

School Reform and College Access Success: A Review

A summary of:

How Is School Reform Tied to Increasing College Access and Success for Low-Income and Minority Youth?



PATHWAYS
TO COLLEGE
NETWORK

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Introduction

Few American institutions have a greater impact on the quality of life for American citizens than the public high school. High school is a pivotal institution that lays the foundation for adult participation in the American economy and civil society. The technological and scientific advances of the 21st century demand that high school graduates be both competent in high-level skills and prepared to attain postsecondary education. Consequently, greater demands have been placed on high schools to prepare adolescents for both the workforce and higher education. However, the American public high school as an institution has remained essentially unchanged for over half a century in spite of these changing educational demands.

Although greater numbers of students are enrolling in college today than 20 years ago, the rates of college enrollment for African American and Latino students remain considerably lower than those of white and Asian students. Of the 75 percent of high school graduates who enroll in two- or four-year colleges, only about 35 percent complete a bachelor's degree. In comparison to white students, far fewer minority students—as a percentage of the overall 18–24-year-old population—go to college (Carnevale & Fry, 2000). Moreover, the high school dropout rate for African American and Latino students continues to be unacceptably high. According to the National Center for Education Statistics (Kaufman, Alt, & Chapman, 2001), 13.1 percent of African American students and 27.8 percent of Latino students drop out of high school. Other studies report that urban districts with predominantly minority student populations have dropout rates near 50 percent (Balfanz & Legters, 2004; Greene, 2003; Greene and Forster 2003 or Greene 2002).

Among those who do enter postsecondary education, many are ill-prepared academically. Up to 46 percent of students who enter higher education and some 60 percent of students who attend community colleges must first enroll in remedial, non-credit-bearing courses and programs (Kirst & Bracco, 2004). Some of the reform efforts of the last 20 years have helped increase the number of students—minority and low-income minority students in particular—who enroll in college or other postsecondary institutions. Yet, in order for high school reform to effectively address the issue of college access for all students, efforts must focus on college preparation, on use of the best components or practices of existing school reform efforts, and on addressing the predictors of college enrollment.

Predictors of College-Going Behavior

Multiple research studies (Adelman, 1999; Alexander, Pallas & Holupka, 1987; Cabrera & La Nasa, 2000a and 2000b; Horn & Kojaku, 2001; Kane & Spizman, 1994; McDonough, 1997; Stage & Rushin, 1993) have demonstrated the following as the strongest predictors of college attendance and completion, particularly for minority and low-income students:

- academic preparation,
- social support,
- access to information,
- parental involvement and knowledge about college, and
- financial aid.

Academic preparation is the most significant predictor of college success. Adelman (1999) determined that college completion is most likely when students take high-intensity and high-quality coursework during high school. He suggested that high-quality coursework should prepare students with the information and skills that higher education institutions would expect of them prior to entrance. Such coursework includes Advanced Placement courses and mathematics classes beyond Algebra II. Adelman (1999) noted that enrollment in such courses not only prepares students for college, but also helps students complete college prerequisites, such as receiving a high school diploma and taking college entrance exams. Although Adelman and others have verified that a strong academic program is the single greatest predictor of academic achievement and college success for African American and Latino students, minority students are overrepresented in non-college preparatory programs (Berkner & Chavez, 1997; Gamoran, 1987; Oakes, 1985; Oakes & Lipton, 1992).

Lack of college information and social and cultural capital to understand the academic work and college application processes necessary to plan and pursue postsecondary education is a major hurdle of students of color and those from low-income families (Noguera, 2001; Wimberly & Noeth, 2004). For these students, increasing academic rigor alone will not raise college-going rates; they need social support from the school as well (King, 1996; McDonough, 1997).

According to McDonough (1997), students require access to information about the college application process and help in course selection throughout high school. Cabrera and La Nasa (2000b) concur, finding that the college preparation process has three steps, the first of which involves developing college and career aspirations among students.

