguished) or completed an IEP within four years of entering grade 9 for the first time. Students who earn a General Educational Development® (GED) certificate are not classified as high school graduates (Texas Education Agency 2008c) and are therefore counted as nongraduates (see appendix A for details).

Notes
1. The Texas Education Agency's four-level accountability system for rating school and district performance (academically unacceptable, academically acceptable, recognized, and exemplary; Texas Education Agency 2008f) is based on the percentage of students who pass the state annual assessment (Texas Education Agency 2008b).
2. Chicago Public Schools require 24 credits for graduation (Chicago Public Schools n.d.); the "minimum" diploma type in Texas requires 22 credits (Texas Education Agency 2008d).

Classifying students at the end of grade 9 as on track or off track for graduation by credits earned and number of semester Fs in grade 9, 2004/05

Number of semester Fs in core courses[a] in grade 9	Earned insufficient credits for promotion to grade 10	Earned sufficient credits for promotion to grade 10
2 or more	Off track	Off track
0 or 1	Off track	On track

a. English, math, science, and social studies.

Source: Authors' analysis of data described in text.

FINDINGS

This section presents findings on the percentage of grade 9 students who were on track and off track to graduate on time, overall and by student subgroup, and on the percentage of students who graduated on time. It then presents the findings for the two research questions.

Percentage of students who are on track and off track

Overall. In each district, a majority of first-time grade 9 students in 2004/05 were on track for graduation, with on-track rates ranging from 61.2 percent to 86.0 percent (table 1).

By student subgroups. On-track rates at the end of grade 9 by gender ranged from 69.2 percent to 90.4 percent for female students and from 53.4 percent to 81.6 percent for male students (table 2).

On-track rates by race/ethnicity ranged from 55.7 percent to 82.6 percent for Black students, from 59.3 percent to 80.5 percent for Hispanic students, and from 70.9 percent to 94.7 percent for White students.

On-track rates by participation in free or reduced-price lunch ranged from 53.3 percent to 78.9 percent for participating students and from 70.1 percent to 93.5 percent for nonparticipating students. On-track rates by special education status ranged from 23.5 percent to 74.7 percent for students with an Individualized Education Program (IEP) and from 66.2 percent to 87.7 percent for students without an IEP.

Overall on-time graduation rates

The percentage of first-time grade 9 students in the analytic sample who graduated on time in each participating district ranged from 63.7 percent to 75.3 percent (figure 1).

How do students classified as on track or off track at the end of grade 9 differ in on-time graduation rates?

In each district, a majority of first-time grade 9 students in 2004/05 classified as on track graduated on time (figure 2). On-time graduation rates ranged across districts from 69.6 percent to 84.5 percent. On-time graduation rates for off-track students

FIGURE 1

On-time graduation rates for first-time grade 9 students, 2004/05–2007/08

Graduated within four years (percent)
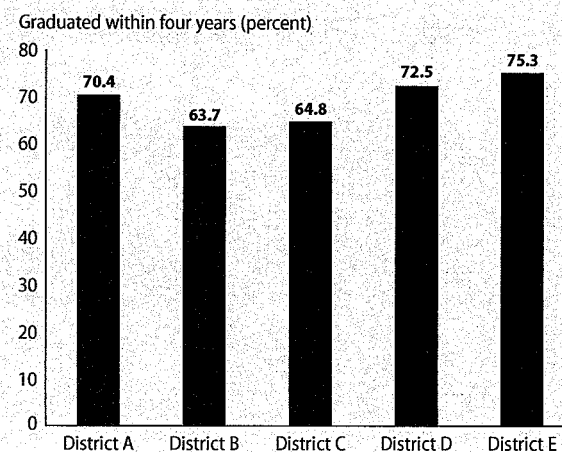
Note: Graduation rates were based on the students in the analytic sample (using the exclusion criteria described previously) and will not necessarily correspond to graduation rates calculated using different study samples or methods using different inclusion/exclusion criteria.

Source: Authors' analysis based on data described in text.

TABLE 1

On-track and off-track first-time grade 9 students by school district, 2004/05

| Value | District A | | District B | | District C | | District D | | District E | |
	On track	Off track	On track	Off track	On track	Off track	On track	Off track	On track	Off track
Percent	61.2	38.8	67.8	32.2	86.0	14.0	76.5	23.5	76.8	23.2
Number	857	544	1,110	527	1,687	275	2,251	691	3,626	1,094
Total	1,401		1,637		1,962		2,942		4,720	

Source: Authors' analysis based on data described in text.

