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

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ACKNOWLEDGMENTS

The publication of this product would not have been possible without the active support of several key organizations.

The efforts of the Bill and Melinda Gates Foundation were essential to the financial capacity to carry out the work involved in researching and creating this piece. The Bill and Melinda Gates Foundation supports the Catalog of Research on Secondary School Reform (CoRSSR) as developed by the Institute for Educational Leadership. CoRSSR is an extensive collection of emerging research on high schools, middle schools, and high school-aged youth. It includes implementation research of many national high school reform models and initiatives, effectiveness studies including many about philanthropic initiatives, and studies of particular local and state policies.

The Pathways to College Network, along with its Project Director, Ann Coles, and Tom Barlow and Sharon Camblin, provided financial support and a framework for discussion and analysis of the circumstances around high school issues without which the understanding in this report would not have been reached.

The Institute for Educational Leadership, led by Elizabeth Hale, and the National Clearinghouse for Comprehensive School Reform, led by Arthur Gosling provided professional expertise and networks to support this endeavor.

Finally, a special gratitude is extended to the writers of this document: Monica Martinez, Ph.D., a Senior Associate at the Institute for Educational Leadership, who as of October 2004 will be the Senior Fellow at the KnowledgeWorks Foundation, Cincinnati, OH; and, Shayna Klopott, a Research Associate at the Institute for Educational Leadership, who is currently pursuing a Ph.D. in politics and education at Teacher's College, Columbia University, New York. Without their abilities and expertise, neither this paper, nor the theories it presents, would have been formed.

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EXECUTIVE SUMMARY

The mission of the Pathways to College Network (PCN) is to focus on improving college preparation, access, and success for underserved populations, including low-income, underrepresented minority, and first-generation students. To ascertain where we currently stand with respect to achieving this mission, this updated paper—originally developed in 2002— identifies and analyzes school reforms that present evidence of college preparation for all students.

In this paper, we examine the predictors of college-going behavior and how they have been addressed within the school reform movement. We then extrapolate the promising practices from existing reform initiatives and make recommendations for the future. In order to do this, we reviewed the literature on school reform, college access, and the predictors of college-going behavior, and analyzed research and materials available on a set of school reform designs. We found that among the predictors of college-going behavior, academic rigor and strong social and academic support were the most crucial predictors of a student's successful enrollment in, and completion of, postsecondary institutions. A variety of reform initiatives and models have been created to address both rigor and support. Efforts focused on providing academic rigor through the curriculum included removing the lower vocational track; aligning curricula, standards, and assessments to higher education requisites; enrolling all students in algebra early in their secondary school careers; and providing opportunities for students to earn college credit in high school through Advanced Placement and dual enrollment programs.

We limited our analysis to pre-packaged school reform designs: restructuring plans that are based on a vision of how schools should be. Numerous institutions of higher education and education organizations have developed school reform designs or models that can be implemented to help schools and school districts restructure to increase student achievement. The following models were reviewed: America's Choice, High Schools That Work, Talent Development High Schools, First Things First, and Coalition of Essential Schools. Many of the reforms we examined base their efforts to restructure the high school on the provision of a rigorous curriculum as well as on the creation of a more personalized learning environment so students receive the necessary academic and social support.

Some of the reform models and initiatives are designed to restructure the academic and social support provided to students for the explicit purpose of preparing economically disadvantaged and minority students. Additionally, these programs directly and indirectly align curriculum between various levels, such as high school and postsecondary, and between levels within the K–12 system. We identified the following models that function this way: the International Baccalaureate Program, The Middle College High School, GE College Bound, Advancement Via Individual Determination (AVID) and Project GRAD.

Over a decade ago, *All One System* (Hodgkinson, 1985) demonstrated the dependency of the higher education system on the quality of the graduates from the K–12 system. Now, many new ideas and initiatives are designed to link the systems or at least recognize the value that should be placed on college preparation. These more recent reform initiatives will need to be evaluated and then expanded, as their current impact is more local than national.

Through our review and analysis we have identified four practices that are most commonly attributed to the success of low-income and minority high school students: eliminating academic tracking by enrolling all students in an academically rigorous core curriculum; providing relevant curriculum and pedagogy; developing small learning environments for students; and providing a balance of academic and social support for students for the purpose of developing social networks and relationships. We conclude that high school reform efforts integrating these practices have the greatest potential to improve college access for underserved minority and low-income students. Finally, we make a number of recommendations concerning the future of high school reform:

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 and instrumental relationships for students. Such relationships will ensure that students do not get lost in the system and that they have access to valuable information.
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* (National Association of Secondary School Principals, 2002) for further research on high school reform.

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% of high school graduates who enroll in two- or four-year colleges, only about 35% 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% of African American students and 27.8% of Latino students drop out of high school. Other studies report that urban districts with predominantly minority student populations have dropout rates near 50% (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% of students who enter higher education and some 60% 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.

College preparedness is an enormous topic. For this reason, this review is limited to reform efforts that address organizational structure—both academic and social—at the high school level. Although high school restructuring efforts have not been explicitly designed to improve college preparation, many aspects of these efforts are congruent with the predictors of college going and could be utilized to improve access to college for underrepresented minority and low-income students. Not included in this discussion are other components of college preparation, such as teacher quality, early readiness and pre-high school college preparation, family participation, and financial aid, although they are also crucial to student success.

This analysis begins with a review of the literature concerning the predictors of college enrollment to identify which high school restructuring efforts carry the most potential to improve enrollment and persistence to complete college education among under-represented minority and low-income students. Based on these findings, specific recommendations are made for reforming the high school structure so that it can better prepare students for success in higher education.

Background

The comprehensive high school was created in the early 20th century to provide access to secondary education for an increasingly diverse population (Conant, 1959). It offered the possibility of being a "terminal institution" from which students could enter the workforce directly (Hammack, 2001), instead of serving exclusively as an academic training ground, as had been the case. Therefore, the comprehensive high school began to offer a variety of educational and vocational options, or tracks. Throughout the early and mid-20th century, this was accepted as the best way to educate and prepare all students for adult life. However, by the late 1970s, it became evident that comprehensive high schools were failing to prepare American students for the workforce and for postsecondary education.

The 1980s heralded reports by the National Commission on Excellence in Education (1983), the Carnegie Foundation for the Advancement of Teaching (Boyer, 1983), and the National Association of Secondary School Principals in conjunction with the Commission on Educational Issues of the National Association of Independent Schools (Sizer, 1984) that called for high school reform. The reports indicated that schools were not providing students with enough academic rigor, guidance, or support, and radical changes were needed to improve the comprehensive high school. Their primary concerns were focused on the failure of schools to adequately prepare students to participate in economic and civic life after graduation. Lacking in these reports was explicit attention to the academic needs and low college enrollment rates among economically disadvantaged and minority students. Although the reports viewed college attendance as an educational step toward democratic participation, none suggested that high schools return to their prior status as college preparatory institutions, nor did they specify ways in which college access could be improved or even made possible for minority and poor students. Instead, their plans focused on redefining the goals and practices to transform the comprehensive high school into a place devoted to improved student performance, at least as measured by test scores.

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.

This review will focus on these predictors, especially the first two, and their relationship to high school reform.

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). Students who are higher achievers in high school are more likely to enroll in college and complete postsecondary education. In addition to enrollment in a rigorous academic program, college-going behavior can be predicted based on high achievement as defined by grade point average, class rank, and test scores (Cabrera & La Nasa, 2000a, 2000b; Horn & Kojaku, 2001; McDonough, 1997).

Often students of color, those from low-income families, and students whose parent(s)/caretaker(s) did not attend college, do not have the knowledge, information, or social and cultural capital to understand the academic work and college application processes necessary to plan and pursue postsecondary education (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). Social support takes a variety of forms. Of critical importance is students' access to the information necessary to plan and attend a higher education institution. According to McDonough (1997), this includes 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. They argue that developing students' aspirations to attend college should begin early to ensure that students' course-taking is aligned with their occupational and educational aspirations.

Another form of social support—a school's solid promotion of strong social networks that support students' academic and emotional development—can also determine the students' likelihood of going to college (Berkner & Chavez, 1997; Cabrera & La Nasa,

2000a; McDonough, 1997). Peers may serve as support for or challenges to formal education. They 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.

In the sections that follow, a number of current high school reform initiatives and the ways in which they address the predictors of college-going behavior are analyzed. These reform strategies are divided into three types:

- those that primarily address the academic rigor of the curriculum,
- those that address the academic and social structure of the school, and
- those that specifically address the alignment of curriculum between high school and postsecondary levels, and among levels within the K–12 system.

This information is used to draw out practices that should be consistently integrated in high school reform efforts to enable all students, especially low-income and minority youth, to enter college and succeed.

INCREASING ACADEMIC RIGOR THROUGH THE CURRICULUM

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). This is consistent with research that shows that academic press, defined as the totality of pressures grounded in a school's culture and climate that encourages the pursuit of rigorous academic goals, consistently improves student achievement (Shouse, 1996; Phillips, 1997). More important, 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). For example, a 2003 NCES study of postsecondary attainment, based on results from the NELS: 88/2000 transcript study (called PETS), found that students who took a high school program that fell in the highest quintile of intensity earned nearly twice as many credits in their first year of college as students from the lowest quintile of high school program intensity. Even more striking, however, is that even when compared to students in the second highest quintile of academic intensity, students from the highest group earned nearly 10 more credits in their first year of college (NCES, 2003 (November). A study conducted by Fry (2004) supported these findings specific to Latino high school students. Fry found that the best-prepared Latino high school graduates enroll in top tier four-year colleges and universities at a similar rate to white students. These studies demonstrate the importance of minority and first generation students enrolling in high intensity programs of study in high school.

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.

Based on the research showing that minority students are disproportionately represented in lower tracked classes, a common restructuring strategy is to focus on increasing access to rigorous courses through the availability of a "core" academic curriculum. A core curriculum is a set of common academic courses that 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. The initiatives discussed in this section highlight curricular reforms designed to increase academic press, particularly the academic rigor of the high school curriculum, to pave the way for students to succeed in postsecondary education.

It is difficult to capture the degree to which local schools and districts offer access to rigorous courses to all students. Therefore, this review will discuss how standards-based reform is one means to increase academic rigor and how two national programs—Equity 2000 and the Urban Systemic Initiative—have demonstrated the efficacy of providing increased access to rigorous courses for low-income and minority youth.