A school's promotion of social networks supportive of students' academic and emotional development can also determine their likelihood of going to college (Berkner & Chavez, 1997; Cabrera & La Nasa, 2000a; McDonough, 1997). Peers may support their peers' participation in school activities, personal decisions to stay in school, and development of career or college identities (Gandara, 1999; Romo & Falbo, 1996). Research suggests that students who have higher beliefs in their ability to succeed are more pro-school and have higher aspirations in schools in which relationships with teachers are developed and

teachers appear as caring and supportive (Bryk & Driscoll, 1988; Bryk, Lee, & Holland, 1993; Lee & Burkham 2003; Croninger & Lee, 2001; Fine, 1991; Lee, Ready, & Ross, 1999; MacLeod, 1987; McLaughlin, 2000).

Thus, the predictors of college-going behavior can be embedded in high school reform strategies to increase student achievement and college preparedness and success for underserved students. In fact, these same predictors comprise many of the high school restructuring elements that have evolved over the past two decades. School restructuring efforts at the high school level have centered on the reorganization of academic and social structures to ensure academic press (including a strong organizational push with a normative emphasis on academic success and conformity to specific standards of achievement) and social support. This may be seen in a variety of strategies focused on the following structural elements:

- curricular offerings,
- academic norms and expectations,
- availability of human and physical resources that support students' academic achievement,
- quality of relationships among teachers and staff, and
- quality of social relations between students and teachers.

The key education reform recommendations and restructuring strategies that emerged during the 1980s have served as the foundation for a variety of reform strategies that have surfaced over the past two decades. However, it is unclear whether significant progress has been made in improving academic achievement, particularly for students of color and those from low-income families. Of particular concern is the dearth of data that suggests that as a result of school reform, these students have experienced dramatic changes in student achievement; nonetheless, college access preparedness.

This review will focus on the first two predictors of college attendance and completion, academic preparation and social support, and their relationship to high school reform.

Increasing Academic Rigor Via the Curriculum

As suggested, the rigor of courses taken in high school is the most powerful predictor of academic achievement, high school graduation, and enrollment in postsecondary education (Adelman, 1999; Braddock, 1990; Gamoran, 1987; Oakes, 1987). A strong academic program is particularly significant for college enrollment among African American and Latino students (Adelman, 1999). Additionally, research has demonstrated that students who take more intense academic programs in high school attend and persist in higher education at a greater rate than students who take less difficult programs of study (Fry, 2004; Herold, 2003).

Tracking—the practice by which students are separated into classes based on perceived ability—is prevalent in American public comprehensive high schools despite years of critical review, thereby undermining the prevalence of any form of academic press within a school. Racial and ethnic minority students are disproportionately distributed among

these lower academic tracks and ability groups (Braddock, 1990; Berkner & Chavez, 1997; Gamoran, 1987; Oakes, 1985; Oakes & Lipton, 1992; Thomas, 2000). As a result, these students have limited access to knowledge, differentiated instructional quality, and lower expectations.

A common anti-tracking strategy is to focus on increasing access to rigorous courses through the availability of a “core” academic curriculum, which provides all students with the same academic knowledge. A core curriculum offers less variability in course-taking patterns by students, thereby ensuring all students experience a normative emphasis on academic success and conformity to specific standards of achievement.

Aligning Curricula with College Entry Requirements

Research has determined that mathematics achievement serves as a “gate-keeper” to college attendance (Adelman, 1999; Checkley, 2001; Gamoran & Hannigan, 2000). The work of Robert Moses with the Algebra Project has demonstrated that if students do not successfully complete Algebra, they are unlikely to succeed in institutions of postsecondary education (Checkley, 2001). A number of recent initiatives focused on increasing mathematics and science achievement for low-income students and students of color.

EQUITY 2000

www.collegeboard.com/about/association/equity.html

Developed by The College Board in 1990, EQUITY 2000 worked with six school districts across the country to increase access to a rigorous course curriculum for low-income and minority youth. In EQUITY 2000 schools, students were expected to complete Algebra by 9th grade and Geometry by 10th grade. Teachers used National Council of Teachers of Mathematics standards as a basis of instructional practice, and were provided with professional development activities, as were counselors and principals. The number of students who successfully completed Algebra, enrolled in higher-level mathematics courses such as Algebra II, Trigonometry, Pre-Calculus, Calculus, or a higher level math course, and took college entrance exams and AP courses and tests increased at the pilot sites. Furthermore, after six years of implementation, more students reported that they intended to attend college than had done so before the introduction of EQUITY 2000 (College Board, 2000a).