TABLE 2
On-track and off-track first-time grade 9 students by student subgroup, 2004/05

Student subgroup	District A On track	District A Off track	District B On track	District B Off track	District C On track	District C Off track	District D On track	District D Off track	District E On track	District E Off track
Gender										
Female										
Percent	69.2	30.8	76.5	23.5	90.4	9.6	80.7	19.3	78.9	21.1
Number	476	212	622	191	890	95	1,184	284	1,826	487
Male										
Percent	53.4	46.6	59.2	40.8	81.6	18.4	72.4	27.6	74.8	25.2
Number	381	332	488	336	797	180	1,067	407	1,800	607
Race/ethnicity										
Black										
Percent	55.7	44.3	69.1	30.9	76.8	23.2	60.6	39.4	82.6	17.4
Number	517	411	268	120	229	69	109	71	289	61
Hispanic										
Percent	59.3	40.7	66.2	33.8	80.5	19.5	61.1	38.9	71.4	28.6
Number	83	57	690	352	675	163	343	218	1,917	767
White										
Percent	75.7	24.3	70.9	29.1	94.7	5.3	82.0	18.0	84.1	15.9
Number	228	73	124	51	753	42	1,728	380	1,286	243
Other[a]										
Percent	b	b	b	b	b	b	76.3	23.7	85.4	14.6
Number	b	b	b	b	b	b	71	22	134	23
Free or reduced-price lunch status										
Participating										
Percent	53.3	46.7	66.1	33.9	78.9	21.1	55.2	44.8	66.1	33.9
Number	439	385	622	319	797	213	352	286	1,228	631
Not participating										
Percent	72.4	27.6	70.1	29.9	93.5	6.5	82.4	17.6	83.8	16.2
Number	418	159	488	208	890	62	1,899	405	2,398	463
Individualized Education Program (IEP) status[c]										
IEP										
Percent	23.5	76.5	59.6	40.4	74.7	25.3	42.1	57.9	62.9	37.1
Number	39	127	96	65	192	65	98	135	178	105
No IEP										
Percent	66.2	33.8	68.7	31.3	87.7	12.3	79.5	20.5	77.7	22.3
Number	818	417	1,014	462	1,495	210	2,153	556	3,448	989
Total number of students	1,401		1,637		1,962		2,942		4,720	

Note: On-track and off-track percentages are calculated separately for each student subgroup (for example, male and female).

a. Includes American Indian and Asian students.

b. To protect student confidentiality, data are not reported for subgroups in which a district had fewer than 10 students classified as either on track or off track.

c. For Districts A–D, IEP status was determined by a binary IEP code in the student characteristics file. District E had no IEP code, so students were considered to have an IEP if they had a special education course indicated in their course history. Consequently, the reported number of students with an IEP in District E may be underestimated because it does not include students with an IEP who never took a special education course.

Source: Authors' analysis based on data described in text.

FIGURE 2

On-time graduation rates by on-track and off-track status, 2004/05–2007/08

Graduated within four years (percent) ■ On track ■ Off track
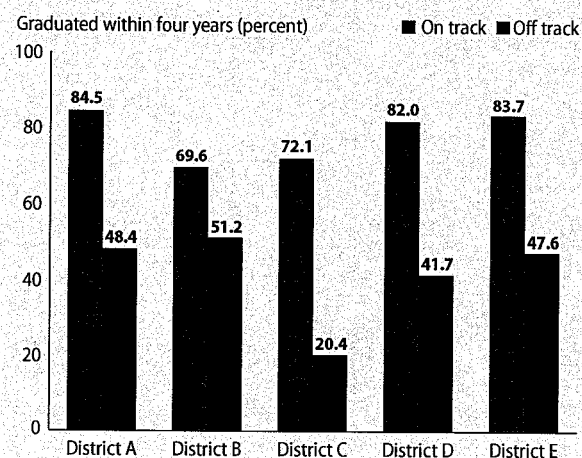
Source: Authors' analysis based on data described in text.

ranged from 20.4 percent to 51.2 percent. The difference in graduation rates between on-track and off-track students ranged from 18.4 percentage points to 51.7 percentage points across districts.

How do students in specific subgroups who are classified as on track or off track at the end of grade 9 differ in on-time graduation rates?

Within each district, female and male students classified as on track at the end of grade 9 generally graduated on time at a similar rate. The on-time graduation rates were 68.0–84.7 percent for on-track female students and 21.0–52.4 percent for off-track female students and 71.7–84.2 percent for on-track male students and 20.0–50.6 percent for off-track male students (table 3).

Within all racial/ethnic groups, the on-time graduation rate was higher for on-track students than for off-track students for all districts (see table 3). Across districts, there was more variability in graduation rates within racial/ethnic groups for off-track students than for on-track students. For example, the on-time graduation rates were 65.5–88.8 percent for on-track Black students and 20.3–60.0 percent for off-track Black students, 63.0–83.2 percent for on-track Hispanic students and 20.2–48.6 percent

for off-track Hispanic students, and 73.4–85.2 percent for on-track White students and 21.4–51.0 percent for off-track White students.

Among both students participating in free or reduced-price lunch and those not participating, on-track students in each district graduated on time at a higher rate than did off-track students (see table 3). For participating students, on-time graduation rates were 61.0–86.1 percent for on-track students and 19.2–53.0 percent for off-track students. For nonparticipating students, on-time graduation rates were 76.4–86.4 percent for on-track students and 24.2–51.9 percent for off-track students.

For students with and without IEPs, on-track students in each district also graduated on time at a higher rate than did off-track students (see table 3). For students with IEPs, on-time graduation rates were 51.6–71.8 percent for on-track students and 27.7–57.5 percent for off-track students. For students without IEPs, on-time graduation rates were 69.5–85.1 percent for on-track students and 18.1–51.7 percent for off-track students. The reported number of students with IEPs may be underestimated in District E because IEP status had to be determined by course type rather than by an identification code, as it was in the other districts. Caution is required when comparing on-time graduation rates by IEP status for District E with rates for the other districts.

