

At-a-Glance

KEY ISSUE

Research-based lessons from four high school specific programs offer insight on how to address the challenges of assisting students who enter high school with poor academic skills, improving instructional content and practice, creating a personalized learning environment, preparing students for the world beyond high school, and stimulating change in schools and districts.

Primary Findings

Overall, the studies indicate that instructional improvement and personalization are the twin pillars of high school reform.

The research from these studies suggests that extended class periods, special catch-up courses, high-quality curricula, and training for teachers in those curricula can improve student achievement.

Further, transforming schools into small learning communities and assigning students to faculty advisers can increase students' feelings of connectedness to their teachers.

Students who are behind academically when they enter ninth grade can make better progress if they receive special supports, including special courses designed to help them acquire the content knowledge and learning skills that they missed out on in earlier grades.

Emerging Evidence on Improving High School Student Achievement and Graduation Rates: The Effects of Four Popular Improvement Programs

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INTRODUCTION

There is emerging evidence based on rigorous evaluations about how low-performing high schools can boost student achievement and keep students on track for graduation. This issue brief draws on findings from four studies by MDRC, a nonpartisan, nonprofit research firm, that shed light on both the nature of the problems found in low-performing high schools and on the effectiveness of promising interventions that attempt to address those problems. Specifically, the lessons are based on evaluations of four high school reform models: Career Academies, First Things First, Project Graduation Really Achieves Dreams (GRAD), and Talent Development. These interventions were tested in 16 school districts.

Findings from these evaluations suggest that positive change is associated with a combination of instructional improvement and structural changes in school organization and class schedules. The brief is organized according to five cross-cutting challenges that high schools face in seeking to influence student outcomes:

- Assisting students who enter high school with poor academic skills
- Improving instructional content and practice
- Creating a personalized and orderly learning environment
- Providing work-based learning opportunities and preparing students for the world beyond high school
- Stimulating change in overstressed high schools

THE CHALLENGE

Policymakers, districts, schools, employers, and parents are alarmed by stubbornly high dropout rates, by the low academic achievement of many high school students, and by the large numbers of high school graduates who are required to take remedial classes in college.

The national graduation rate is estimated by some to be 68 percent, with nearly one third of all public high school students failing to graduate (Swanson, 2004). And in about 20 percent of high schools — largely those serving low-income African-American and Hispanic youths — graduation is no better than a 50-50 proposition. In fact, 46 percent of African-American

TAKE - AWAYS

State Level

States can use newly emerging research about what works in high school reform to guide policy and funding decisions. States may help districts evaluate their current high school initiatives, whether developed internally or with outside developers, to assure that curricular and instructional changes are aligned with state standards.

District Level

Strong support of a high school improvement initiative by the school district helps to ensure effective implementation and the reform's continuing existence. Schools need the support of skilled personnel to design, implement, and monitor reforms.

School Level

Structural changes are not sufficient to improve student achievement. Improved student outcomes may require changes to curricula, as well as ongoing teacher professional development linked to content.

students and 39 percent of Hispanic students attend high schools with about a 50 percent graduation rate (Balfanz & Legters, 2004).

Even those who graduate often face difficulties because they leave high school without the necessary skills and work habits needed to make a successful transition to postsecondary education and the labor market. By some estimates, while three quarters of high school graduates go on to some type of postsecondary education, within 8.5 years of graduation (U.S. Department of Education, 2005a), about 40 percent of these students must take at least one remedial course in basic English and/or math before they can move fully into their degree or certificate programs (U.S. Department of Education, 2005b). Additionally, more than 40 percent of high school graduates who start college leave without a certificate or degree (U.S. Department of Education, 2005c). These findings are especially troubling given recent research indicating that more than two thirds of new jobs created between 2000 and 2010 require postsecondary education, with the fastest growing, best paying jobs requiring the most education (Carnevale & Desrochers, 2003).

This issue brief synthesizes what has been learned from rigorous and large-scale evaluations of high school reform initiatives conducted by MDRC. It discusses four comprehensive initiatives — Career Academies, First Things First, Project GRAD, and Talent Development — that have grappled with the challenges of improving low-performing urban and rural schools. Career Academies, First Things First, and the Talent Development high school models are interventions that focus on ninth through 12th grades. Project GRAD is unique in that it attempts to deal with the full education pipeline organized around a feeder pattern structure with curricular reforms in the early grades and college scholarship and incentives at the high school level.