Urban Systemic Initiative (USI)

www.systemic.com/usi/booklet.htm

Launched by the National Science Foundation (NSF) in 1991, USI was designed to provide low-income and minority youth with increased access to rigorous curriculum in mathematics and science. As a result of USI implementation, the disparity between African American and white student enrollment and between Latino and white student enrollment decreased in gate-keeping and higher-level mathematics courses. Similar results were found for gate-keeping and higher-level science classes. The disparity between African American and white student enrollment and between Latino and white student enrollment in Biology,

Chemistry, Physics, and Integrated Science I-III also decreased (Kim et al., 2001). Additionally, the number of students who took the AP mathematics test in USI schools increased in 1997–1998. Almost all cohorts showed increases in the number of minority students taking the SAT or ACT, and nearly all exceeded the national test-taking average (Kim et al., 2001).

Advanced Placement (AP)

www.collegeboard.com/student/testing/ap/about.html

Since the mid-1950s, The College Board has administered the Advanced Placement (AP) program, which offers another example of attempts to increase access to a rigorous curriculum. AP courses provide students with college-level curriculum while still in high school. As well, students who earn an acceptable grade on the AP test often receive college credit for that particular course.

Access to AP courses is still limited with 43 percent of high schools not offering any AP courses and 34 percent of students in AP courses not taking the exams. These figures are disproportionately magnified in urban, rural, and poor areas of the country (College Board, 2000b). The positive impact of the AP program, where it exists and functions well, on students' academic success is widely recognized. By providing necessary knowledge and skills, AP programs have helped raise students' level of awareness and preparation for the future challenges of higher education, thus improving access and success at the postsecondary level.

Reforms That Address Academic and Social Support

While some reform efforts of the 1980s were concerned solely with increasing academic achievement, others called for the reorganization of both the academic and social structures of high school. The goal of restructuring is to increase students' learning opportunities and to provide appropriate support for them to realize their academic potential. While the intent of restructuring is not to increase college-going rates and preparedness of underserved students per se, it does offer the potential to do so.

To help with restructuring, many institutions of higher education and educational organizations have developed models that can be implemented in schools and school districts. These models provide restructuring plans based on the developers' visions or definitions of an effective high school. Each of the models below alters the academic structure of high schools to ensure the prevalence of academic rigor in the curriculum and high academic expectations for student achievement. Each also changes the social structure to provide increased support for students.

America's Choice

www.ncee.org/acsd/program/index.jsp

America's Choice was designed by the National Center for Education and the Economy to raise academic achievement and prepare all students for college through a rigorous standards-based curriculum and the provision of safety nets (Supovitz, Poglinco & Snyder,

2001). It is designed to help students reach internationally accepted standards in English, mathematics, and science. To do this, America's Choice integrates a standards-based curriculum focused on basic skills and knowledge, as well as concepts and applications. A key component of the model is a process to quickly identify students who are falling behind and help them make gains. Although there are currently no data to show the success of America's Choice in high schools, evaluators at the Consortium for Policy Research in Education (CPRE) have indicated that students at elementary and middle schools implementing the model are performing at higher levels than their peers in non-America's Choice schools and perform better than the state average on state assessments (Supovitz et al., 2001).

Advancement via Individual Determination (AVID).

www.avidonline.org

The Advancement via Individual Determination (AVID) program was developed to prepare underachieving students, defined as those with a C average, for a four-year college education. The AVID program is centered on an AVID class, where students learn basic skills such as note-taking, test-taking, study skills, time management, effective textbook reading, research skills, and college entrance exam preparation. Students are also given instruction in an AVID-developed writing-to-learn process, critical inquiry, and techniques for collaborating with other students. AVID students in the class of 2004 in the San Diego City Schools passed the California High School Exit Exam (CAHSEE) in math and reading at higher rates than non-AVID students. Data show that this improvement was especially significant for African American and Hispanic students.