CONCLUSIONS

The proportion of first-time grade 9 students on track to graduate in four years ranged from 61.2 percent to 86.0 percent across the five Texas districts in this study (see table 1). The original CCSR study in Chicago Public Schools found 59 percent of students to be on track[9] (Allensworth and Easton 2005). In all five Texas districts, on-track rates were higher for female students than for male students (see table 2), consistent with the CCSR study findings. In three districts, and consistent with the CCSR study findings,[10] on-track rates at the end of grade 9 were lower for Black and Hispanic students than for White students. In

TABLE 3
On-time graduation rates of on-track and off-track students by student subgroup, 2004/05–2007/08

Student subgroup	District A		District B		District C		District D		District E	
	On track	Off track	On track	Off track	On track	Off track	On track	Off track	On track	Off track
Gender										
Female										
Percent	84.7	51.4	68.0	52.4	70.4	21.0	81.9	44.4	83.8	48.2
Number	403	109	423	100	627	20	970	126	1,531	235
Male										
Percent	84.2	46.4	71.7	50.6	73.9	20.0	82.0	39.8	83.5	47.1
Number	321	154	350	170	589	36	875	162	1,503	286
Race/ethnicity										
Black										
Percent	88.8	51.6	83.2	60.0	65.5	20.3	78.0	42.2	81.7	45.9
Number	459	212	223	72	150	14	85	30	236	28
Hispanic										
Percent	79.5	47.4	63.0	48.6	64.9	20.2	80.5	44.5	83.2	46.5
Number	66	27	435	171	438	33	276	97	1,595	357
White										
Percent	75.4	30.1	73.4	51.0	80.5	21.4	82.3	39.7	85.2	49.8
Number	172	22	91	26	606	9	1,422	151	1,096	121
Other[a]										
Percent	b	b	b	b	b	b	87.3	45.4	79.8	65.2
Number	b	b	b	b	b	b	62	10	107	15
Free or reduced-price lunch status										
Participating										
Percent	86.1	53.0	64.3	50.8	61.0	19.2	72.2	37.1	78.4	44.7
Number	378	204	400	162	486	41	254	106	962	282
Not participating										
Percent	82.8	37.1	76.4	51.9	82.0	24.2	83.8	44.9	86.4	51.6
Number	346	59	373	108	730	15	1,591	182	2,072	239
Individualized Education Program (IEP) status[c]										
IEP										
Percent	71.8	57.5	70.8	47.7	51.6	27.7	68.4	44.4	61.8	54.3
Number	28	73	68	31	99	18	67	60	110	57
No IEP										
Percent	85.1	45.6	69.5	51.7	74.7	18.1	82.6	41.0	84.8	46.9
Number	696	190	705	239	1,117	38	1,778	228	2,924	464

Note: On-time graduation rates for on-track and off-track students are calculated separately for each student subgroup (for example, male and female).

a. Includes American Indian and Asian students.

b. To protect student confidentiality, data are not reported for subgroups in which a district had fewer than 10 students classified as either on track or off track.

c. For Districts A–D, IEP status was determined by a binary IEP code in the student characteristics file. District E had no IEP code, so students were considered to have an IEP if they had a special education course indicated in their course history. Consequently, the reported number of students with an IEP in District E may be underestimated because it does not include students with an IEP who never took a special education course.

Source: Authors' analysis based on data described in text.

two districts, however, the percentages of on-track students were comparable for Black students and White students. On-track rates in all five districts were higher for students not participating in free or reduced-price lunch than for students who were and for students who did not have an IEP than for students who did; results for these subgroups were not reported for the CCSR study.

In each district, first-time grade 9 students on track for graduation were more likely to graduate on time than were their off-track counterparts. The difference in on-time graduation rates for on-track and off-track students ranged from 18.4 percentage points to 51.7 percentage points (see figure 2). These results indicate that the CCSR on-track indicator, as adapted, does not differentiate as strongly between students who do and those who do not graduate on time in the five Texas districts as it did in the original CCSR study, which found a 59 percentage point differential.

For all student subgroups, first-time grade 9 students on track at the end of grade 9 were more likely to graduate on time than were their off-track counterparts, but how accurately the on-track indicator differentiated between students in each subgroup who did and did not graduate on time varied across districts.

A supplemental analysis of off-track grade 9 students suggests that students with sufficient credits for promotion but who are classified as off track because they have more than one semester F in a core subject are more likely to graduate on time than are students classified as off track for having insufficient credits or for having both insufficient credits and more than one semester F (see appendix C).

LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FUTURE RESEARCH

The findings in this report should be considered in light of several limitations. Suggestions for future research and analysis are also provided.

Study limitations

Study districts were not randomly selected and are not representative of all Texas districts. Participating districts were selected on the basis of collaboration with the researchers on a previous project that involved early warning indicators. The findings could differ in districts that have not been involved in previous work on performance indicators or that have different student profiles (particularly rural districts).