The movement to establish an academically rigorous core curriculum in all high schools across the United States evolved in the early 1980s as a result of national education reform efforts to increase academic requirements for all students (National Commission on Excellence in Education, 1983). This work also initiated standards-based reform, the most significant reform effort in 20 years, to improve student achievement. The underlying principle of the standards movement is that, because schools and school districts have allowed students to be promoted and to graduate without substantial attainment of knowledge and skills, an outside authority is needed to create guidelines for promotion and graduation. It attempts to provide a legislated means for establishing common expectations for all students and an enforceable policy for creating equitable education among diverse schools and student populations. Standards-based reform has four overall components:

- The standards, usually in the form of a framework, are developed by an overseeing authority;
- The curriculum is taught in the classroom;
- The assessment is provided by the overseeing authority; and
- The accountability component rewards and sanctions schools and teachers according to students' performance (Howard, 1995; Meier, 2000a).

The standards movement originally called for students to take courses that meet the recommendations set forth in 1983 by the New Basics Curriculum as defined in *A Nation at Risk* (National Commission on Excellence in Education 1983). The New Basics Curriculum includes four years of English; three years of math, science, and social studies; and a half-year of computer science. It also suggests that college-bound students take two years of a foreign language and a course in the arts.

Nonetheless, the majority of American high school students do not take course loads that meet these standards. According to one study, only about one-fifth of schools require students to fulfill the New Basics Curriculum to graduate (Roey et al, 2001). Only 64% of the graduates in the Class of 2004 who took the ACT exam took a recommended core curriculum of college preparation: four years of English, and three each of math, natural science, and social science. Consequently, researchers and education leaders have called on policymakers to make the components of the New Basics Curriculum—originally thought only to be for the "college bound" or any other college preparatory curriculum—

the default curriculum for all students (Wimberley & Noeth, 2004; Barth, 2003; Center for State Scholars, 2003; NCES, 2003 [November]).

The fact that students are still not enrolling in rigorous course curricula may be one of the reasons students continue to perform poorly on national evaluations. For instance, the 2002 National Assessment of Educational Progress (NAEP) scores for reading show that 12th grade achievement is lower than it was four years earlier (NAEP, 2003). In reading, fewer students scored at or above the basic and proficient levels in 2002 than had done so in 1998. White 12th graders scored an average of five points lower (292 from 297), while Latino 12th graders scored an average of three points lower (273 from 276) and African American 12th graders scored an average of six points lower (267 from 271) (NAEP, 2003). Similarly, the 2000 NAEP scores in science show that between 1996 and 2000 high school seniors slipped four points overall (from 149 to 145). White 12th graders' scores fell by an average of six points (159 to 153), while Latino 12th graders' scores fell by an average of two points (128 to 126) and African American 12th graders' scores remained the same (122) (NAEP, 2001). The lowest mathematics and science scores were those of African American 12th grade students.

Because the standards are designed to increase student participation in academically rigorous classes and create common high expectations for all students, the standards movement has been seen as a potential venue to improve student achievement and, presumably, their preparation for postsecondary education. However, inadequate assessments have limited the usefulness of the standards movement.

Currently, most assessments measure minimum competencies or knowledge among high school students. That is, the assessments that are designed to determine whether students have met the appropriate standards for graduation are often administered during the 10th grade year and therefore do not measure the cumulative knowledge acquired by the completion of high school. In fact, a 2004 study published by Achieve, Inc., found that the math tests used to determine whether students are ready to graduate from high school measure skills and knowledge comparable to what is taught in 8th grade in other countries. The study also found that in Florida, the skills tested on English Language Arts (ELA) high school state exit exam are comparable to skills and knowledge contained in the 8th and 9th grade given by ACT.

Other studies demonstrate that many of the state assessments are not well-aligned to college entrance requirements (Sommerville & Yi, 2002; Venezia, Kirst & Antonio, 2003; Kirst, 2001; National Commission on the High School Year, 2001). The above-mentioned Achieve study regarding content knowledge of state exit exams also showed that the tests do not adequately address the type of mathematics and English language skills that students need for college and workplace readiness. Sommerville and Yi (2002) also compared state graduation requirements to college admissions standards for each state's higher education systems and concluded that few of the states have aligned their systems' requirements, particularly when examined by topics rather than number of courses. Sommerville and Yi noted that none of the states expect as much from students graduating from high school as they do from students entering college. This gap in

expectations inhibits students' efforts to obtain entry to college or achieve success upon enrollment in college, and particularly affects underrepresented students who are more likely to attend schools that meet just the minimal standards (Kirst, 2001). According to Kirst, the disparity between the actualization of standards and their assumed purpose makes it impossible for them to be declared successful.

ALIGNING CURRICULA WITH COLLEGE ENTRY REQUIREMENTS

In describing the K–12 standards, Kirst (2001) says, "[T]hese reforms....have ignored the lack of coherence in content and assessment standards between K–12 and higher education....The current scene is a Babel of standards rather than a coherent strategy" (5). However, this could change as states establish stricter graduation requirements and begin to create K–16 systems or high school exit exams that align high school graduation requirements with state university entrance requirements.

In Ohio, for example, the Ohio Board of Regents and the Ohio State Board of Education designed *Common Expectations* to define what students should know and be able to do upon high school graduation to succeed in higher education and careers (Tafel & Eberhart, 1999). The initiative has served as the basis for developing content standards that describe what students should know and be able to do in each subject and at each grade level, serving as benchmarks for students, teachers, parents, and schools to measure student progress (Ohio Department of Education, 2001).

New York has aligned its exit exams, The New York State Regents Examinations (Regents) to postsecondary education. Regents exams were traditionally required of students who wanted to attend state universities and were also used for course placement in community colleges. Now, all students are required to take the Regents to graduate from high school. The elevation of the Regents exams to a statewide graduation requirement has led to increased focus on academic preparation and increased opportunity for all students to be eligible to attend four-year universities in New York. Furthermore, students who choose to attend the City College of New York (CUNY) can use a score of 75 or better on the English and Mathematics Regents exams to demonstrate that they have met the CUNY basic skills requirements (See http://portal.cuny.edu/cms/id/cuny/documents/informationpage/002144.htm, 2003).

Oregon has created a two-tiered alignment program, somewhat akin to the New York State Regents. While students work toward their high school diplomas, they may take additional certification tests or provide certification work samples and earn a Certificate of Initial Mastery (CIM) or a Certificate of Advanced Mastery (CAM). Students may earn a CIM by meeting specific standards on state tests and providing classroom work samples in English/language arts, mathematics, and science. To earn a CAM, students must demonstrate application and extension of academic and career-related knowledge and skills in new and complex situations appropriate to the student's personal, academic, and career interests and post-high school goals. Completing these certificates demonstrates that the students have done work beyond what is necessary for a high

school diploma and helps students with the University of Oregon's admissions exam, the Proficiency-based Admissions Standard System (PASS).

Although the CIM and CAM are not required for high school graduation, the state hopes that the introduction of the high school certification program, along with a quasi-aligned university admissions exam, will compel high schools to alter their course content so students are prepared for the CIM/CAM tests and, hence, the PASS.

Other states, such as California, Texas, and Indiana, have established a default college preparatory curriculum for all students in an effort to align their high school graduation requirements with the entrance standards for their university systems. However, there remains a gap between the default high school graduation requirements and the recommended course requirements for entrance at the states' flagship university campuses. In Texas, for example, the General Program, which is the default high school diploma, is not aligned with entrance requirements for universities such as the University of Texas at Austin and Southwest Texas State University (Kirst & Bracco, 2004). In California, the "A to G" subject requirements (four years of English and math, two or more years of foreign language, two or more years of lab science, two or more years of history/social science, and at least one year of arts/humanities) are aligned with the basic entrance requirements for the California State University and University of California Systems, but do not meet the recommended course distributions. For example, while the universities require only two years of science and foreign language, they suggest that entering students should have taken three years of each in high school (Antonio & Besola, 2004).

Finally, Indiana's "CORE 40" high school graduation requirements only include foreign language as a choice for electives, but the flagship campus of Indiana University–Bloomington requires that students take courses in a language other than English (See http://www.indiana.edu/~iuadmit/freshmen/as_standards.shtml).

Alignment initiatives such as those in Ohio, New York, Oregon, Texas, California, and Indiana have the potential to help underserved students enroll in postsecondary education. They compel schools to provide access to more rigorous coursework than previously might have been offered to low-income and minority students, and ensure that every student will be eligible for college. While some states have made great strides toward improving college access through alignment, much work remains in this area (Kirst & Venezia, 2004).

EQUITY 2000

National programs such as EQUITY 2000 have also been used as a means of providing increased access to a rigorous course curriculum for low-income and minority youth. An initiative of the College Board, EQUITY 2000 was designed specifically to provide access to advanced mathematics courses for minority and low-income students. The program, piloted in 1990 in Fort Worth, Texas, expanded to 33 sites in 13 states by 2000

(College Board, 2000a). In 2000, the College Board stopped expanding the program and began incorporated the aspects of EQUITY 2000 into its larger program.

In EQUITY 2000 schools, students are expected to complete Algebra by 9th grade and Geometry by 10th grade. Teachers in EQUITY 2000 schools use the standards developed by the National Council of Teachers of Mathematics as a basis of instructional practice. To facilitate this, the program provides content-area professional development. Professional development is also provided to guidance counselors and principals to facilitate their roles as college advisors and academic/instructional leaders. EQUITY 2000 provides supports to build student skills and expose them to the rigorous expectations of college, while also working to include parents in the process.

According to the College Board, EQUITY 2000 has resulted in improved outcomes for students. For 1990–2000, 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

Like EQUITY 2000, the Urban Systemic Initiative (USI), launched by the National Science Foundation (NSF) in 1991 in 28 cities that have the highest number of children living in poverty, is designed to provide low-income and minority youth with increased access to rigorous curriculum in mathematics and science. USI was designed to establish policies that enable more students to enroll in "gate-keeping" and higher-level mathematics (Algebra II, Geometry, Calculus, and Integrated Mathematics II-IV) and science (Biology, Chemistry, Physics, and Integrated Science I-III) courses. It also aims to build strong partnerships and relationships to provide support for schools, their faculties, staff, and students (Kim, et al., 2001; *Education Week*, 2001).

USI has increased access to math and science for minority students. 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. The 1993 cohort (the year in which the students began the program) exceeded the national test-taking rate (22.9/1,000) by 2.1 test-takers per 1,000. In science, the 1994 cohort showed even better results: in the 1997–1998 school year, they exceeded the national rate (26.0/1,000) by 3.8 test-takers per 1,000.

Similar results were exhibited for SAT and ACT test-taking. 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).