High Schools That Work (HSTW)

www.sreb.org/programs/hstw/hstwindex.asp

Sponsored by the Southern Regional Education Board, HSTW is designed to “improve the communication, mathematics, science, technical, and problem solving skills of career bound youth” and “to close by one third the gap in reading, mathematics, and science achievement between career bound students and college preparatory students nationally” (Southern Regional Education Board, n.d; Bottoms & Mikos, 1995). HSTW's central practices include holding students to high expectations¹, increasing the rigor of vocational and academic studies, basing students' course-taking on an academic core and a vocational major, integrating work-based learning and academic curricula, providing students and their families with guidance and extra help in accomplishing their goals, and using assessment data to help students stay on track to graduation. Based on standardized tests (NAEP assessments), student surveys, class enrollment, student persistence to graduation, the taking of college entrance exams (ACT and SAT), schools and students who participate in the HSTW program have shown improvements in performance (Southern Regional Education Board, n.d.; Bottoms & Mikos, 1995).

¹ High Schools That Work defines high expectations as having at least four of five actions: teachers 1) state the amount and quality of work necessary for a student to earn an “A” or “B”; 2) are available to help students with their studies; 3) require one or more hours of homework per day; 4) insist on several revisions to improve the quality of students' work; and 5) expect students to work hard to meet high standards.

Talent Development High Schools (TDHS)

www.csos.jhu.edu/tdhs

The TDHS model was developed by the Johns Hopkins Center for Research on the Education of Students Placed at Risk (CRESPAR) to help schools prepare all students to succeed in a high-standards curriculum and in their careers. TDHS primarily targets schools that face serious problems with student attendance, discipline, achievement scores, and dropout rates. A central feature of TDHS is smaller learning communities that create more personalized learning environments. TDHS has demonstrated positive effects on school climate and student attendance, achievement, promotion, and dropout rates (McPartland, Balfanz, Jordan, & Legters, 1998). Ninth grade students improved their 8th - grade Stanford 9 mathematics scores by an average of 3.5 NCEs (normal curve equivalents) in TDHS programs, compared to control students whose scores fell by an average of 0.2 NCEs. The model ensures that students have a consistent network of teachers and peers from which to draw support and guidance, which is especially necessary for low-income, first-generation college attendees and minority youth who have not had strong enough support or guidance at school. The program also holds all students to the same high expectations and provides the support that enables students to meet them.

First Things First (FTF)

www.irre.org/ftf

The Institute for Research and Reform in Education (IRRE) developed First Things First (FTF) to improve educational outcomes for all students, particularly students in high-poverty areas. The FTF model is based on principles of developmental psychology that address the need for humans to feel competent, autonomous, and related, and the premise that meeting such needs in social contexts promotes positive development. Students and teachers are grouped in small learning communities (SLC) and stay together for multiple years with staff being redistributed during core instruction (initially language arts and math). FTF tries to keep a student-to-adult ratio of 15:1 for as much time as possible. FTF also uses a family advocacy system in which every student is assigned a staff member who works with the student, family, and teachers throughout the four years of high school. Because this is a new program, research-based findings are limited, but point to success.

Coalition of Essential Schools (CES)

www.essentialschools.org

In the Coalition of Essential Schools (CES) schools are designed to create strong relationships between and among students and adults. CES principles emphasize strong relationships that can provide strong academic and social support to students and the value of family participation and teacher collegiality in the education of children and adolescents. Urban schools such as Central Park East, The Met, Urban Academy, and others have been successful in increasing student learning and college attendance, particularly among low-income and minority students (Raywid, 1994). The majority of CES schools (78 percent) require students to take rigorous course loads, including three or more years of each core curricular area (English, math, science, and social studies). In their study of the Julia

Richman complex in New York City, which houses five small CES schools, Darling-Hammond, Aness, and Ort (2002) found that graduation and college-going rates were significantly higher than they were citywide. In addition, dropout rates were considerably lower than in similar schools and in schools citywide (Darling-Hammond, Aness, & Ort, 2002).