While all schools included in the four evaluations are low-performing — compared to other schools in their districts, state, and against national norms — some were facing extreme challenges. For example, only about one third of incoming ninth-grade students in nonselective high schools in Philadelphia, where Talent Development was scaled up, scored at grade level in reading and math. Also, First Things First schools in Houston were among the lowest performing in the district, with 50–70 percent of 10th graders scoring in the bottom quartile on a nationally normed reading assessment.

Together, these four interventions are being implemented in more than 2,700 high schools across the country, and various components of these models are being used in thousands more schools. (See the related sidebar for recommendations from the Comprehensive School Reform Quality Center and the Access Center about ensuring access for students with disabilities in school reform initiatives.)

THE CONTEXT

In the context of the focus on standards and accountability in the No Child Left Behind (NCLB) Act of 2001, there is growing concern about the state of low-performing American high schools. Under NCLB, high schools are required to make “adequate yearly progress” against state-defined standards that must take into account graduation rates and student progress in reaching proficiency in reading and math. For high schools that receive ESEA Title I, Part A funds, school districts and the schools themselves must take corrective actions if the schools do not make adequate yearly progress for two successive years, and schools that do not make adequate progress for five years must be restructured.

METHODOLOGY

Each of the four programs MDRC studied involved multiple components, which include both curricular and professional development changes to improve instruction and structural changes to improve personalization (for instance, creating small learning communities). (Table 1 briefly outlines key components of each intervention.)

To measure the effects of the Career Academies, which operate as schools within schools, the evaluation pioneered the use of an experimental design — the “gold standard” for assessing program impacts — that involved random assignment of eligible and interested students either to the career academy in their school or to the regular high school program. But because First Things First, Talent Development, and Project GRAD schools involved all students, random assignment of students was not appropriate, and random assignment of schools to program and control conditions was not feasible. For those studies, MDRC uses a “comparative interrupted time series” design, which is among the strongest nonexperimental designs being used to analyze the effects of high school reforms. The method entails comparing changes in student outcomes in the program schools between a baseline period and a followup period (generally before and after the intervention was instituted) with changes in outcomes over the same in similar nonprogram schools located in the same state (and preferably the same school district) as the program schools. The program’s effects are the differences between the changes in outcomes over time in the two sets of schools.

KEY POLICIES AND INTERVENTIONS

Lessons from the four programs offer insight on how to address the five major challenges listed above that low-performing schools confront.

Assisting Students Who Enter High School With Poor Academic Skills

Large numbers of students enter urban high schools poorly prepared for academic success. The Ninth Grade Success Academy, a form of small learning community that is the centerpiece of the Talent Development model, tackled this problem through interconnected changes in scheduling and curricula and produced positive results for many students. The Talent Development experience suggests the following lessons:

- **Double-blocked class schedules:** A double-blocked class schedule is useful because it permits students to attempt and earn more credits per year than other scheduling arrangements. In contrast to a traditional schedule that entails daily 50-minute classes or a single-blocked schedule with 80- or 90-minute classes meeting every other day, a double-blocked schedule calls for classes that meet daily for extended periods. Because double-blocked classes can cover a year’s worth of material in a single semester, students in Talent Development schools can earn four course credits each term and eight credits each year, compared with the six or seven credits per year that students can earn in schools following a traditional schedule.

KEY POLICIES AND INTERVENTIONS (CONTINUED)

- **Catch-up courses:** Semester-long intensive “catch-up” courses that strengthen ninth-grade students’ skills in reading and mathematics appear to help students succeed in the regular curriculum, with gains in credits earned being sustained over time. The catch-up courses in Talent Development awarded elective credits and were designed to precede and prepare students for college preparatory classes in English I and algebra. In a high school of 500 first-time ninth graders, Talent Development helped an extra 40 students complete a basic academic curriculum and an extra 55 students earn at least three credits in English and at least three credits in mathematics during their first three years of high school. Talent Development’s impact on the percentage of students who earned a credit for Algebra I, an important “gatekeeper” course for higher level mathematics courses, was a whopping 25 percentage points — or an additional 125 out of a 500-student freshman class.