EQUITY 2000 and USI are examples of programs that provide a means for schools to offer high-level, rigorous mathematics courses, thereby improving students' preparedness for college. 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). Furthermore, Adelman (1999) reported that the single greatest predictor of successful college completion was taking high-level mathematics courses during high school. A study completed by Tierney, Colyar, and Corwin (2003) shows that of first-generation students enrolled in four-year colleges, 64% completed advanced math, regardless of their ethnic background, and completed a bachelor's degree.

Each of the curricular programs discussed above addresses key restructuring elements specific to the academic organization of high schools. They aim to increase student achievement and address the predictors of college-going behavior that relate to access and success in postsecondary education. Components of these initiatives demonstrate that equal learning opportunities narrow the achievement gap and increase education attainment.

Engaging in College-Level Curriculum and Earning College Credit

Another way in which high schools attempt to increase access to a rigorous curriculum for low-income and minority youth is by offering students the opportunity to participate in college-level coursework and gain college credit. Advanced Placement is commonly used in high schools to provide these opportunities. The knowledge and skills these programs provide are particularly important for students from communities traditionally underrepresented in postsecondary institutions

Advanced Placement

The College Board-administered Advanced Placement (AP) program began in the mid-1950s with the goal of preparing students for college through early exposure to the academic rigor and content of college freshmen-level courses (College Board, 2001b). The AP program is structured around 32 full- and half-year courses that cover college entry-level material in a wide variety of subjects. For each course, the College Board provides instructors with a framework that details what students need to know and what they should be able to do upon course completion (College Board, 1983). AP courses conclude with an exam that is composed of multiple choice and free response questions that correspond to the standards set forth by the College Board. The exams test students' knowledge and their ability to analyze complex ideas within each subject's core disciplinary framework (College Board, 2001a). Because successful completion of AP

courses and AP exams allows students to enter college with exemptions from entry-level college course requirements, students can progress more quickly to a focused course of study once enrolled in college.

Access to AP courses is still limited, however. The College Board estimates that 43% of high schools do not offer any AP courses and that 34% of students in AP courses do not take the exams. These figures are disproportionately magnified in urban, rural, and poor areas of the country (College Board, 2000b). Limited access has created a disparity between minority/low-income students and white/Asian students, who enroll in AP courses at significantly higher rates. For example, white students make up 66% of the youth ages 15 to 19, while they represent 67% of the students enrolled in AP Calculus AB classes. In contrast, African American students comprise 15% of high school students, but represent 4% of the same course students; and Hispanic students make up 14% of high school students, but represent 5% of AP Calculus AB students. Based on their representation in the general population, one might expect that 60% more African American students and 30% more Hispanic students would be enrolled in an AP course (Gonzalez, O'Conner, & Miles, 2001; Burton et al, 2002).

Beyond disparities in enrollment, there is also a lack of consistency in teacher preparation. Although the College Board offers training for AP teachers, it is not required. Consequently, not all AP teachers are well prepared to teach AP classes. This is particularly true in schools that serve large minority and low-income populations (College Board, 2001b). A recent study of the effect of teachers on minority students' AP success showed the AP teachers most successful at teaching minority students had the lengthiest tenures—both as teachers in general and in particular with regard to AP—had a major in the discipline that they taught, and had attended AP-specific professional development. Another positive factor was that the school and/or teacher encouraged all students to take AP courses (Burton, 2002). Because schools with high minority enrollment tend to have the least-prepared teachers in general (Education Trust, 2000), they are also likely to have the least-prepared AP teachers.

As a consequence of poor student preparation and inadequate teacher preparation, a disproportionate number of African American and Latino students score lower on AP exams than do white students. According to the College Board (2003) the national mean AP exam score in 2003 was 2.95 (out of 5) for all students, 3.03 for white students, 2.11 for African American students, and 2.72 for Latino students. This disparity between ethnic groups is highlighted most prominently by the AP Calculus exams. While 21% of white students score 3 or higher on the AP Calculus exams, only 2% of African American and 6% of Hispanic students do so. This scoring pattern in exams across different ethnic groups is the same (Gonzalez, O'Conner, & Miles, 2001; National Center for Education Statistics, 1999a).

These differences in the scores are even more pronounced for minority students in urban school districts. Students in the national sample of all AP test-takers consistently score higher than their peers in urban schools, regardless of race or income (Eisner, 2001). For example, on the AP Calculus AB exam, African American, Hispanic, and white students

from urban schools in the Great City Schools (GCS) sample earned an average of 1.8, 2.1, and 2.9, while the national sample scored 2.0, 2.4, and 3.0, respectively. Similarly, the AP Calculus AB mean score was 2.1 for students from the GCS whose family's income was under $10,000, while it was 2.4 from the national sample. At every income level and for every exam, there is a similar gap between GCS students and the national sample.

The positive impact of the AP program 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. Enrollment in an AP class has been found to be among the most significant predictors of college-going behavior (Adelman, 1999). Whether or not students earn college credit through the program, the AP courses offer the rigorous, advanced level curricula that students need to prepare for work at the postsecondary level. AP also exposes students to the expectations and format of learning found in a college setting. Success in AP classes often gives students increased confidence that they can succeed in college. Furthermore, the structure and teaching skills common among AP programs as they are implemented in high-performing schools can serve as a good model for what an academically rigorous core curriculum could look like.

Nonetheless, a program such as Advanced Placement is not necessarily designed as a foundation for schoolwide restructuring to increase all students' achievement in a low-performing school. Although it may be possible to create a blueprint for schoolwide improvement using the principles embedded in the Advance Placement program or a similar program, in most cases they are being implemented to serve a select portion of students in a given school or district.

REFORMS THAT ADDRESS ACADEMIC AND SOCIAL SUPPORT

While some of the reports and efforts of the 1980s were concerned solely with increasing academic achievement, others called for efforts to reorganize both the academic and social structures of high school. The academic structure includes those features of schools that support strong academic achievement, such as a common and demanding curriculum, high expectations for learning, and pedagogy that engages students in relevant learning and critical thinking. The academic restructuring component addresses academic rigor as a college predictor.

The social structure includes the mechanisms that emphasize and enhance social relationships among students and staff. Such relationships create a system through which students are able to develop strong networks of adults and peers to support them throughout their high school careers. Social support addresses the college predictor concerning adult guidance and access to critical information that will help direct students toward college.

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. While some models simply provide a set of principles around which the school faculty can redesign their school (e.g., Coalition of Essential Schools), others provide a highly prescriptive set of curricula for schools to implement (e.g., Talent Development). Models have been implemented with resources provided by the Comprehensive School Reform Demonstration project authorized by the U.S. Congress in 1997, New American Schools, and an array of philanthropic and state initiatives targeted at improving low-performing schools. Such initiatives to improve schools have created a market and financial support for the proliferation of school reform models.

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. For each initiative designed to restructure the high school, this study gives an overview of the program, provides data to demonstrate its success, examines the factors that contribute to that success, and discusses the relationship between the restructuring efforts and the predictors of college-going behavior.

America's Choice

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 America's Choice was originally designed for K–12 schools, it was recently funded by the U.S. Department of Education to focus on high schools. The high school model incorporates small schools or *house* systems, a core academic curriculum, and strong college- and work-based technical preparation programs. Not only does America's Choice aim to increase the rigor of students' course load, it also seeks to inculcate students, through a changed school culture, with the expectation that they will attend college (National Clearinghouse for Comprehensive School Reform & Northwest Regional Educational Laboratory, 2001).

Currently, there is no data to show the success of America's Choice in high schools. However, the 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). In fact, a study that examined the effects of America's Choice on student learning in the Rochester (NY) School District showed that students in America's Choice schools gained significantly more in reading and mathematics test performance than did students in other Rochester schools. The differences were moderate in the early-elementary grades (1–3) and stronger in the later grades (4–8). In grades 4–8, students in America's Choice schools averaged slightly more than two months of additional learning per year in comparison to students in other district schools (May, Supovitz, & Perda, 2004). There is hope that in time, the high school model will also create gains for students. Forthcoming research on this model will be available by the end of 2004 (Corcoran, forthcoming).

America's Choice has the potential to increase college access among high school students. The focus on academic rigor and the provisions for extra help and support for students who lag behind academically enable school staff to concentrate their efforts on leading all students to graduate, with each having completed the requirements for college attendance. Moreover, by including the expectation that all students will attend college as one of its goals, America's Choice enables students to plan early and compels schools to provide the information necessary for students to make good curricular and college application decisions.

AVID

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 program aims to restructure high school curriculum and pedagogy so that all students receive a college preparatory program (AVID Center, n.d.). The program reflects a belief that if students are given strong academic and social support, they can complete higher-level course work.

AVID can be implemented as a pullout program or a whole school change model. In either case, teachers are trained to use pedagogical tools that support AVID principles and practices, such as heterogeneous grouping. 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 (Walker James, Jurich, & Estes, 2001). Students are also given instruction in an AVID-developed writing-to-learn process, critical inquiry, and techniques for collaborating with other students (Swanson, 1994).

The class also helps students prepare for college by fostering strong social support. In AVID classes, students, teachers, and tutors get to know each other well and students form strong peer networks. These networks also provide information regarding the college application process. Students in an AVID program ultimately take college

preparatory classes that fulfill four-year college entrance requirements. In addition, they are tutored by tutors trained in AVID teaching techniques, attend assemblies and discussions with speakers from educational institutions and businesses, participate in educational and cultural field trips, and receive help with college and financial aid applications (James et al., 2001).

Two recent studies of the AVID program have found that AVID students take courses that are more rigorous in high school than those students who do not participate in AVID (AVID Center, 2003; Watt et al, 2004). For instance, seniors who participated in AVID in both Texas and California took AP courses and exams and college entrance exams at far greater rates than seniors in those states who did not participate in AVID (AVID Center, 2003; Watt et al, 2004). In fact, the study conducted by the AVID Center (2003) found that more than 25% of seniors enrolled in AVID programs in California, Texas, and Nevada took AP or IB English, foreign language, and history or government courses. They also found that 92.7% of the seniors who participated in AVID in Texas and 89.8% of the seniors who participated in AVID in California completed the course requirements for attending a four-year college. Similar results were found in a subsequent study. In Texas, seniors who participated in AVID enrolled in and took AP exams in science and upper-level science classes at nearly double the rate of the seniors who did not participate in AVID. In English and history, the seniors who participated in AVID took AP exams at three times the rate of non-AVID seniors (Watt, 2004).

In addition, data provided by AVID (www.avidonline.org) shows that 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. The data show the improvement was especially significant for African American and Hispanic students. African American students who participated in AVID passed the CAHSEE in math and English at a rate of 75.5%, while African American students who did not participate in AVID passed at a rate of 48.3%. Similarly, Hispanic students participating in AVID passed at a rate of 77.3% while the Hispanic students who did not participate in AVID passed at a rate of 48.4%. Similar results were found for the Class of 2005 in all of the districts for which AVID provided data.