Only one on-track indicator was used in this study. Other on-track indicators might differentiate more accurately.

Suggestions for future research

The districts in this study differed in important ways from one another and in how accurately the on-track indicator differentiated between students who did and those who did not graduate within four years. Further research is needed to determine whether different indicators would improve differentiation between students who do and those who do not graduate on time for a wide range of districts in Texas. Research could also examine whether districts with different student characteristics require different on-track indicators to more accurately differentiate between students who do and those who do not graduate on time.

Additionally, to explore options for different on-track indicators, research could identify other variables for potential use in on-track indicators, such as attendance patterns and grade 8 achievement (as measured by standardized test scores). These on-track indicators could then be tested to determine whether they improve differentiation between students who do and those who do not graduate within four years. One possibility would be to examine individually the two variables that make up the CCSR on-track indicator; preliminary work on this is presented in appendix C.

APPENDIX A
STUDY METHODOLOGY

This appendix describes participating districts, data sources, construction of the analytic sample, determination of on-track status and on-time graduation status, and data analysis methods.

Participating districts

Five Texas school districts participated in the study. The districts were identified on the basis of previous collaboration with the researchers on a project involving early warning indicators. Because the districts were not randomly sampled, the study results cannot be generalized to all districts in Texas or to the states served by Regional Educational Laboratory Southwest (Arkansas, Louisiana, New Mexico, Oklahoma, and Texas). Appendix B contains demographic and student achievement information about these districts and examines how they compare with Texas overall.

Data sources

The study used district-provided data to assess how well the on-track indicator differentiates between students who do and those who do not graduate on time. Students who were in grade 9 in 2004/05 were the most recent cohort for which on-time graduation could be assessed with district data.

Each of the five participating districts provided separate files for enrollment, course data, and student characteristics for all first-time students in grade 9 in 2004/05. An encrypted student identifier linked student records across the three datasets. Enrollment records were provided for the 2004/05–2007/08 academic years, allowing researchers to track the cohort over time and determine on-time graduation status.

The enrollment files list each student's date of enrollment, date of withdrawal, reason for exiting the school, diploma type, and graduation date. The course data file lists all courses taken by a student

and the grade and credit earned. The student characteristics file contains data for gender, race/ethnicity, participation in the free or reduced-price lunch program, and Individualized Education Program (IEP) status. Course data and student characteristics were limited to the 2004/05 academic year because the study was concerned with students' course-taking behavior and characteristics in grade 9.

The data were examined for any out-of-range values, missing values, or other potential data errors. Errors were communicated to the appropriate district personnel, and the data were modified or corrected by district personnel.

Datasets were managed at the district level, with each district defining and monitoring its own codes and data fields. This lack of standardization presented challenges in ensuring that the same variables (for example, Individualized Education Program, or IEP, status) were being compared across districts, and caution is therefore required in interpreting some findings. Any study using district-level data from multiple districts will face similar challenges.

Determining the analytic sample

The analytic sample for the study includes all first-time grade 9 students during 2004/05 for whom complete course and graduation data were available. Only first-time grade 9 students are included because students who repeat grade 9 lack the number of credits required to be promoted to grade 10 and so are, by definition, already off track.

Enrollment and course data were used to construct the analytic sample. Table A1 summarizes the exclusions that were made in arriving at the final analytic sample.

Students whose on-track status could not be identified were excluded from the analysis. Because on-track status was determined by course-taking behavior calculated at the end of grade 9, students enrolled in grade 9 who did not appear in the

TABLE A1
Analytic sample exclusions

	Reason for exclusion	District A	District B	District C	District D	District E
Total number of first-time grade 9 students		**1,649**	**2,157**	**2,146**	**3,528**	**5,499**
Step 1. Exclusion of students whose on-track status could not be identified at the end of grade 9	No course data in course history data file	23	10	7	16	2
	Missing or discrepant[a] data	0	24	0	0	13
	Dropped out or transferred during grade 9	164	318	153	424	438
Remaining sample		**1,462**	**1,805**	**1,986**	**3,088**	**5,046**
Step 2. Exclusion of students who died	Death at any time from 2004/05–2007/08	1	0	0	0	2
Remaining sample		**1,461**	**1,805**	**1,986**	**3,088**	**5,044**
Step 3. Exclusion of students with confirmed enrollment in another public school system	Enrolled in another Texas district	46	17	22	73	55
	Enrolled in a school outside Texas	14	32	2	20	12
	Leave the country	0	119	0	53	257
Total number of students in final analytic sample		**1,401**	**1,637**	**1,962**	**2,942**	**4,720**

a. Data were considered discrepant when, for example, a course was identified as both passed and failed for a single student and no other variable (such as credit earned) could be used to establish which value was accurate.

Source: Authors' analysis of data described in text.

course data file were excluded from the analysis. Also excluded were students with missing or discrepant course data. Students for whom missing data made it impossible to calculate on-track status were excluded from the analysis. For example, if a student's semester course data did not include grades for two core courses and the number of semester Fs in core courses could not be determined, the student was excluded. In some cases, as with missing data for the pass/fail variable, on-track status was calculated using the students' other course data. And since on-track status is calculated at the end of the second semester of grade 9, students who left the cohort before the end of grade 9 were excluded. Students left for a variety of reasons, including enrolling in another school district, leaving the country, or being schooled at home. Next, students who died were excluded.