College Bound

www.ge.com/foundation/grant_initiatives/education/collegebound.html

The General Electric (GE) Fund College Bound program is designed to encourage underperforming schools located near GE facilities to use whole-school change to significantly increase the college-going rate. The program is based on the concept that targeted, comprehensive change can lead to changes in curriculum and instruction that directly affect the college-going rate of graduates. Some of the more common features of change include partnering with a university, improving and enhancing the curriculum and instruction, rearranging staff to create teams and student advisories, creating new business partnerships, and increasing computer and science lab equipment. Overall, studies indicate that GE Fund College Bound has been successful. Seven of the 10 sites have shown significant increases in college-going rates, ranging from 22.7 percent to 159.1 percent. Graduates of GE Fund College Bound high schools also were 27 percent less likely than non-College Bound students to drop out of college without completing a degree (Brandeis University, 2000).

Smaller Learning Environments

Evident in many of these reform initiatives is the provision of small or personalized learning environments. Smaller learning environments have become a primary strategy to improve the nature and structure of high schools to increase student achievement. Advocates of smaller learning environments argue that in large schools, students and teachers do not have the opportunity to build strong relationships that are crucial to academic success of minority and low-income students (Nathan & Febey, 2001; Wasley et al., 2000). In contrast, smaller, more personal environments foster close relationships and stronger academic achievement (Aness & Ort, 1999; Raywid, 1994). There are three major forms of small or personalized learning environments: schools-within-schools, subschools, and freestanding small schools.

Schools-within schools (SWS). Schools-within-schools are established by dividing an existing school into small units. These schools-within-schools are often developed around themes and have their own administrators who report to a building principal. Students remain in the same SWS over a period of two or more years, taught by a team of teachers with common planning time. One of the most common forms of schools-within-schools is the career academy. Career academies focus learning on a specific career-related subject, such as health sciences. Originally designed as an alternative for educating non-college-track students, career academies have evolved into schools designed to provide students with high quality, rigorous, and relevant courses, as well as experiential opportunities in their fields of interest (Elliot, Hanser & Gilroy, 2002). Teachers work both collaboratively and in partnership with local businesses, where the business partners serve as curricular advisors, mentors, suppliers of work opportunities, and financial supporters.

Sub-Schools. Sub-schools are individual schools within one building, each with its own principal and staff. Like schools-within-schools, subschools are small in size and often theme-based, frequently to match the vision and mission of the school. Subschoools typically share large spaces, such as the gym and auditorium, and some resources, such as custodial staff (Ancess & Ort, 1999; Gladden, 2000). The Julia Richman Complex in New York City is a well known subschool example. Within the complex, four high schools share the building with a medical center, an arts center, a day care center, an elementary school, a professional development center, and a teen parent center. The four high schools within the complex have the highest graduation rates among the New York City reform models and an 89 percent college-going rate among graduates (Ancess & Ort, 1999).

Freestanding Small Schools. Freestanding small schools are those that enroll fewer than 600 students. They typically focus only on core academic courses, rather than offering a multitude of diverse and elective courses found in comprehensive high schools. They are fundamentally different from the traditional comprehensive high school, since they are premised on the belief that all students should learn the same thing, and that a common core curriculum for all students is the enabling force for greater academic gains (Wasley et al., 2000). By enrolling all students in a common set of classes, schools alleviate the problem presented by Powell et al. (1985) in *The Shopping Mall High School*, which described the comprehensive high school as a place where students could experiment in a little of anything they wanted, without direction or cohesion to their curricular program. Freestanding small schools are typically designed to provide all students with strong social supports in addition to a common curriculum.