These recent findings support an earlier study specific to increased student performance measured by state test scores, grades, attendance, and retention. In 1999, 26 Texas middle and high schools implemented AVID as part of the Comprehensive School Reform Demonstration program. A year and a half into implementation, AVID students were scoring higher on state-mandated year-end exams, had higher overall GPAs, and had much better attendance than students not enrolled in the AVID elective. Moreover, these students improved their own Texas Assessment of Academic Skills (TAAS) scores by more than 2.5% in mathematics and almost 2.5% in reading over the results of the previous administration of the exam. Students enrolled in the AVID elective were overwhelmingly from low-income, minority families where the parents had only an 8th-grade education. Although such students might be considered at risk for school failure, the students in the AVID program performed at the 80th percentile or higher in core academic classes and were overwhelmingly on target for a recommended graduation plan

that requires students to complete 24 credits. They also passed biology and algebra at rates far exceeding the Texas average: 65.7% versus 47.5% for Biology and 29.8% versus 20.8% for Algebra (Watt & Yanez, 2001). A follow-up study of these schools, undertaken a year later, found that TAAS passing rates rose 15% in math and 7% in reading for students who were enrolled in AVID for two years. In addition, attendance rates of the students participating in AVID rose more than 2.5 percentage points more than non-participants (Watt, Yanez, & Cossio, 2003).

According to AVID, the program enables students to attend four-year colleges at a rate that far exceeds the four-year college-going rate of minority students. Impressively, the AVID Center reports that 100% of seniors who were in the AVID program of study graduated from high school on time and that nearly 77% of those students were attending a four-year college the fall after graduation (AVID Center, 2003). Again, the results were particularly notable among African American and Latino AVID participants who enrolled in four-year colleges at 86.5% and 73%, respectively. In comparison, only 13.1% of African American seniors and 10.5% of Latino seniors in California were enrolled in four-year colleges in the fall following high school graduation (AVID Center, 2003). A different study showed that of the AVID students who enroll in college, 89% persist through at least the first two years and 85% of them expect to graduate within five years (www.avidonline.org; James et al., 2001).

Because AVID proactively seeks to raise achievement and increase college preparedness for students at risk, it deliberately addresses the predictors of college-going behavior and uses college entrance and completion as measures of its success, which makes it unique among the reform models examined in this study. AVID achieves its goals by providing students with tremendous amounts of social and academic support. It seeks to create a network of caring and informed adults around each student, establishes high expectations for students, and provides a means by which they can meet them. The strong focus on providing academic support enables AVID students to take high-quality and high-intensity courses and to succeed in doing so. For students who otherwise would have been enrolled in a noncollege preparatory track, AVID develops their social-psychological strength and propels them toward completing high school and enrolling in college. Thus, it makes college attendance a reality for underserved students. In addition, recent data shows that AVID benefits all students, to some degree, in schools in which AVID is implemented, regardless of students' enrollment in the program (Watt, Cossio, Mendiola, & Powell, 2004).

High Schools That Work

High Schools That Work (HSTW), sponsored by the Southern Regional Education Board, 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).

Although HSTW does not work expressly toward increasing college enrollment, it is designed to improve students' opportunities for further education by increasing the rigor of the curriculum. HSTW's central practices include holding students to high expectations[1], 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.

The HSTW curriculum integrates vocational and academic knowledge, thereby providing access to a relevant and rigorous curriculum for all students. It includes four credits of English and math, including Geometry and Algebra II, and three credits each of science and social studies. In each academic area, students complete college preparatory level work and take four credits in an academic or vocational major and two credits in a related field, which must include at least half a credit in computers.

High Schools That Work measures progress in a variety of ways, including standardized tests (NAEP assessments), student surveys, class enrollment, student persistence to graduation, the taking of college entrance exams (ACT and SAT), and the successful completion of the HSTW program. Based on these assessments, schools and students who participate in the HSTW program are improving their performance. More students are enrolled in higher-level mathematics and science classes; NAEP reading, math, and science scores have improved dramatically; more students have taken the SAT and ACT and are performing better than previous classes; postsecondary enrollment rates are increasing; daily attendance and graduation rates are increasing; and dropout rates and discipline referrals are decreasing. More important, vocational students completing a major at HSTW schools are outscoring similar students elsewhere on achievement tests (Southern Regional Education Board, n.d.; Bottoms & Mikos, 1995).

Despite the student gains in HSTW schools, the minority achievement gap still exists. African American students, while enrolling in college preparatory classes at the same rate as white students, were meeting HSTW achievement goals at nearly half the rate of white students over 10 years of implementation (Bottoms & Presson, 2000). This gap was attributed to lower expectations and a poorer quality of instruction for African American students within the schools. In response to this, Gene Bottoms, the program's founder and director, developed a plan to improve instruction and support for students in schools that are not meeting HSTW goals. He believes that if schools undertake the process of change set forth in the HSTW design, they will be able to provide all students, particularly those who traditionally have been underserved, with a high-quality education that will prepare them for postsecondary education and the workforce (Bottoms, 2001).

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[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) except students to work hard to meet high standards.

Studies by the U.S. Department of Education affirm the value of students taking vocational and college preparatory courses. One study showed that students in both college preparatory and vocational tracks (like students in HSTW schools) enrolled in college at nearly the same rate as students who were enrolled only in the college preparatory track, and at significantly higher rates than students in vocational-only tracks or students in the general track. Students enrolled in both college preparatory and vocational tracks made gains on mathematics and reading test scores between 8th and 12th grade, similar to those enrolled only in a college preparatory program (National Center for Education Statistics, 1999b).

The goals and restructuring components of HSTW are well aligned to increase college access and address the college-going predictors regarding academic rigor and access to social networks and information. Of particular importance is that HSTW serves students who were previously tracked in vocational and general education programs. Its success, therefore, is magnified for students of color and those from low-income families who are disproportionately enrolled in lower, non-college preparatory tracks (Lee & Bryk, 1988).

By linking vocational and academic curricula, schools enable students not only to prepare for a career, but also to gain a greater understanding of the core academic subjects and to succeed at the postsecondary level, even if attending college was not their original intent. The academic component of HSTW ensures access to postsecondary education and limits the possibility that students will have to take remedial courses once enrolled. In addition to a relevant and rigorous curriculum, HSTW incorporates high expectations and early planning, both of which are necessary for students to develop the ability to apply and gain admissions to institutions of higher education.

Talent Development High Schools

The Talent Development High Schools (TDHS) model was developed by the Johns Hopkins Center for Research on the Education of Students Placed at Risk (CRESPAR). The program was designed 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.

Smaller learning communities that create more personalized learning environments, foster close relationships between students and adults, and provide focused and relevant learning opportunities that promote student success are a central feature of TDHS. Because many 9th graders entering large urban high schools are not academically prepared for high school level work, the TDHS design includes Ninth Grade Success Academies that give students the social and academic supports and opportunities they need to transition to high school.

The TDHS 9th grade curriculum includes double doses of mathematics and English, whereby students take a transition to advanced mathematics class paired with Algebra I and a strategic reading course paired with English I. Students also take a freshman

seminar course to learn study skills, social skills, and participate in education planning and career exploration. After 9th grade, all students enter one of several career academies that integrate occupational curricula and provide work-based learning opportunities for students. In the 9th grade and career academies, all students enroll in a common core curriculum made up of college preparatory courses supported by instructional techniques and extra help opportunities that help students successfully complete these courses (Philadelphia Education Fund, 2001).

Other components of TDHS designed to increase student achievement include extended instructional periods of 80 to 90 minutes in a 4x4 block schedule and "Twilight School." In the 4x4 block schedule, students take four classes a semester and move together from class to class to provide students with a small core of teachers and peers with whom they interact consistently. Twilight School is an after-hours program offered to disruptive or truant students, or to students returning from incarceration, in an effort to keep them in school.

The TDHS program has demonstrated positive effects on school climate and student attendance, achievement, promotion, and dropout rates (McPartland, Balfanz, Jordan, & Legters, 1998). For example, in two Philadelphia TDHS programs, the percentage of first-time freshmen passing their core courses (English, Algebra I, and science) jumped from 24% to 56% after the first year of TDHS reforms. Match control schools saw an increase of only five percentage points (from 34% to 39%) during the same period. Consequently, a greater percentage of students were promoted to 10th grade—with more credits—than the previous year's class; promotion to the 10th grade increased by 47% at one school and by 65% at the other. Match control schools saw a decrease in their promotion rates over the same time. Also, 9th graders tested in Philadelphia improved their 8th -grade Stanford 9 mathematics scores by an average of 3.5 NCEs (normal curve equivalents) in TDHS programs, while scores of students in the control schools fell by an average of 0.2 NCEs.

Studies that focused on schools in Baltimore also showed increased student achievement by various measures. Ninth graders who took the Talent Development double-dose sequences of English and mathematics made average gains of one grade equivalent in reading and more than half a grade equivalent in mathematics over a four-month period as measured by the Comprehensive Test of Basic Skills. They compared favorably to students in control schools who took non-Talent Development double dose classes and gained less than one-third of a grade equivalent. The first class involved in Talent Development in Baltimore's Patterson High School also showed dramatic improvement in persistence toward graduation (reduced drop-out rate and increased passing to next grade) compared to earlier classes (McPartland et al., 1998).

Recent studies of Talent Development showed similar results (Kemple & Herlihy, 2004; Balfanz, Legters, & Jordan, 2003). Kemple and Herlihy (2004) examined the effectiveness of the model in the first three years of implementation in five comprehensive high schools in an urban district. Overall, it found that Talent Development "produced substantial gains in academic course credits earned and promotion rates and modest improvements in

attendance” (ES-5). For example, among first-time 9th graders, the percentage of students earning at least one English credit for the year rose 10.8% during the study period, while in the comparison schools it rose only 1.4%, demonstrating a 9.4% impact as a result of Talent Development. Similarly, Talent Development students earning at least one Algebra credit for the year rose 27.3%, while in comparison schools it rose only 8.9%, showing an 18.5% impact (Kemple & Herlihy, 2004).

The study conducted by Balfanz, Legters, and Jordan (2003) also looked at the impact of Talent Development on 9th graders, this time focusing on instruction in reading and mathematics. By comparing pre- and post-test results of Talent Development and match schools, it found that students in Talent Development schools significantly outperformed students in the match schools in both reading and Algebra. In addition, students in Talent Development high schools gained a half year more in grade equivalents in mathematics and seventh months more in grade equivalents than did students in the match control schools. Furthermore, the study showed that the positive effect of Talent Development held true for students from all levels of prior achievement, suggesting that Talent Development benefits all 9th grade students, not just those who are furthest behind (Balfanz, Legters, & Jordan, 2003).