Finally, students who enrolled in another public school system or who left the country during the 2005/06–2007/08 academic years were excluded if those reasons could be confirmed.[11] These students are considered neither graduates nor dropouts.

Defining on-track and off-track status

On-track status. On-track status was determined from data on each student's grade 9 course history on credits earned and semester Fs received in core courses (English, math, science, and social studies). The variables are closely linked since no credits are earned for a failed course. The number of credits required for promotion to grade 10 varied across districts for the 2004/05 cohort.

On-track indicator variable 1: credits earned. The number of credits a student accumulated during grade 9 was calculated using course data provided by each district. Each student had multiple course records in the course data file—one for each course attempted. In District E, courses are recorded in year-long increments and associated with 1.0 credit; in the other districts, courses are recorded in semester increments and associated with 0.5 credits.

Each district's policy for the 2004/05 academic year was used to determine the number of credits

for promotion to grade 10: 6 for Districts A, B, and D; 5 for Districts C and E.

On-track indicator variable 2: semester Fs. Using course data provided by each district, the number of semester Fs in core subject courses was calculated for each student. The method for identifying a semester F varied by district:

- Districts A, B, and D used a pass/fail code for courses on a semester basis. A failure in a semester course was counted as one F.

- District C used both numeric grades and pass/fail codes for courses on a semester basis. For most course records, semester Fs were assigned based on numeric grades. Under district guidelines, any numeric grade below 70 was an F. For 58 of 28,606 course records, codes of P (passing) or S (satisfactory) were used to denote that students had passed the course and a code of I (incomplete) to denote that the student had not received credit for the course. All Is were counted as Fs.

- District E used a pass/fail code. However, because core course grades appeared to be recorded by year rather than by semester basis and students received one credit per course (rather than a half credit per semester as in the other districts), an F in a year-long core course was counted as two semester Fs. When core course records appeared as two separate records in the course history data file, indicating that the student had failed one semester of the course and passed the other semester, the student was assigned one semester F.

Determining on-track status. To be classified as on track, students had to earn the number of course credits required for promotion to grade 10 according to their district's policy for 2004/05 and have no more than one semester F in a core subject. Students who did not meet one or both criteria were classified as off track. Table A2 summarizes how on-track status was determined for each district.

Off-track status. A student who does not meet either or both of the criteria used to define on-track status is identified as off track. All off-track students fall into one of three mutually exclusive categories:

- *Off-track due to insufficient credits only.* This includes students who do not earn the required number of credits for promotion to grade 10 and have no more than one semester F in a core subject.

- *Off-track due to number of semester Fs only.* This includes students who have more than one semester F in a core subject and have earned the required number of credits for promotion to grade 10.

- *Off-track due to insufficient credits and number of semester Fs.* This includes students who have not earned the required number of credits for promotion to grade 10 and have more than one semester F in a core subject area.

Defining on-time graduation

This study considers a student to be an on-time graduate if the student enrolled in grade 9 during

TABLE A2

Promotion requirements and method of identifying course failures by district

Variable	District A	District B	District C	District D	District E
Number of credits required for promotion to grade 10	6	6	5	6	5
Method of identifying course failures	Pass/fail code	Pass/fail code	Numeric grade	Pass/fail code	Pass/fail code

Source: Authors' compilation.

the 2004/05 academic year, completed high school within four years (before October 2008), and received one of the three main types of diplomas awarded in Texas (minimum,[12] recommended, or distinguished) or completed the activities and goals detailed in an IEP. The state determines the minimum number of credits required to receive each type of diploma and describes the distribution of courses across content areas (Texas Education Agency 2008d). Students who earn a General Educational Development (GED) certificate are not classified as high school graduates (Texas Education Agency 2008c) and are therefore counted as nongraduates.

Enrollment data for 2004/05–2007/08 were used to determine on-time graduation status for each student. On-time graduation was determined for first-time grade 9 students included in the analytic sample using two variables: graduation degree type code and date of graduation.

On-time graduation variable 1: graduation degree type code. A graduation degree type code indicates which degree program a student completed. Students who completed the minimum, recommended, or distinguished high school program or completed an IEP were considered graduates. The codes are defined by the Texas Education Agency (n.d.). Table A3 summarizes the degree programs and graduation degree type codes relevant to this study.

On-time graduation variable 2: graduation date. If the student did not have a graduation code, the graduation date was used to determine on-time graduation status. Less than 1 percent of cases were determined in this way.