CHALLENGES

- The structured curriculum of catch-up courses, combined with longer class periods, may have helped ensure that students spent more time on task in these classes. More time in the classroom may not in itself be enough to improve achievement; what appears to matter is that the extra time be used to maximize learning. Most First Things First schools made substantial progress in implementing longer English and math class periods. However, no special curricula were in place during the period under study, and most expansion-site schools did not register increases in student achievement.
- Little is currently known about how best to assist and prevent dropping out among students who struggle the most in ninth grade. Although the Talent Development model increased the rate of promotion to 10th grade, those students in Talent Development schools who were required to repeat a full year of ninth grade were more likely to drop out of high school than their counterparts in other schools. Different grouping arrangements and modes of instruction may be needed for repeating students.
- While the Talent Development gains are impressive, it is important to keep this progress in perspective. These very low-performing schools have a great deal left to accomplish to prepare all students for graduation, postsecondary education, and employment. In the Talent Development schools studied, a typical ninth grader will still miss about 40 days of school, nearly a third of ninth graders will not be promoted to 10th grade, and more than half will not be ready to graduate within four years.

Improving Instructional Content and Practice

Teachers in schools serving disadvantaged populations are often less experienced and less knowledgeable about the subjects they teach than teachers in more affluent communities (Jerald, 2002; Neild & Useem, 2002). The reforms that were studied have addressed questions about how to improve the content and delivery of what is taught through the use of new curricula and through professional development. Although only limited data link instructional improvement efforts to changes in student outcomes, the experiences of the program developers and of the participating schools and teachers suggest a number of operational lessons about putting instructional improvement efforts in place:

- **Well-defined curricula:** It may not be realistic to expect teachers to create their own curricula; instead, they are likely to benefit from well-designed curricula and lesson plans that have already been developed. For example, teachers in the First Things First study said that they had neither time nor training to integrate the theme of their small learning communities into their classes, and field research observations and interviews indicate that thematic instruction was uncommon.

KEY POLICIES AND INTERVENTIONS (CONTINUED)

- **Training on curricula:** Good advance training and ongoing coaching can help teachers make better use of even well-designed curricula. Teachers who received training on teaching Talent Development’s catch-up courses reported that the training had helped them deliver their lessons more effectively.
- **Aligning curricula:** There is suggestive evidence that professional development activities that involve teachers working together to align curricula with standards, review assignments for their rigor, and discuss ways of making classroom activities more engaging may help boost student achievement. The high school that the First Things First developer and researchers agreed had made most progress in developing teacher “professional learning communities” showed greater effects on reading achievement than did other schools.
- **Department-wide support:** Both academic departments and small learning communities should be regarded as key venues for instructional improvement. Although the small learning community is an appropriate setting for professional development directed toward improving pedagogical methods, teachers look to other department members as repositories of content expertise, and departments should therefore be incorporated into initiatives to improve instruction.
- **Instructional guides for teacher team meetings:** Researchers’ observations of teacher meetings in small learning communities revealed that without specific direction about how to spend their time together, teachers talked mostly about matters unrelated to instruction (such as discipline, individual students’ personal or academic problems, or upcoming field trips or parties). If administrators want teacher meetings to focus on instructional improvement, they must provide guidance about how to do this and follow up to ensure that meeting time is used productively. When administrators issued guidelines specifying that meetings were to focus on instruction — and when they sat in on these meetings — discussion centered on pedagogical concerns.

Creating a Personalized and Orderly Learning Environment

Changes in structure and functioning can help remedy the impersonality of large high schools:

- **Small learning communities:** Small learning communities, in which groups of students share the same cadre of core-subject teachers, help students feel that their teachers know and care about them, as student survey data from two evaluations attest. In the Career Academies evaluation, for example, 71 percent of students in the academy group gave a high rating on an overall measure of teacher support, compared with 62 percent of students in the control group.
- **Theme-based learning communities:** Both thematic small learning communities that encompass all four grade levels and separate Freshman Academies (see below) followed by theme-based communities for upperclassmen can play a role in increasing attendance and reducing dropout rates. First Things First, with its theme-based, four-year small learning communities, registered larger increases in attendance over time for high school students in the intervention’s home site of Kansas City, Kansas, than were found for students in other low-performing high schools in the state. The relative improvements in attendance ranged from an increase of three to 15 days per year, and these impacts were statistically significant in two of the four years of followup. Dropout rates also fell more sharply at the First Things First schools in Kansas City, Kansas, than at the comparison schools; impact estimates indicate that, out of every 100 students, three to six fewer students dropped out over the followup period.