While addressing the needs of low-resource schools, TDHS also deals with the predictors of college attendance. By placing students in smaller learning communities, 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. This sustained academic and social support enables students to make academic gains and to garner the information necessary for college attendance. The close relationships formed between students and teachers create greater opportunities for teachers to individualize learning and to prevent students from falling through the cracks.

The program also holds all students to the same high expectations and provides the support that enables students to meet them. It builds structures and processes designed to assist students who are behind or truant, thus making a strong attempt to reach *all* students. It is clear that the model works to develop a strong organizational push for all students to succeed.

First Things First

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 (Quint, 2001). The model calls for improving the human dimensions of schooling by creating more personalized relationships among teachers, students, and the students’ families as a means to improve student achievement.

FTF aims to change school structure, pedagogical practices, teacher accountability, and governance to create environments in which students and adults are engaged in learning. To achieve this goal, students and teachers are grouped in small learning communities (SLC), which students select based on their interest in the SLC's thematic focus. The same group of students and teachers stays together for multiple years, and staff is redistributed during core instruction (initially language arts and math) so there is a student-to-adult ratio of 15:1 for as much time as possible.

FTF 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. This is designed to ensure closer monitoring of students and greater support for them as they work toward accomplishing their academic goals. The model also implements high, clear, and fair standards for academic achievement and behavior. It requires schools to provide multiple ways for students to learn, perform, and be recognized (Institute for Research and Reform in Education, n.d.).

Although a relatively new model, research has documented that FTF has been successful in Kansas City, Kansas, where it was piloted in every school in the district. High school dropout rates for students moving between 9th and 10th grade were down 50%; 30% more students made the honor roll; and 20% more seniors graduated from high school (Institute for Research and Reform in Education, n.d.). In addition, in the first two years of implementation, attendance rates rose nearly 5% and graduation rates rose 10%—from 60% to 70%. At the same time, the racial achievement gap closed dramatically from a spread of 19 percentage points to a spread of only 10 percentage points, with both minority and non-minority students achieving at high rates. Similarly, the economic achievement gap decreased from 15 percentage points to 9 percentage points, again, with both groups achieving at higher rates. Finally, data from the first three years of implementation shows that the percentage of 11th graders reading at proficient or advanced level rose from 25% in 2001 to 34% in 2003 and the percentage of 11th graders reading at an unsatisfactory level decreased from 45% in 2001 to 28% in 2003 (Moore, 2004). Additional research will be available in 2005 (Quint, forthcoming).

FTF's strong focus on improving the affective relations within the school is unique, bringing adults (at home and at school) into more longstanding, respectful, and mutually accountable relationships with students. Through such relationships, FTF affords students the academic support and access to social networks that are recognized as key to high achievement and college preparedness. FTF also focuses on improving and enriching the core curriculum with high quality standards-based learning activities and instructional strategies, and teaching in ways that engage all students in standards-driven learning. FTF's combination of strategies has the potential to improve student achievement and college preparedness.

Coalition of Essential Schools

In 1984, Ted Sizer published *Horace's Compromise* as part of the *Study of High Schools* (Sizer, 1984). This seminal report indicated that high schools were not providing students

with strong intellectual or emotional development. Sizer began to visualize schools that would address the failures of the comprehensive high school. He particularly focused on creating schools that would teach students to think well. These schools became the basis for the Coalition of Essential Schools (CES). Coalition schools are designed to create strong relationships between and among students and adults. Although Coalition schools take a variety of forms and implement the common principles in ways that best meet their needs, they all seek to create strong relationships that can provide strong academic and social support to students (Coalition of Essential Schools, 2001). CES principles also emphasize the value of family participation and teacher collegiality in the education of children and adolescents. Largely due to their emphasis on personal relationships, 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).

Many of the conceptual features of CES are inherent in numerous newly developed, non-traditional public schools. For instance, in the late 1990s, because of the success of Central Park East High School, a number of smaller high schools in New York City implemented the Coalition's basic principles. The culture, structure, curriculum, instructional practices, and forms of assessment are dramatically different from those used in traditional comprehensive high schools (e.g., students typically study fewer but more in-depth topics, working closely with adults in and outside of the school, and are assessed on performance rather than standardized tests).

Among both large and small schools that implement the common principles across the board (referred to as high implementing schools), there seems to be a significant increase in college access for students, especially underserved students. In snapshots of data from Massachusetts and Maine, CES noted that in Coalition Comprehensive School Reform Demonstration project schools, the percentage of students passing the state achievement tests rose dramatically from the base year of testing (CES, 2002a). A survey of 41 high implementing schools involving 1,010 students revealed that 84% of graduates enrolled in two- or four-year colleges, compared to 63% of high school students nationally who enrolled in postsecondary institutions immediately upon graduating from high school (www.essentialschools.com, 2002). Furthermore, 82% of African American and 84% of Latino CES graduates were enrolled in college, compared to national averages of 59% and 42%, respectively (Coalition of Essential Schools, 2001).

In their study of the Julia Richman complex in New York City, which houses five small CES schools, Darling-Hammond, Ancess, and Ort (2002) found that in the first five years of implementation, 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. Seventy-three percent of the 1994 9th grade cohort graduated from the schools in the Julia Richman complex, in comparison to 49.7% of students from the same cohort citywide. Within six years of their freshman year, 84.6% of the 9th grade 1994 Julia Richman cohort had graduated, in comparison to approximately 70% of the cohort citywide. In 1998, 91% of the Julia Richman graduates went to college. The researchers attribute the success of these schools to their small size and the small size of

the classes, the personalization afforded by the size and formal advisement structures, and the intense focus on curriculum and instruction, including an emphasis on explicit teaching of academic skills—all key principles of the CES model (Darling-Hammond, Ancess, & Ort, 2002).

CES seeks to fundamentally change high schools and provide the social and academic support found generally lacking in comprehensive high schools. In the process, it prepares students to successfully participate in postsecondary education. Coalition schools have universally high expectations that are articulated clearly to all students. For example, the majority of CES schools (78%) require students to take rigorous course loads. They include three or more years of each core curricular area (English, math, science, and social studies), whereas nationally, only 18% of schools have similar graduation requirements (Coalition of Essential Schools, 2002b).

Such requirements not only emphasize the school's expectations for students, but also compel students to take courses that will prepare them for college, such as mathematics beyond Algebra II. CES schools encourage students to take college preparatory classes. Students are also urged to prioritize the development of critical thinking skills beyond basic skills found in comprehensive high school curricula. Finally, by involving the community and parents in the development of the school and its practices, these schools bring the curricula to bear on students' experiences. The schools assist in the development of strong adult networks that can provide social and academic support for students.

GE Fund College Bound

While some reform models aim to change high schools around the country, others work in their communities to change local high schools. One such program is the General Electric (GE) Fund College Bound program. It is designed to encourage underperforming schools located near GE facilities to use whole-school change to significantly increase the college-going rate (Brandeis University, 2000). 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. Similar to the other reform model developers, the GE Fund operates under the belief that in order for staff, students, and communities to be fully invested in whole-school change, the primary stakeholders within the school must design it. Therefore, the GE Fund provides continued financial and personnel support for schools to create their own reform programs.

The programs are designed to fundamentally change the school structure and create conditions for sustained improvement. Some of the more common features of change include partnering with a university; improving and enhancing the curriculum and instruction, such as by adding new AP classes; rearranging staff to create teams and student advisories; creating new business partnerships; and increasing computer and science lab equipment. In addition to providing the funding to alter structural factors, the GE Fund supports networking and best-practice sharing sessions within and between the schools in the program (Brandeis University, 2000).

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% to 159.1%. In addition, 76% of all GE Fund College Bound graduates attend college, compared to approximately 71% of students who enroll within two years of high school graduation nationally. The difference was particularly profound among students whose parents had little or no college education, and among Latino students. Among those graduates who enrolled in college, 87% of GE Fund College Bound students finished their first year of college; in comparison, only 70% of college freshman nationally did so. Graduates of GE Fund College Bound high schools also were 27% less likely than non-College Bound students to drop out of college without completing a degree (Brandeis University, 2000). Results of further research will be available in 2005 (Brandeis University, forthcoming).

The success of GE Fund College Bound can be attributed to the program's focus on structural changes aimed at preparing students for college. The program focuses on providing high-quality instruction in quality courses. Schools are encouraged to restructure in ways that provide more social support and increased individual attention to students both inside and outside of the school. This is often lacking in high schools, particularly those attended by low-income and minority youth (McDonough, 1997; Powell, Farrar, & Cohen, 1985). In doing so, the GE Fund College Bound program addresses factors that most crucially affect college attendance.

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 (Ancess & Ort, 1999; Raywid, 1994). There are three major forms of small or personalized learning environments:

1. *Schools-within-schools (SWS)* are established by dividing an existing school into small units. This is the most common approach taken by districts or schools that want to provide a small learning environment. 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.
2. *Subschools* are individual schools within one building. Each has its own principal and staff, as well as its own portion of the building.
3. *Freestanding small school*s 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.

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 noncollege-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). In a career academy, teachers not only work together, but also in partnership with local businesses, to relate core academic material to the specific field. The business partners serve as curricular advisors, mentors, suppliers of work opportunities, and financial supporters.

Structurally, career academies are designed to be flexible to maximize academic learning time for students, including providing time for students to participate in work-based learning. They also provide common planning time for teachers, which is a critical step in restructuring schools to provide greater academic support (Lee & Smith, 1994, Lee, Smith, & Croninger, 1995). By implementing strong college preparatory curricula and expectations, career academies also provide students with crucial aid in the college planning process (Trybus & Li, 1998).

Early studies of career academies suggested that they raise academic achievement, significantly reduce dropout rates, and increase both attendance rates and the number of credits earned toward graduation among students considered most at risk (Kemple & Snipes, 2000). For example, in this study, of nine high schools and their career academies, academy students had a daily attendance rate of 82%, versus 76% in the non-academy portion of the school; 40% of academy students earned credit toward graduation, while just 26% of those in the remainder of the school did so; twice as many academy students completed the basic core curriculum (four English, three social studies, and two mathematics and science courses) as did students in the rest of the school; 51% of academy seniors applied to college, compared to 35% of non-academy students. Another study found that career academy students' grade point averages were between a quarter and a half point higher than those in the non-academy control schools, and their graduation rates were twice that of the control schools (Elliot, Hanser, & Gilroy, 2001). Finally, the early studies showed that in comparison to students in the same high schools' general academic programs, students in career academies attended school more frequently and had higher grades and graduation rates (Elliot, Hanser, & Gilroy, 2002).