Aligning Systems

Some reform models and initiatives have also been designed to restructure the academic and social supports for students with the explicit purpose of aligning curriculum between high school and postsecondary levels, and sometimes between levels within the K–12 system. Aligning curricula across school levels creates more seamless education and ensures that students are prepared for each subsequent grade. Aligning K–12 and postsecondary education also reduces the number of students who arrive at college needing remedial coursework (Kirst, 2001). The following programs and models restructure academic and social supports and align curricula across levels to prepare students for college.

International Baccalaureate (IB)

www.ibo.org/ibo/index.cfm

The International Baccalaureate (IB) program has evolved into a worldwide exemplar of high achievement, rigorous secondary education, and college preparation. Many public and private schools across the United States have adopted the program, although it was originally designed by the International Baccalaureate Organization (IBO) in Geneva, Switzerland, to prepare children of international dignitaries and business people for university enrollment while moving between countries and schools. The IB program is designed around three features: an interdisciplinary curriculum designed to help students connect their experiences in and out of the classroom, service learning, and an independent research project.

Eleventh and 12th grade students complete coursework in six academic subjects (first language, second language, individuals and societies, experimental sciences, mathematics, and arts and electives), and must select at least three (but no more than four) areas for higher-level work, while they take the remainder of their courses at the standard level. Upon completion of the IB curriculum, students take exit exams and complete their individual research project. All grades and exams are based on criterion-referenced rubrics that are the same for students throughout the world.

In 30 years of existence, the IB program has consistently produced students who are prepared for university-level work (International Baccalaureate Organization, n.d.). At least 80 percent of the students who apply for graduation each year succeed (based on exit exams). A scan of the IB high schools in the United States suggests that, while the majority are located in wealthy communities, a growing number are located in urban districts with the goal of offering rigorous programs to traditionally underserved, low-income, and minority students (Gehring, 2001b; International Baccalaureate Organization, n.d.).

Dual Enrollment

Schools in nearly every state use dual enrollment to encourage college preparedness and to help reduce the cost of higher education and the number of remedial enrollments in state university systems (Martinez & Bray, 2002). Dual enrollment allows high school students to enroll in college courses, offering them the opportunity to experience academically-rigorous curricula while earning college-level credit at the same time. Most often, students in dual enrollment courses receive instruction from either college-accredited teachers based at the high school (Gehring, 2001a), or from college faculty on the college campus.

Some dual enrollment programs are designed specifically to increase access to higher education for minority or low-income students. Programs such as *ACE* in Phoenix, AZ (Van Buskirk & McGrath, 1999) and *College Now* in New York City (Bailey & Karp, 2002; Kleinman, 2001) combine college preparatory classes, college courses, and networks for academic and social support to expose students to the rigor and experience of college life. Dual enrollment programs provide a seamless transition between high school and college. The seamlessness is due in part to the five principles of dual enrollment (listed below), which enable students to take more rigorous courses than would otherwise be offered at their schools, and allow community colleges to provide valuable skills and knowledge to students prior to their enrollment, thus decreasing the likelihood of remediation (Robertson, Chapman, & Gaskin, 2001):

1. Education is a continuum in which the basics must be learned in order to proceed.
2. Courses offered through the programs should augment, not replace, high school curricula.
3. Programs are most effective when they are physically accessible to students.
4. Programs should provide financial support when necessary.
5. The secondary-postsecondary partnership should be supplemented with academic support in the form of academic advising, pre-college counseling, financial aid planning, study skills workshops, and assessment (Robertson, Chapman, & Gaskin, 2001).

While there is considerable confusion about the exact numbers of students enrolled in dual enrollment programs nationally, it is clear that there is a small, but growing trend for high school students to earn college credits while still in high school (Adelman, 2004; Clark, 2001). A significant concern, however, is whether college-bound students are taking advantage of this opportunity, creating even further advantage, than other, underrepresented students. Nationally, four-year college students who participated in a high school dual enrollment program have, on average, a higher college GPA and a higher four-year graduation rate than students who did not participate in such a program (Clark, 2001).

Middle College and Early College High School

www.earlycolleges.org

The middle college high school, a form of dual enrollment, aims to increase college access for at-risk students by providing extensive academic and social support. The original middle college high school combined the last three years of high school with an associate's degree program at LaGuardia Community College in the New York City area. The goal of the program was to decrease the number of high school dropouts and provide a bridge between high school and postsecondary education by exposing at-risk students to advanced learning.