Data analysis

Several analyses were conducted to identify the percentage of students who were on track and off track in each district and the overall graduation

TABLE A3

Degree programs and corresponding graduation type codes

| Degree program | Total credits required | Selected course credit requirements | Other notes | Graduation type code | |
				Special education[a]	General education[b]
Minimum High School Program	22	• 4 English language arts credits • 3 math credits • 2 science credits • 2.5 social studies credits	Graduation under this plan requires the approval of the student's parents and high school administrator	18	24
Recommended High School Program	24	• 4 English language arts credits • 3 math credits • 3 science credits • 3.5 social studies credits • 2 foreign language credits • 1 fine arts credit		19	25
Distinguished Achievement Program	24	• 4 English language arts credits • 3 math credits • 3 science credits • 3.5 social studies credits • 3 foreign language credits • 1 fine arts credit	Students must complete four advanced measures	20[c]	26

a. Some graduating students who received special education services graduated with graduation type codes of 4, 5, 6, or 7, which reflect completion of an Individualized Education Program rather than a diploma type described in this table.

b. The general education codes in this table are those that apply to students entering grade 9 in 2004/05 (Texas Education Agency n.d.).

c. Although a Distinguished Achievement Program exists for students receiving special education and related services, no students in the analytic sample had such a graduation code.

Source: Texas Education Agency n.d., 2008d.

rate for each district. First, the percentage of first-time grade 9 students in 2004/05 classified as on track or off track within each district was calculated. Next, the percentage of students who were on track and those who were off track in each district was calculated for four student subgroups: gender, race/ethnicity, participation in the free or reduced-price lunch program, and IEP status. Finally, the percentage of all first-time grade 9 students (regardless of on-track status) who graduated on time for each district was calculated.

The percentage of first-time grade 9 students in 2004/05 who graduated on time was then calculated separately for students who were on track and those who were off track at the end of grade 9 (first research question). This analysis was replicated for the four student subgroups (second research question).

In addition, to better understand how the on-track indicator performed across the five districts, the on-time graduation rates were calculated for each category of off-track students (insufficient credits only, number of semester Fs only, and both criteria). This analysis, which is supplemental to the primary research questions, is provided in appendix C.

APPENDIX B
DISTRICT PROFILES

This appendix describes student characteristics and achievement for Texas statewide and for the individual districts that participated in this study. It also describes district characteristics for the analytic sample. The data are for the 2007/08 school year (when available), the expected year of on-time graduation for students in grade 9 in 2004/05.

District and state characteristics

The five districts in this study are large and densely populated (table B1). District E, the largest district in the study, was 1 of only 16 (of a total of 1,229) districts in Texas with more than 50,000 students in 2008 (Texas Education Agency 2008e). The other four districts are also among the largest in Texas. All five rank in the top 8 percent of the state in total enrollment. For example, 38 percent of districts in Texas have fewer than 500 students, and 59 percent have fewer than 1,000 (Texas Education Agency 2008e). The smallest district in this study (District A) had 19,277 students in 2008. Median enrollment at comprehensive high schools in the study districts ranged from 1,513 to 2,956 in 2008, well above the number of students in many Texas districts. All five districts in the study are in suburban or urban areas, compared with 10 percent of all districts in Texas (Texas Education Agency 2008e) .

The districts vary in racial/ethnic composition. District C most closely resembles the racial/ethnic composition of Texas overall, with large Hispanic (48.7 percent) and White (34.3 percent) populations (Texas Education Agency 2008a). The majority of students in District A are Black (64.6 percent), while Districts B and E have a majority of Hispanic students (71.4 percent and 63.1 percent). District D has a majority of White students (63.4 percent).

Participation in the free or reduced-price lunch program varies across the five districts, from 31.7 percent in District D to 73.5 percent in District B (Texas Education Agency 2008a). District C, at 58.1 percent, most closely approximates the 55.3 percent statewide enrollment. Participation in bilingual/English as a second language education programs varies even more. Enrollment in four districts (A, C, D, and E) is below the statewide rate of 15.5 percent, while enrollment in District B, at 27.1 percent, is above the state average. Participation in special education shows less variability and ranges from 9.1 percent (Districts A and D) to 12.5 percent (District C), close to the 10 percent statewide rate.

Three districts met federal adequate yearly progress standards for 2008 (Districts B, D, and E) and two did not (Districts A and C; Texas Education Agency 2008a). By comparison, in 2007 (the most recent year for which data are available), 87.5 percent of Texas districts met adequate yearly progress standards (Texas Education Agency 2008f). Districts B and E were rated recognized for 2008 based on state accountability standards, and Districts A, C, and D were rated academically acceptable (Texas Education Agency 2008a). In 2008, 26.8 percent of Texas districts were rated recognized, and 66.6 percent were rated academically acceptable (Texas Education Agency 2008f).

Data were also reported for student proficiency rates for reading/English language arts and mathematics and for teacher experience (Texas Education Agency 2008a). District B's student proficiency rates of 91 percent in reading/English language arts and 82 percent in math most closely approximate the overall Texas proficiency ratings of 91 percent and 80 percent. The experience of teachers in District D is closest to the average for Texas.