However, a new study of career academies suggests that their impact on educational attainment might not be as significant as once thought (Kemple, 2004). In this study, a follow-up to his earlier studies, Kemple (2004) examined the effects of career academies on students' educational outcomes and labor-market experiences four years after they were scheduled to have graduated from high school and found, for example, that male students from the academy sample who enrolled in postsecondary education had lower attrition from postsecondary programs than did male students from the non-academy sample. The study found that career academies do have a significant impact on the labor market outcomes for young men and for students who entered the school at medium and high risk of dropping out of high school.

The results of this study are mixed and suggest that for young men and for the most at-risk students generally, career academies provide an opportunity to improve educational outcomes by preventing dropout and by increasing the likelihood that those that do enroll in postsecondary education (either college or technical training) will persist for a longer duration.

Nonetheless, career academies can prepare at-risk students for college through multiple venues inherent within the structure of the academy. Studies have shown that the single greatest factor affecting improved student outcomes in career academies was the interpersonal supports created by the small learning communities and the relationships with mentors and other people in the business community who support academic endeavors (Elliot et al., 2001; Kemple & Snipes, 2000; Trybus & Li, 1998).

The common core academic college preparatory course is another important factor potentially capable of enhancing students' ability to attend and succeed in college. An increased awareness linking the purpose and role of academic coursework to the world of work helps, as students apply acquired classroom knowledge during their internships. The instructional and experiential approach allows students to engage in their coursework while exploring future career possibilities. By providing that information, the career academies make it possible for students to plan early and fulfill the academic requirements for college entrance.

Like schools-within-schools, subschools are small in size and often theme-based, frequently to match the vision and mission of the school. A theme can serve as an organizing principle for the school and gives the faculty a focus on which they can develop curricula and arrange activities. For example, a school dedicated to creating a better future through democratic participation might organize its curriculum based on the theme of social justice or democratic process. Subschools are individual schools that share a building with other schools, each with their own administration, staff, and space. They typically share large spaces, such as the gym and auditorium, and some resources, such as custodial staff (Ancess & Ort, 1999; Gladden, 2000). They may also share the building with non-school services.

The Julia Richman Complex in New York City (formerly Julia Richman High School) is perhaps one of the best examples of a complex of subschools. The high schools in the Julia Richman Complex enroll low-income and minority students. 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. A building manager and leaders from each school serve on the building council that manages the campus. Although each school in the complex is an autonomous entity, they come together for sports and student activities, which would not be possible in the individual schools. The four high schools within the complex have the highest graduation rates among the New York City reform models and an 89% college-going rate among graduates (Ancess & Ort, 1999). In addition, the dropout at rate at Vanguard, one of the

schools in the complex with the most “challenging” students, is only 4%, compared to 20% percent citywide (Toch, 2003).

Like career academies, the small size of the subschools (as developed at the Julia Richman Complex) facilitates student learning. Many of the schools use innovative organizational principles to create environments in which the school policies, practices, expectations, norms, and rewards—generated by both staff and students—demand high achievement and provide coherence. Teachers have the chance to work with each student individually, find a niche where the student can enter the curriculum and become engaged, and follow their progress. Fundamental to these schools is the professional community that exists among the staff to ensure that teachers develop networks and learn from one another, thus creating more effective learning communities (Ancess & Ort, 1999).

The academic support for students as a consequence of having teachers know them well is crucial to their success and their ability to complete rigorous coursework. Concomitantly, the support provided to students through the relationships they form with their peers gives them the strength to persevere through challenging academic and personal experiences. The coherence and support inherent within a subschool have significant implications for improving students’ success in higher education.

Similarly, freestanding small schools focus on personalizing students’ educational experience by enrolling 600 or fewer students. 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. Powell et al. argued that the result of such *test tasting* was that students graduated from high school ill-prepared for college and the workforce.

Freestanding small schools are typically designed to provide all students with strong social supports in addition to a common curriculum. They are often designed to give teachers a role in governance and decision-making and to provide a variety of means for community involvement (Gladden, 2000). While small schools vary in size and conception, they are frequently part of a choice system in which students and parents can opt to enroll in one of a number of schools, thus providing more incentive for active student engagement (Meier, 2000b).

In a large literature review of the effect of small schools on students, Cotton (1996) found that students in small schools participated in a wider range of activities, took on more responsibility, and enjoyed their participation more than students in large schools. This same review also showed that SAT scores and college-acceptance rates of students from small schools were equivalent or superior to those at large schools. In a study of small

schools in Chicago, Wasley et al. (2000) found that while the mean dropout rate in non-small schools was 7.82%, it was only 5.14% in freestanding schools; students in freestanding schools had slightly higher grade point averages (1.98 vs. 1.96) than students in larger schools; students in freestanding schools gained .06 more grade equivalents in reading, although they lost .21 more grade equivalents in mathematics than students in non-small schools. These findings indicate that small schools can increase student engagement, which most often results in increased student achievement.

All varieties of small schools address the predictors of college going. Each seeks to provide students with more personalized learning experiences, increased rigor, increased relevancy, and more social support. Smaller learning environments where teachers are able to know their students well prevent students from falling through the cracks, both academically and socially. The opportunity for teachers to personalize learning experiences enables them to focus on the learning styles and needs of each of their students and to engage them in learning. Furthermore, when teachers have the time to focus on individual students, each student can be given help in areas that would otherwise prevent him or her from succeeding in academically rigorous courses. These characteristics of small schools seem ideal for preparing minority and low-income students for success in postsecondary education. It is worth noting, however, that there are those who are concerned that if small schools, regardless of their form, do not address the underlying racism and classism that has prevented minority and low-income students from succeeding in large schools, they will not minimize the academic achievement and educational attainment gap (Perry, 2003; Wasley, 2003).

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.

The International Baccalaureate

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:

1. The Theory of Knowledge, an interdisciplinary curriculum designed to help students connect their experiences in and out of the classroom,
2. Service learning, and
3. An independent research project.

The program is implemented in the 11th and 12th grades. All students complete coursework in six academic subjects (first language, second language, individuals and societies, experimental sciences, mathematics, and arts and electives). The program requires students to 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 (International Baccalaureate Organization, n.d.).

In its roughly 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% 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.). A further examination of individual schools' websites also indicates that their graduates are accepted at prestigious universities around the United States. (See

Baltimore City College website at: http://baltimorecitycollege.org and Schenectady High School website at: www.schenectady.k12.ny.us/IB/homepage.htm.) Evidence of the value placed on this type of college preparatory program can be seen in some state initiatives. To encourage participation in the IB program, states such as Florida offer full scholarships to state universities to students who receive an IB diploma.

IB is well aligned with college curricula and expectations. The entire program, from its curriculum and instruction to its theory of action, strives to develop students into civic-minded, critical-thinking adults who are prepared for postsecondary education. This is significantly different from the nature and function of the traditional comprehensive high school's mission, which is diffuse, offering a plethora of extraneous courses. The IB program provides more than an academically demanding curriculum—it exemplifies academic press by establishing a demanding climate (setting rigorous demands with regard to course content and coverage, setting high work standards for students, and treating students similarly). Teachers, and students experience a normative emphasis on academic excellence and conformity to specified academic standards, while also recognizing the need to address individual and unique talents through personalized and relevant learning.

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. Dual enrollment programs vary greatly, but generally are based on five principles:

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).

Some dual enrollment programs are designed specifically to increase access to higher education for minority or low-income students. In Phoenix, Arizona, the Achieving a College Education (ACE) and its sister program, ACE Plus, are designed for this purpose. ACE recruits the majority of its students as sophomores from high schools that enroll predominantly low-income, minority, and potential first-generation college students and are

feeder schools for local community colleges (Van Buskirk & McGrath, 1999). All students take classes that enhance their high school curricula and "focus on the competencies the students need to succeed in college—critical reading and writing skills, oral expression, mathematics and computer skills" (Van Buskirk & McGrath, 1999, p. 32).

ACE courses are taught on Saturday mornings and during the summer on the college campus. Students are granted some of the privileges of college students and are held to college-level standards and expectations regarding homework, attendance, and preparedness (Van Buskirk & McGrath, 1999). The ACE program also works closely with parents, high school faculty, and guidance counselors in an effort to maintain contact with the students, help guide their academic pursuits, and provide access to information and counseling about higher education, scholarship opportunities, and the financial aid available. The ACE Plus program reports that 96% of its students graduate from high school (Achieving a College Education, 2001) compared to the district dropout rate of nearly 50% (American Council on Education, 2000).

Another model of dual enrollment is College Now, based at Kingsborough Community College in New York and now part of the entire City University of New York (CUNY) system. College Now tests students during their junior year of high school to determine whether they are ready for credit-bearing college courses or if they still need help in reading, writing, or math. Students deemed in need of help are enrolled in remedial courses. College Now courses are taught by college faculty but are designed specifically for high school students (Bailey & Karp, 2002). This program, therefore, exposes students to college-level work prior to enrollment and helps them become academically prepared to undertake credit-bearing college courses upon enrollment. Kleiman (2001) found that College Now graduates were less likely to need remediation when they entered CUNY schools than were other CUNY students. They were also twice as likely to graduate from college.

Perhaps as an indication of its success, College Now has been expanded to all of the undergraduate institutions in the CUNY system, including the four-year colleges, and is now being piloted as the College Now Nine program, which begins in the 9th grade. The College Now Nine program targets students who attend school regularly, but seem likely to fail their Regents exams. In addition to working with students in small groups and focusing services to meet their needs, it provides an opportunity for high school and CUNY faculty to work together to improve instruction (Kleiman, 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 which students are taking advantage of this opportunity--is this a growing trend among all students, or is it limited to certain students looking for enrichment. 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). Despite the increasing popularity of dual enrollment programs, there is

little national data to demonstrate that they are successful, particularly for low income or first generation students. In fact, local data show that dual enrollment programs predominantly serve white, middle class students, with the exception of programs that specifically target minority or low-income students (Crossland, 1998; Windham, 1997).

Programs such as ACE and College Now combine college preparatory classes, college courses, and networks for academic and social support to expose students to the rigor and experience of college life. Programs based on the five principles of dual enrollment 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). More important, dual enrollment programs provide a seamless transition, academically and emotionally, between high school and college.