Today, the concept of the middle college high school has been recreated across the country, but is more varied in its configurations. The middle college high schools movement uses interdisciplinary curricula; cooperation between schools, community organizations, and business; self-pacing; and a variety of measures designed to improve students' connection to the school, such as house systems and teacher-counselors who stay with students over several years (Lieberman, 1998). In addition to providing general guidance, teacher-counselors work with students to create course schedules, keep students on track to graduation, and help them with internship placements and career advising (Wechsler, 2001).

Nationwide, middle college high schools have a high school retention rate of 85 percent, with 75 percent of those students graduating from high school. Of the graduates, 78 percent go on to college (Lieberman, 1998). Data from the Middle College National Consortium show that of the middle colleges reporting graduation rates, the majority had graduation rates between 85 and 100 percent, with all but two above 90 percent (MCNC, 2003). By and large, these graduation rates are on par with the best schools in the districts in which the schools are located.

Tech Prep and 2+2 Articulation

www.ed.gov/about/offices/list/ovae/pi/cte/tpreptopic2.html

Tech Prep and 2+2 Articulation programs are another means by which high school and postsecondary curricula can be merged to create a seamless transition for students between high school and postsecondary education. Tech Prep is federally funded through the Perkins Vocational and Applied Technology Education Act of 1990, and is administered through state-sponsored initiatives that combine vocational subjects and rigorous

academics. All coursework for high school juniors and seniors is aligned to the necessary requirements for completing the technical or associate's degree. Beyond the articulation agreements between secondary and postsecondary schools and the integrated academic and vocational curricula, key elements of Tech Prep include career guidance, collaboration between educators and employers, common core curricula, and work-based learning experiences. Furthermore, Tech Prep utilizes common academic and participation expectations to keep all students on track to graduation and to enable willing students to go on to college (Bragg et al., 1997).

According to a study of New York State Tech Prep programs, Tech Prep students outperformed non-Tech Prep students in 11th and 12th grades, even when prior grade point average discrepancies are accounted for. However, on the PSAT and SAT college admissions tests, non-Tech Prep students did better than Tech Prep students, particularly in mathematics (Brodsky, Newman, Arroyo, & Fabozzi, 1997). Other studies, including Bragg (2001) and Brodsky et al. (1997), found that about two thirds of Tech Prep graduates enrolled in postsecondary education.

Project GRAD

www.projectgradusa.org

Project GRAD (Graduation Really Achieves Dreams) is designed “to increase graduation and college attendance rates” of at-risk students (Project GRAD, 2003). Although it is now a K–12 program, it began as a scholarship program for high school students in Houston. The program has developed into a district-wide reform effort to align curricula and expectations among grade levels and between schools. It works with elementary and middle schools to prepare students for high school, and it provides high school students with support to graduate from high school and attend college. Included in Project GRAD are scholarships, summer institutes, summer bridge programs, a “Communities in Schools” (CIS) program, and “Parent University.”

Project GRAD addresses and values the fact that preparation for college starts earlier than high school, and achieves some degree of alignment among institutions within the K–12 pipeline. Project GRAD measures student success by increased graduation and college attendance rates. The pilot site, Jefferson Davis High School, saw the number of graduates increase from an average of 175 graduates per year to 308 graduates (Project GRAD, 2003). Similarly, Jack Yates High School saw its graduation rate more than triple in the three years since implementation (Project GRAD, 2003).

GEAR UP

www.ed.gov/programs/gearup/index.html

GEAR UP (Gaining Early Awareness and Readiness for Undergraduate Programs) is a federally-funded early-intervention program designed to increase the number of low-income students who are prepared to enter and succeed in postsecondary education. GEAR UP works to achieve this goal by building the capacity of low-income middle schools to provide a rigorous curriculum, and by fostering a seamless continuum between secondary and postsecondary education. GEAR UP grantees create local partnerships between low-

income middle schools, institutions of higher education, businesses, and community organizations. Through a network of partnerships, the program coordinates access to mentoring, tutoring, and guidance regarding the college-going process for cohorts of low-income students, beginning no later than 7th grade. GEAR UP funding is also used for staff development, particularly to increase content knowledge of middle school mathematics and science teachers. It embraces implementing rigorous core academic curricula aligned with expectations for entry-level readiness set forth by local postsecondary institutions.