KEY POLICIES AND INTERVENTIONS (CONTINUED)

- **Freshman Academies:** Talent Development, which places first-time ninth graders in separate freshman academies, achieved an impact on attendance equivalent to an average increase of about nine school days per year for each student in a Talent Development high school; the intervention also produced an eight percentage point impact on the rate of promotion to 10th grade.
- **Faculty advisories:** Faculty advisory systems can give students a sense that there is an adult in the school looking out for their well-being. Almost three quarters of First Things First students reported on surveys that their “family advocate” (adviser) was either “very important” or “sort of important” in giving them someone to talk to when needed, helping them do better on schoolwork, and recognizing their accomplishments. According to both teachers and program developers, training helped family advocates perform their roles more effectively.

CHALLENGES

- Implementing small learning communities is not easy; scheduling classes to ensure that they contain only teachers and students within the same small learning community can present a particular challenge. This problem is especially marked for students in the upper grades, who may want to take electives offered by small learning communities other than the one to which they belong.
- Implementing small learning communities will not, in and of itself, increase student achievement. It may help to do so, but the studies do not provide conclusive evidence on this point.

Preparing Students for the World Beyond High School

Students in low-performing schools need special assistance in preparing for postsecondary education and for better paying jobs. Among the initiatives considered in this brief, Career Academies and Project GRAD are most clearly oriented toward the goal of helping students prepare for productive futures after they leave high school. The studies of these two reforms suggest the following lessons:

- **Career awareness activities:** Earnings impacts for young men in the Career Academies appear to be linked to career awareness activities and work internship during high school. Young men in the Career Academies group earned in excess of \$10,000 more than control group members during the four years following their high school graduation. Participation in career awareness sessions and work internship most clearly differentiated the in-school activities of Career Academy students from those of their counterparts who were not in the academies, thus providing them with the experience and job references to give them a leg up in the labor market.
- **Structured partnerships with employers:** The Career Academies study suggests that the benefits of partnerships between high schools and employers can be more fully realized when these partnerships are more structured and when schools can designate a full-time staff member to serve as a liaison with employers. Students in Career Academies with more structured partnerships and with full-time liaisons reported higher levels of participation in career awareness and work-based learning activities than did students in academies where arrangements were less formal and where liaisons also had teaching responsibilities.
- **College scholarships:** The opportunity to qualify for a college scholarship is the cornerstone of the Project GRAD program. Scholarships are provided to students who graduate on time and complete a recommended curriculum while maintaining a 2.5 grade point average.

KEY POLICIES AND INTERVENTIONS (CONTINUED)

- **College preparation:** Project GRAD scholars must also participate in two summer institutes that take place on college campuses; the courses, taught by college faculty, are designed to enrich and/or remediate, as needed. A scholarship coordinator at each high school provides counseling, tutoring, and college admission preparation. In the high school where Project GRAD was implemented for 10 years, there was a small, positive impact on the proportion of students who completed a core academic curriculum, including four years of English, three of math, two of science, and two of social studies. However, Project GRAD did not have an impact on student outcomes in two other Houston high schools.

CHALLENGES

- Improving the academic components of Career Academies and Project GRAD may be needed to raise achievement on standardized tests and help students secure admission to college. Students in Career Academies did not register higher academic achievement than their nonacademy counterparts, nor were they more likely to graduate from high school, enroll in college, or earn a postsecondary credential. Field researchers found that core subject classes in the academies were very similar to those in the rest of the school. While seeing some improvement in course credits earned in its flagship school, Project GRAD did not produce impacts on graduation rates or other measures of high school student achievement.

Stimulating Change in Overstressed High Schools

Introducing change into high schools goes beyond the discrete challenges discussed above. The following implementation lessons, which primarily reflect the perceptions and judgments of program developers and researchers, are likely to apply not only to ambitious, large-scale reforms like the ones studied but also to less far-reaching efforts to introduce change into overstressed high schools.