Middle College and Early College High School

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 (LaGuardia Community College, n.d.). The concept was developed in response to concerns that falling high school graduation rates and poor academic preparation for college-level study were preventing the New York City Public Schools from feeding a sufficient quantity or quality of students into the city college system. 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. Additionally, the founder, Janet Lieberman, asserted that adolescents in the later years of high school were developmentally closer to college students than they were to younger high school students and should be educated with college students (Wechsler, 2001).

Today, the concept of the middle college high school has been recreated across the country, but is more varied in its configurations. Nonetheless, the principles remain the same, as does the focus on addressing the needs of traditionally underserved students who have not been well served by comprehensive high schools. 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%, with 75% of those students graduating from high school. Of the graduates, 78% go on to college. In comparison to national data for similar at-risk students, these are positive

gains (Lieberman, 1998). At the original middle college high school—LaGuardia Community College—there is an 86% attendance rate, a 95% graduation rate, and 75% college attendance rate. These numbers alone are impressive, and are particularly strong in comparison to the data from the general New York City public schools where students would otherwise be enrolled.

Additional evidence of middle college high schools' success comes from a 2002 study by the Appalachian Educational Lab that examined five high schools located on college campuses. Four of these high schools could be classified as middle colleges, while one is more of a traditional dual enrollment program. At each of the schools, the researchers found that students and teachers benefited from the smaller environment and the location of the school on a college campus. The researchers noted that the high school students benefited from having increased freedom, and therefore greater responsibility for themselves, and from having classes with older students who served as role models for the high school students and as an impetus for the students to behave more maturely, as they did not want to be recognized as high school students. In addition, students learned to participate in discussions and engage in academic debate, developing critical thinking skills through enriched learning and improved the quality of their high school classes.

The researchers also found that teachers benefited from being able to work closely with college faculty, as it allowed them to more carefully align the content of their courses to postsecondary education. Very little data is available to determine the effectiveness of these schools. However, using the California State Standardized Testing and Reporting website (http://star.cde.ca.gov) the researchers from AEL determined that higher percentages of students at two of the schools (Contra Costa and Delta) scored in the advanced, proficient, and basic ranges on the state English and Algebra I assessments than did students in the rest of the district that they serve. In addition, students at Mott Middle College in Michigan drop out of high school at a significantly lower rate than students in the districts that the school serves (AEL, 2002). Finally, 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%, with all but two above 90% (MCNC, 2003). By and large, these graduation rates are on par with the best schools in the districts in which the schools are located.

Although the middle college high schools' approach is sometimes reduced to dual enrollment, it can be a far more comprehensive approach to increasing student achievement. More important, the model can encourage, support, and prepare low-income and minority youth for college by providing multiple points for students to become engaged in the curriculum; allowing students to make academic gains at their own pace, which in turn encourages them to pursue further learning; and providing strong support systems for students, both academically and socially. These components create a *holistic model* that raises aspirations, reduces fear and anonymity, provides a sense of future, and creates success where failure was previously the norm (Lieberman, 1998; Middle College, n.d.).

By placing students in a college environment as they develop future plans, middle college high schools provide access to both sources of information, a critical component that enables students to go to college (McDonough 1997; Cabrera & La Nasa, 2000a, 2000b). Middle college high schools also benefit students by closely aligning high school and college curricula. The overlap between high school and the beginning of college allows students to save time and money by not taking the same courses in both institutions.

Tech Prep and 2+2 Articulation

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. The program is administered through state-sponsored initiatives that combine vocational subjects and rigorous academics, and align the coursework for high school juniors and seniors 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).

Due to its multifaceted nature, measuring success in Tech Prep is complicated. 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). A 2001 study of Tech Prep students' transcripts, as well as the transcripts of matched comparison groups, found that within three years of high school graduation 65% of the Tech Prep students enrolled in postsecondary education (Bragg, 2001 as cited in Bailey & Karp, 2003). The same study, however, also showed that the Tech Prep graduates were more likely to enroll in two-year colleges (as opposed to four-year colleges) or seek full-time employment than were the comparison group.

A further study showed that in a sample of 330 graduates from high schools that were paired with community colleges, 70% of Tech Prep students were either currently enrolled or had graduated and 30% had dropped out, while only 65% of non-Tech Prep students were currently enrolled or had graduated and 35% had dropped out (Brodsky et al., 1997). These data suggest that Tech Prep has the potential to improve academic outcomes and college enrollment for underrepresented students who benefit from academic programs that are tied to real world learning experiences.

Although Tech Prep, or 2+2 Articulation programs, are not explicitly designed to increase academic opportunities for students, they do help at-risk students in the college-

going process by making the transition from high school to postsecondary education less difficult and by preparing students for the work that will be expected in postsecondary institutions. More important, Tech Prep and 2+2 Articulation programs create a systemized process to postsecondary enrollment and offer more rigorous coursework for students. As a result, they decrease duplication of coursework and reduce the need to take courses that will not receive credit in two- or four-year institutions. This saves money and time for students who intend to enroll in professional and technical postsecondary programs (2+2), as well as for those who want to pursue academic programs in community colleges (U.S. Department of Education, n.d.). However, within these programs, much of the responsibility for preparing students for postsecondary education is placed on a higher education institution or system. The responsibility must be balanced so that impetus and direction for change comes from both the K–12 and higher education systems.

Project GRAD

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.

Scholarships for students are a major component of the program's foundation. Students in Project GRAD schools are eligible for a $1,000 to $1,500 college scholarship for each year of college, provided they fulfill a number of requirements, including on-time high school graduation; maintenance of a 2.5 GPA in college preparatory courses; attendance at Summer Institutes; and enrollment in higher-level courses, including Algebra II (Project GRAD, 2003).

The Summer Institutes, the second component, are created by Project GRAD and local college and university faculty to increase college awareness, develop skills and content-area knowledge, and expose students to college expectations. The Summer Institutes take place on college campuses and are taught by college professors.

The third component of the program is the three-week Summer Bridge program, which teaches study skills that students will need during high school. This component is designed to ease the transition from middle to high school (Project GRAD, 2003).

The fourth component, Communities in Schools (CIS) and Parent University (PU), is used at all grade levels (K-12). CIS provides schools with social workers who work with students and their families, helping parents get more involved in their children's education and addressing, together, problems that are interfering with learning. This component includes an annual "Walk for Success" during which volunteers visit the homes of entering 9th grade students to explain the scholarship program and to encourage

parents to sign a contract committing their children to the program. PU also provides the opportunity for parents to continue their own education through adult literacy and continuing education classes (Project GRAD, 2003).

Finally, Project GRAD utilizes a discipline management program, Consistency Management and Cooperative Development (CMCD), throughout the feeder school system. CMCD creates consistent rules and consequences for students, facilitates safe classrooms, and builds students' self-discipline and self-esteem (Project GRAD, 2003).

Project GRAD measures student success by increased graduation and college attendance rates. Furthermore, model developers work with schools to look at the academic predictors of college-going to assess its impact along the pathway to graduation and to make any necessary adjustments to continuously improve student learning. At two high schools in Houston, Texas, student graduation rates have increased dramatically. Prior to implementation, the pilot site, Jefferson Davis High School, had an average of 175 graduates per year. In 2003, they had of 308 graduates (Project GRAD, 2003). Similarly, Jack Yates High School has seen its graduation rate more than triple in the three years since implementation (Project GRAD, 2003). More impressively, at a time when the district has seen the number of graduates decline in spite of growing enrollment, both Davis and Yates have seen their four-year graduation rates increase from 37.1% (Davis) and 33.2% (Yates) in 1998 to 53.4% and 48.1%, respectively, in 2003. Jefferson Davis also has seen its TAAS scores nearly double in mathematics and improve significantly in reading; enrollment in Algebra II has increased 55% in nine years; and the number of students taking SAT I has nearly quadrupled in the 12 years since the scholarship program began, as has the number of students scoring 1000 or better on the SAT (Project GRAD, 2003). At Davis nearly six times as many students used the Project GRAD scholarship to attend college in 2003 as had done so in 1984-1985. At Yates, over three times as many took and used the scholarship in 2003 as had done so in 1998 (Project GRAD, 2003). Additional data will be available in winter 2004 (Doolittle, forthcoming).

With minimal changes in the structure of the high school, Project GRAD works to encourage high school graduation and early preparation for postsecondary education. It provides students with academic and social supports and gives individual incentives (scholarships) to encourage them to work toward college attendance. Unique to Project GRAD is the deliberate attempt to involve the family in the school and to help families support their children's academic pursuits. Rather than just another scholarship program, Project GRAD has developed into a multifaceted initiative designed to encourage students to attend college.

Project GRAD offers the possibility of overhauling failing school systems as it co-opts entire districts. The program addresses and values the fact that preparation for college starts earlier than high school. More important, Project GRAD achieves some degree of alignment among institutions within the K–12 pipeline. It provides a seamless transition through the K–12 system and within the community by ensuring that cultural norms among elementary, middle, and high schools are similar (Consistency Management); students enter the next level of education prepared (Summer Institutes); and parents are

involved and contribute to their education (CIS and PU). Such reform enables school systems to focus on college preparation rather than on stopgap measures.

GEAR UP

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, n.d.). 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. The program seeks to eliminate all forms of tracking. 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.

Most important, GEAR UP begins its work with middle school students as opposed to federally funded TRIO programs, which have similar goals but start at the high school level. By starting in the middle grades, students and families gain the necessary information regarding college access prior to high school enrollment. Because course-taking decisions made in high school are critical to college entrance and success (McDonough, 1997; Cabrera, La Nasa, & Burkum, 2001), the early intervention provided through GEAR UP is critical.

More than a decade ago, the author of *All One System* (Hodgkinson, 1985) underscored the point that institutions of higher education depend on the quality of the K–12 system and the graduates it produces. Many new ideas and initiatives are emerging to link the systems, or at least recognize the value of higher education, and prepare students for this endeavor if they choose to continue. As reform initiatives continue to expand, model developers and researchers will need to conduct impact studies and to continuously evaluate the success of the models.

CONCLUSIONS AND RECOMMENDATIONS

College preparedness is a vast topic. This study intentionally limited the investigation to reform efforts that address academic and social school structure at the high school level. To varying degrees, the reform initiatives discussed 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).

Reforming high schools is complicated and requires fundamental institutional change. Implementation of such change is lagging. 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:

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.