GEAR UP offers the opportunity to create curricular alignment and support for low-income students across the K–12 system, beginning primarily at the middle school, so that the pipeline to successful college graduation is as clear to low-income students as it is to those from more privileged backgrounds. The program is designed to address multiple predictors of college-going behavior by creating partnerships that 1) enable schools to increase academic rigor, and 2) develop networks capable of providing social and academic supports to students in the form of tutors and mentors from the community who can offer information, support, and guidance. By starting in the middle grades, students and families gain the necessary information regarding college access prior to high school enrollment.

Conclusions and Recommendations

To varying degrees, the reform initiatives presented in this paper have successfully improved student achievement and increased enrollment in postsecondary education. Across all of the reform initiatives, four practices most commonly received credit for this success: 1) access to a rigorous academic common core curriculum for all students, 2) the prevalence in structure or climate of personalized learning environments for students, 3) a balance of academic and social support for students to develop social networks and instrumental relationships, and 4) alignment of curriculum between various levels, such as high school and postsecondary, and between levels within the K–12 system.

Research on effective practices in high school restructuring aimed at increasing student achievement and equitable outcomes shows that these practices are consistent with predictors for college enrollment and success. Multiple studies on school reform consistently show that student achievement and equity improve with the prevalence of academic rigor (curriculum, expectations, etc.) and social support (Lee & Smith, 1995; Lee, Smith, & Croninger, 1997; Phillips, 1997).

Because reforming high schools is complicated and requires fundamental institutional change, the implementation of such change is lagging. However, when high schools are engaged in restructuring practices focused on academic rigor and social support, they contribute to greater gains in student achievement, engagement, and equity (Lee & Smith, 1995). The challenge now is to help all high schools restructure to ensure improved student learning and equitable outcomes specific to student achievement and educational attainment. The following recommendations should be discussed and considered by all stakeholders as the basis on which to introduce changes:

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1. Schools should implement a common core curriculum that includes requirements for students to complete advanced work in mathematics. Non-academically rigorous tracks should be eliminated.
2. Schools should create a system to identify academically unprepared students who enter high school to help accelerate their learning.
3. High schools should alter their organizational structure to facilitate the development of supportive relationships for students. Such relationships will ensure that students do not get lost in the system and that they have access to information that helps them plan for and be prepared for postsecondary education.
4. K–12 and postsecondary systems should work closely to align high school curricula and college enrollment requirements.
5. State education agencies and colleges and universities should work together to ensure that high school students, their parents/guardians, and their school counselors have good information about college entrance requirements, placement tests, and the costs associated with going to college.
6. Model developers, universities, and foundations should evaluate the relationship between their reform initiatives and college preparedness. Outcome measures should continue to assess high school achievement and graduation rates, as well as the proportion of students applying to college, the proportion of students who attend two- and four-year colleges, and, if possible, the proportion of students who persist in higher education.
7. Stakeholders should read *How Do Educators' Cultural Belief Systems Affect Underserved Students' Pursuit of Postsecondary Education?* (George & Aronson, 2003) to recognize how teachers' beliefs about students' academic abilities affect student achievement. It has yet to be determined whether structural changes can facilitate increased student achievement if they cannot change teachers' beliefs about students' abilities.
8. Stakeholders should read *What Do We Know About the Impact of Pre-College Outreach Programs on College Entrance?* (Pathways to College Network, 2002) to understand how partnerships with higher education institutions can increase students' college preparedness.
9. Stakeholders should read *What the Research Shows: Breaking Ranks in Action*, by the National Association of Secondary School Principals (NASSP, 2002) for further research on high school reform.

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