- **Skilled leaders:** Creating effective change demands an investment of personnel resources. Whether personnel come from inside or outside a school or district, they must be skilled in designing reforms, putting them in place, and monitoring ongoing operations.
- **External education services providers:** When deciding whether to adopt a comprehensive reform model or add new components to existing programs, school and district administrators should consider the adequacy of what is already in place and the capacity of local personnel to envision and implement change. The fewer the reform elements already in place and the more limited the capacity of local staff, the more sense it may make to turn for assistance to the developers of comprehensive models.
- **School district support:** Strong support of an initiative by the school district helps to ensure effective implementation and the reform's continuing existence. In Kansas City, Kansas, where First Things First was inaugurated, the central office leadership both exerted pressure on the schools to operate in conformity with the initiative's guidelines and supported the schools' efforts to do so. In contrast, the School District of Philadelphia initially welcomed Talent Development, but it never formally endorsed the initiative, and some of its actions (for example, funding reductions and the introduction of a new standardized curriculum) undercut the program model. Policymakers and administrators should avoid jumping from one reform to the next; they should stay the course until initiatives have been put in place long enough and well enough for their effectiveness to receive a fair test. Research indicates that comprehensive reforms in place for five years or more had stronger impacts than those with briefer periods of implementation (Borman et al., 2003).

THE BOTTOM LINE

The larger lesson of this synthesis is that structural changes to promote personalization and instructional improvement are the twin pillars of high school reform. Small learning communities and faculty advisory systems can increase students' feelings of connectedness to their teachers. Especially in interaction with one another, extended class periods, special catch-up courses, high-quality curricula, pre-service and in-service training on these curricula, and efforts to create professional learning communities can improve student achievement. Furthermore, school-employer partnerships that involve career awareness activities and work internships can help students attain higher earnings after high school.

A further message is that students who enter ninth grade facing substantial academic deficits can make good progress if initiatives single them out for special support. These supports include caring teachers and special courses designed to help entering ninth graders acquire the content knowledge and learning skills that they missed out on in earlier grades.

Whether districts and schools adopt an existing comprehensive reform initiative or put together the elements of a comprehensive intervention on their own, much has been learned about what is needed, what seems to work, and what does not work. What remains is to make sure that practitioners have the support they need to put that learning into practice.

CAVEATS

Each of the four models that MDRC studied involved multiple components. Each program, too, featured a philosophy or theory of action that linked the various components into a coherent whole that program developers believed would be more than the sum of its parts, and the developers offered considerable technical assistance about how best to put the components in place. MDRC's evaluations of these programs built on rigorous research designs using comparison or control groups, and they provide unusually strong evidence about the interventions' effects on attendance, academic achievement, persistence in school through graduation, and postsecondary education and labor market outcomes. But these impacts reflect the combined effects of all the components, packaged in a particular way by the programs' developers. For districts and schools interested in replicating a comprehensive school reform, turning to one of MDRC's reports on these models would be a good first step.

Recognizing that principals and other educators, decision-makers, and policy-makers may not want to join forces with a comprehensive school reform model but still want informed advice about how to fill in the missing pieces in their existing reform strategies, this issue brief synthesizes the findings of the original studies as they relate to five common challenges that are associated with low-performing high schools. Researchers sought to draw reasoned conclusions about the role that particular program components played in addressing each challenge. Sometimes the developers' own theories on how a specific component was intended to ameliorate a specific condition made the task easier; for example, three of the program developers saw small learning communities as a response to the problems of anonymity and impersonality that often afflict large comprehensive high schools. In other cases, there was direct support for the conclusions from teacher and student surveys and field research. And in still other cases, the conclusions reached were a matter of logic; for example, small learning communities were present in all schools in three of the interventions but effects on achievement were registered in only some of them, so one could not conclude that small learning communities, in and of themselves, produce effects on achievement.

Because each program is more than the sum of its components, conclusions about particular aspects of the initiatives can never be as solid as conclusions about the effects of the programs as a whole. Indeed, all the lessons in this brief should be viewed as judgments, not facts — albeit judgments grounded in evidence.