Characteristics of the analytic sample by district

Enrollment and student characteristics vary considerably across districts for students in the analytic sample (table B2).[13] The total number of students ranged from 1,401 in District A to 4,720 in District E. Except in District D, Whites constituted a minority of students. Although in three districts more than half of grade 9 students were participating in the free or reduced-price lunch program (a

TABLE B1
Select characteristics of participating school districts and all districts in Texas, 2008

Characteristic	District A	District B	District C	District D	District E	Texas
Location[a]	Other central city	Major suburban	Other central city	Other central city	Major urban	na
District enrollment	19,277	21,041	27,949	46,302	85,544	4,651,516
Median campus enrollment[b]	1,513	2,956	2,147	2,570	2,776	na
Enrollment by race/ethnicity (percent)						
Asian	3.2	1.3	1.8	3.4	3.3	3.4
Black	64.6	20.3	14.9	6.7	7.8	14.3
Hispanic	14.9	71.4	48.7	26.1	63.1	47.2
Native American	0.2	0.1	0.3	0.5	0.3	0.3
White	17.2	6.9	34.3	63.4	25.4	34.8
Enrollment by program participation (percent)						
Free or reduced-price lunch	69.1	73.5	58.1	31.7	47.4	55.3
Bilingual/English as a second language education	6.7	27.1	1.9	10.0	5.6	15.5
Special education	9.1	9.3	12.5	9.1	12.3	10.0
Student proficiency						
Met adequate yearly progress for 2007	No	Yes	No	Yes	Yes	na
District rating[c]	Academically acceptable	Recognized	Academically acceptable	Academically acceptable	Recognized	na
Met TAKS[d] reading/English language arts standard (percent)	88	91	90	95	94	91
Met TAKS[d] mathematics standard (percent)	73	82	77	89	84	80
Teacher experience (percent)						
Beginning	5.4	9.9	6.1	7.8	4.6	7.9
1–5 years	26.3	36.7	27.8	29.5	31.0	29.8
6 years or more	68.3	53.3	66.0	62.7	64.3	62.3

na is not applicable

Note: Percentages may not sum to 100 because of rounding.

a. Location classifications are based on Texas Education Agency reporting methods (Texas Education Agency 2008e). *Major urban* is "the largest school districts in the state that serve the six metropolitan areas of Houston, Dallas, San Antonio, Fort Worth, Austin, and El Paso." *Major suburban* is "other school districts in and around the major urban areas… [that are generally] contiguous to major urban areas." *Other central city* is "other school districts in and around the other large, but not major, Texas cities."

b. Based only on the comprehensive high schools in each district.

c. Refers to a district's classification in the state accountability rating system used by the Texas Education Agency to rate public schools and districts. There are four possible ratings: academically unacceptable, academically acceptable, recognized, and exemplary (Texas Education Agency 2008f).

d. TAKS, the Texas Assessment of Knowledge and Skills, is the annual assessment used in Texas to evaluate students in grades 3–11.

Source: Authors' analysis based on data from Texas Education Agency 2008a,e.

proxy for economically disadvantaged students in this study), the proportion ranged broadly, from 21.7 percent to 58.8 percent. Districts also varied considerably in the proportion of students in the

analytic sample with an IEP (used to identify students receiving special education services), ranging from 6.0 percent to 13.1 percent. District E used a different method to identify students

TABLE B2

Distribution of grade 9 students in the study sample by student subgroup, 2004/05

Student subgroup	District A Percent	District A Number	District B Percent	District B Number	District C Percent	District C Number	District D Percent	District D Number	District E Percent	District E Number
Gender										
Female	49.1	688	49.7	813	50.2	985	49.9	1,468	49.0	2,313
Male	50.9	713	50.3	824	49.8	977	50.1	1,474	51.0	2,407
Race/ethnicity										
Black	66.2	928	23.7	388	15.2	298	6.1	180	7.4	350
Hispanic	10.0	140	63.7	1,042	42.7	838	19.1	561	56.9	2,684
White	21.5	301	10.7	175	40.5	795	71.7	2,108	32.4	1,529
Other[a]	2.3	32	2.0	32	1.6	31	3.2	93	3.3	157
Free or reduced-price lunch status										
Participating	58.8	824	57.4	941	51.5	1,010	21.7	638	39.4	1,859
Not participating	41.2	577	42.5	696	48.5	952	78.3	2,304	60.6	2,861
Individualized Education Program (IEP) status[b]										
IEP	11.8	166	9.8	161	13.1	257	7.9	233	6.0	283
No IEP	88.2	1,235	90.2	1,476	86.9	1,705	92.1	2,709	94.0	4,437
Total number of students		1,401		1,637		1,962		2,942		4,720

Note: Percentages may not sum to 100 because of rounding.

a. Includes American Indian and Asian students.

b. For Districts A–D, IEP status was determined by a binary IEP code in the student characteristics file. District E had no IEP code, so students were considered to have an IEP if they had a special education course indicated in their course history. Consequently, the reported number of students with an IEP in District E may be underestimated because it does not include students with an IEP who never took a special education course.

Source: Authors' analysis based on data described in text.

with IEPs (a special education course listed in the student course history) than did Districts A–D (a binary code in the student demographic file). Consequently, District E data might underestimate the number of students with IEPs since students with an IEP who never took a special education course would not be included. Thus, caution should be used when comparing students with IEPs across districts.