TABLE 1

Key Program Features of the Four High School Reform Initiatives
<p>Career Academies http:// www.ncacinc.org</p> <ul style="list-style-type: none"> • “School-within-a-school” structure • Integrated academic and occupational curriculum • Employer partnerships providing career awareness activities and work internship
<p>First Things First http://www.irre.org/ftf/</p> <ul style="list-style-type: none"> • Schoolwide, theme-based small learning communities • Family Advocate System (faculty advisory program) • Instructional improvement efforts
<p>Project Graduation Really Achieves Dreams (Project GRAD) http://www.projectgrad.org</p> <ul style="list-style-type: none"> • Project GRAD scholarships go to students meeting achievement and participation goals • Summer institutes on college campuses designed to enhance academic skills • Parental and community involvement to encourage participation and build college awareness • Social services and academic enrichment programs at the school site • Classroom management program • Additional interventions in the “feeder schools” of participating high schools
<p>Talent Development http://www.csos.jhu.edu/tdhs/</p> <ul style="list-style-type: none"> • Ninth Grade Success Academy • Career Academies for students in Grades 10 through 12 • Extended block schedule • Catch-up courses in reading and math for ninth graders with low skills

ENSURING ACCESS TO SCHOOL IMPROVEMENT PROGRAMS FOR STUDENTS WITH DISABILITIES

The Individuals With Disabilities Improvement Education Act of 2004 calls for educational services to be delivered in the least restrictive environment, which typically places students with disabilities in general education classrooms. Therefore, educators at all levels need to be equipped to address the education needs of a broad range of learners, including those with cognitive, emotional, and physical disabilities. School reform and improvement models often offer educators opportunities to implement whole school improvement initiatives that can address the needs of students with disabilities within the general education setting.

Educators who turn to the types of external improvement programs featured in this issue brief should assess those models for their ability to provide access to students with disabilities. The Comprehensive School Reform Quality Center (CSRQ Center) and the Access Center, a national technical assistance center funded by the U.S. Department of Education's Office of Special Education Programs, recently produced a report with recommendations to help decisionmakers ensure that students with disabilities benefit from school improvement and reform initiatives.¹

According to this report, the features of school improvement programs found to most directly impact student achievement for diverse populations include organization and governance, curriculum and instruction, scheduling and grouping, technology, the monitoring of student progress and performance, family and community involvement, professional development, and technical assistance.

The report identifies a variety of factors that help school improvement models provide access to students with disabilities, including:

- Buy-in of special education personnel before the school or provider enters a contract. It is also important that professionals who are knowledgeable about teaching disabled students are represented on the school's improvement teams. Additionally, the model's onsite facilitator should be knowledgeable regarding issues related to special education.
- Incorporation of instructional strategies recommended for students with disabilities, such as basing instruction on unique needs, small-group instruction, cooperative learning, and multi-tiered instruction. For students with disabilities, who may have attention problems, adopting innovative teaching and learning methods, such as using the Internet, may facilitate the engagement of students in classroom content.
- Support for teacher training and for the use of instruction in mnemonics, graphic organizers, concrete-representational-abstract approach, differentiated instruction, and computer-assisted instruction to help students with disabilities access the general education curriculum.
- Promotion of flexible grouping by interest and readiness level within a classroom context of high expectations for all.
- For some students with disabilities, technology is essential to provide access to all educational opportunities. It is important for schools implementing improvement models to draft policies related to Universal Design for Learning (UDL) and assistive technology. UDL is a theoretical framework to guide the development of curricula that are flexible and supportive of all students.

¹These recommendations are not part of the MDRC evaluations of four high school improvement models. The report from the CSRQ Center and the Access Center can be found at <http://www.csrq.org/documents/EnhancingtheParticipationofStudentswithDisabilitiesinCSRModels.pdf>

ENSURING ACCESS TO SCHOOL IMPROVEMENT PROGRAMS FOR STUDENTS WITH DISABILITIES (CONTINUED)

- Assessment methodologies that include a wide range of methods to accommodate diverse learners.
- Outreach to families of students with disabilities, including inviting them to join planning teams and training sessions.
- Training materials and professional development activities that include information designed to increase awareness about issues related to special education services. Training in screening assessments to identify student readiness levels and learning styles is also beneficial to students with disabilities.

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