APPENDIX C
OFF-TRACK ANALYSIS

Table C1 shows the percentages of grade 9 students who were off track to graduate at the end of 2004/05 by reason (insufficient credits only, number of semester Fs only, or insufficient credits and the number of semester Fs) and the percentage of students who were on track (shaded cells). For example, in District D, 76.5 percent of grade 9 students were on track at the end of 2004/05 and 23.5 percent were off track. The 23.5 percent of off-track students comprised 6.2 percent who earned insufficient credits only, 5.4 percent who earned two or more Fs only, and 11.8 percent who both earned insufficient credits and had two or more Fs.

In all districts, students who were off track because of insufficient credits only or both insufficient credits and number of semester Fs were less likely to graduate on time than students identified as off track because of insufficient credits only (figure C1). However, graduation rates among these students vary across districts. For example, in District C, 3.3 percent of students who were off track because of insufficient credits and number

FIGURE C1
On-time graduation rates by reason for off-track status, 2008
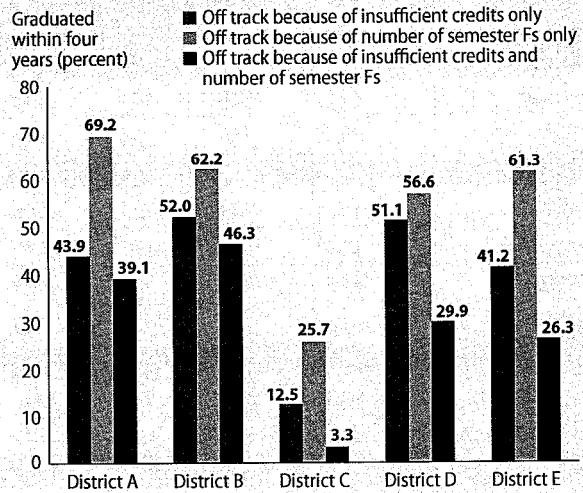
Source: Authors' analysis based on data described in text.

of semester Fs graduated on time, compared with 46.3 percent in District B. Within all five districts, students with sufficient credits for promotion but classified as off track because of the number of semester Fs were the most likely of off-track grade 9 students to graduate from high school on time.

TABLE C1
Percentage of first-time grade 9 students by number of semester Fs in core courses and number of credits earned, 2004/05

Percentage of students by number of semester Fs in core courses[a] in grade 9	District A (n 1,401)		District B (n 1,637)		District C (n 1,962)		District D (n 2,942)		District E (n 4,720)	
	Insufficient credits	Sufficient credits	Insufficient credits	Sufficient credits	Insufficient credits	Sufficient credits	Insufficient credits	Sufficient credits	Insufficient credits	Sufficient credits
Two or more	18.1	10.2	13.3	5.0	3.1	10.5	11.8	5.4	8.9	14.0
Zero or one	10.6	61.2	13.9	67.8	0.4	86.0	6.2	76.5	0.4	76.8

Note: Shaded cells show the percentage of students in each district who were on track. Percentages may not sum to 100 because of rounding. Sufficient credits are six or more for Districts A, B, and D and five or more for Districts C and E.

a. English, math, science, and social studies.

Source: Authors' analysis based on data described in text.

NOTES

1. Methods for estimating high school graduation rates typically compare the number of students who receive a diploma (graduate) with the number of students in the population for a given age or grade cohort. However, as methods define these populations differently, estimates of graduation rates vary—as indicated in subsequent endnotes—but all used data from the National Center for Education Statistics Common Core of Data.

2. Stillwell and Hoffman (2008) used the averaged freshman graduation rate method, which divides the number of graduates awarded regular diplomas by the size of the freshman class four years earlier; the freshman class size is determined using the average student enrollment data of a single cohort from grades 8, 9, and 10.

3. Swanson (2004, 2009) used the cumulative promotion index method, based on a ratio—averaged across several cohorts—of the number of grade 9 students to the number of students who graduate four years later.

4. Balfanz and Letgers (2004) used the promotion power method, which uses the ratio of the number of freshman to the number of seniors four years later.

5. An indicator may consist of one or more variables.

6. Some studies report on five-year graduation rates, but this study focuses specifically on on-time graduation rates.

7. In Chicago, students need five full course credits to be promoted from grade 9 to grade 10.

8. The term *on-track indicator* in the rest of this report refers to students being classified as on track or off track for graduation at the end of grade 9.

9. The 2005 CCSR study calculated on-track and off-track rates for several cohorts of students, but calculated on-time graduation rates only for the cohort of students who were first-time grade 9 students in 1999/2000. Therefore, for purposes of comparison, this discussion reports the on-track rate that corresponds to the 1999/2000 cohort (Allensworth and Easton 2005).

10. The on-track rates reported in the 2005 CCSR study for race/ethnicity were calculated for the cohort of students who were first-time grade 9 students in 2000/01 (Allensworth and Easton 2005).

11. Districts are required to document student withdrawals and to keep this documentation on file. For students who enroll in another Texas district, the Texas Education Agency provides confirmation to the districts (Texas Education Agency 2009). Additionally, the Texas Education Agency monitors this information and investigates anomalies.

12. Chicago Public Schools require 24 credits for graduation (Chicago Public Schools n.d.), which is higher than the 22 credits required for the "minimum" diploma type in Texas (Texas Education Agency 2008d).

13. The results of the analyses in the report are based on the final analytic sample of students for each district.

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