Appendix: Models Chart

Model	Practices That Address College-going
Advanced Placement	• Rigorous curriculum • High expectations • Alignment with higher education
America's Choice	• Access to rigorous courses for all students • Early identification of struggling students to provide adequate support • Expectation that all students will enroll in college
AVID	• Elimination of remedial classes • Students taught academic skills necessary for success in rigorous courses and college • Close relationships between students and teachers, among students, and close ties to students' families ensure strong academic and social support
Coalition of Essential Schools	• Access to rigorous curriculum for all students • Individual attention and strong social support • Development of critical thinking skills • Personalized learning
Dual Enrollment	• Exposure to college expectations and experiences • Access to college information • Increased rigor of academic program • Alignment between K-12 and higher education
EQUITY 2000	• Increased rigor of mathematics classes • Increased availability of high-level mathematics classes • Increased academic support
First Things First	• Close relationships between adults and students and between school and families lead to strong social support • Academic support in the form of low student to teacher ratios during core instruction • High academic standards for all students

Model	Practices That Address College-going
GEAR UP	• Early information to students regarding college application process • Expectation of college attendance is established early • Alignment between K-12 and higher education
GE Fund College Bound	• Access to more rigorous courses • Increased counseling for students • Academic and social support provided by mentors for General Electric
High Schools That Work	• High expectations • College-preparatory curriculum
Project GRAD	• Alignment of K-12 curricula to improve academic preparation • Financial assistance to students • Transition programs • Family included to increase support for students and to increase parents' access to college information
Talent Development	• High, common expectations • Family and community participation leads to strong social support • Small learning communities lead to strong social and academic support
TechPrep/2+2 Articulation	• Alignment of high school and college curricula • Increased rigor of academic coursework • Guidance for students with regard to postsecondary options
Urban Systemic Initiative	• Enrollment in gate-keeping and upper-level mathematics courses • Improved instruction in mathematics and science courses leads to increased rigor

REFERENCES

Achieving a College Education. (2001). *ACE Plus fact sheet*. Retrieved July 6, 2004, from www.gc.maricopa.edu/aceplus/FactSheet.htm

Adelman, C. (1999). Answers in the tool box: Academic intensity, attendance patterns, and bachelor's degree attainment. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement. Retrieved July 6, 2004, from www.ed.gov/pubs/Toolbox/index.html

Adelman, Clifford (2004). *Principal Indicators of Student Academic Histories in Postsecondary Education, 1972-2000.* Washington, DC: US Department of Education, Institute for Education Sciences.

Alexander, K. L., Pallas, A., & Holupka, S. (1987, November). Social background and academic determinants of two-year versus four-year college attendance: Evidence from two cohorts a decade apart. *American Journal of Education. 96*(1), 56-80.

American Council on Education. (2000). *ACE: Achieving a college education.* Washington, DC: Academic Excellence and Cost Management National Awards Program. Retrieved July 6, 2004, from www.acenet.edu/programs/cost-awards/readAbstract.cfm?awardID=97

Ancess, J., & Ort, S. W. (1999). *How the coalition campus schools have re-imagined high school: Seven years later.* New York: Teachers College, The National Center for Restructuring Education, Schools and Teaching.

Antonio, A. L. & Bersola, S. H. (2004). Working Toward K-16 Coherence in California. In M. W. Kirst & A. Venezia (Eds.), (pp. 31-76). *From High School to College: Improving Opportunities for Success in Postsecondary Education.* San Francisco: Wiley and Sons.

AVID Center. (n.d.). AVID Literature Pack. San Diego, CA: AVID Center.

AVIDonline. (n.d.). Retrieved July 6, 2004, from www.avidonline.org

AVID Center (2003) Retrieved September 10, 2004 from http://www.avidonline.org/info/?tabid=4&ID=513#AVID_High_School.

Bailey, T.R. & Karp, M.M. (2003, November). *Promoting college access and success: A Review of credit-based transition programs.* Washington, DC: US Department of Education, OVAE.

Bailey, T.R. and Karp, M.M. (2002). *What role can dual enrollment programs play in easing the transition between high school and postsecondary education?* Washington, DC: US Dept. of Education, OVAE.

Bailey, T.R. and Matsuzuka, Y. (2003). "Integration of Vocational and Academic Curricula through the NSF Advanced Technological Education Program (ATE)." Paper presented at AERA Conference, April, 2004.

Balfanz, R., Legters, N., and Jordan, W. (2003). "Catching Up: Impact of the Talent Development Ninth Grade Instructional Interventions in Reading and Mathematics in High Poverty High Schools." Center for Social Organization of Schools, Johns Hopkins University.

Balfanz, R. & Legters, N. (2004). *Locating the dropout crisis.* Baltimore, MD:
Center for Social Organization of Schools, Johns Hopkins University. Retrieved September 1, 2004, from www.csos.jhu.edu/tdhs/rsch/Locating_Dropouts.pdf.

Balfanz, R., & Legters, N. (2001). *How many central city high schools have a severe dropout problem, where are they located, and who attends them? Initial estimates using the common core of data*. Cambridge, MA: Harvard Graduate School of Education, Civil Rights Project, and Achieve, Inc.

Baltimore City College. (n.d.). Retrieved July 6, 2004, from http://baltimorecitycollege.org

Barth, P. (2003). "A Common Core Curriculum for the New Century." *Thinking K-16,* vol 7 issue 1. Education Trust.

Berkner, L., & Chavez, L. (1997). *Access to postsecondary education for the 1992 high school graduates.* Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement. (NCES 98105)

Bottoms, G. (2001). *Closing the achievement gap by closing the design gap.* Atlanta, GA: Southern Regional Education Board, High Schools That Work (HSTW) Staff Development Conference. Retrieved July 6, 2004, from www.sreb.org/programs/hstw/publications/GB_SummerConf_2001

Bottoms, G. & Mikos, P. (1995). *Seven most-improved high schools that work. Sites raise achievement in reading, mathematics, and science. School and classroom practices that advance the performance of career-bound high school students: A report on improving student learning.* Atlanta, GA: Southern Regional Education Board.

Bottoms, G., & Presson, A. (2000). *Finishing the job: Improving the achievement of vocational students*. Atlanta, GA: Southern Regional Education Board.

Boyer, E. L. (1983). *High school: A report on secondary education in America.* New York: Carnegie Foundation for the Advancement of Teaching and Harper Colophon Books.

Braddock, J. H., II. (1990). *Tracking: Implications for student race-ethnic subgroups* (Report No. 1). Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.

Bragg, D.D. (2001). *Promising outcomes for Tech Prep participants in eight local consortia: A summary of initial results*. St. Paul, MN: National Research Center for Career and Technical Education.

Bragg, D. D., Puckett, P. A., Reger, W., IV, Thomas, H. S., Ortman, J., & Dornsife, C. (1997). *Tech Prep/school-to-work partnerships: More trends and challenges*. Berkeley, CA: UC Berkeley, Graduate School of Education, National Center for Research in Vocational Education. Retrieved July 6, 2004, from http://vocserve.berkeley.edu/Summaries/1078sum.html

Brandeis University, Center for Human Resources (2000). *Expanding college access, strengthening schools: Evaluation of the GE Fund College Bound Program*. Waltham, MA: Prepared for the GE Fund. Prepared for the GE Fund. Retrieved July 6, 2004, from www.ge.com/foundation/GEFund_CollegeBound.pdf

Brandeis University, Heller School. (Forthcoming). *GE Fund College Bound reporting and evaluation initiative*. Waltham, MA: Prepared for the GED Fund.

Brodsky, S. M., Newman, D. L., Arroyo, C. G., & Fabozzi, J. M. (1997). *Evaluation of Tech Prep in New York State: Final report*. New York State Department of Education. Retrieved July 6, 2004, from www.emsc.nysed.gov/workforce/techprep/docs/tpevalrp.pdf

Bryk, A. S. &. Driscoll, M. E. (1988). *The School as community: Theoretical foundations, contextual influences, and consequences for students and teachers.* Madison, WI: National Center on Effective Secondary Schools, University of Wisconsin.

Bryk, A. S., Lee, V., & Holland, P. (1993). *Catholic schools and the common good.* Cambridge, MA: Harvard University Press.

Burton, N. W., et al (2002). *Minority Student Success: The Role Teachers in Advanced Placement (AP) Courses.* The College Board, Research Report No. 2002-8.

Cabrera, A. F., & La Nasa, S. M. (2000a). *On the path to college: Three critical tasks facing America's disadvantaged*. University Park, PA: The Pennsylvania State University, Center for the Study of Higher Education.

Cabrera, A. F., & La Nasa, S. M. (2000b). Understanding the college choice process. In A. F. Cabrera, & S. M. La Nasa (Eds.), *Understanding the college choice of disadvantaged students: New directions for institutional research, No.107* (pp.5-22). San Francisco: Jossey-Bass.

Cabrera, A. F., La Nasa, S. M., & Burkum, K. R. (2001). *Pathways to a four-year degree: The higher education story of one generation*. University Park, PA: The Pennsylvania State University, Center for the Study of Higher Education.

Carnevale, A. P., & Fry, R. A. (2000). *Crossing the great divide: Can we achieve equity when Generation Y goes to college?* Washington, DC: ETS Public Leadership Office. Retrieved July 6, 2004, from www.ets.org/research/dload/CrossingDivide.pdf

Cavalluzzo, L., Jordan, W., & Corallo, C. (2002). *Case Studies of High Schools on College Campuses: An Alternative to the Traditional High School Programs.* Charleston, WV: Appalachian Educational Laboratory.

Center for State Scholars. (2003). Retrieved July 11, 2004, from www.centerforstatescholars.org

Checkley, K. (2001, October). Algebra and activism: Removing the shackles of low expectations: A conversation with Robert P. Moses. *Educational Leadership, 59,* 6-11.

Clark, R. W. (2001). *Dual credit: A report of programs and policies that offer high school students college credits*. Washington, DC: Pew Charitable Trust.

Coalition of Essential Schools. (2001). *Principles at work*. Oakland, CA: CES National.

Coalition of Essential Schools. (2002a). Retrieved July 6, 2004, from www.essentialschools.org

Coalition of Essential Schools. (2002b). Retrieved September 10, 2004 from http://www.essentialschools.org/pub/ces_docs/about/results/quickfacts.html.

The College Board. (1983). *Academic preparation for college: What students need to know and be able to do*. New York: Author.

The College Board. (2000a). *EQUITY 2000: A systemic education reform model. summary report 1990-2000*. Retrieved July 6, 2004, from www.collegeboard.com/prod_downloads/about/association/equity/EquityHistoricalReport.pdf

The College Board. (2000b). *EQUITY 2000 becomes a more integrated school services model under new leadership*. Retrieved September 1, 2004 from http://www.collegeboard.com/prod_downloads/about/association/equity/EQUITY2000.pdf.

The College Board. (2001a). *Advanced Placement course descriptions*. Retrieved July 6, 2004, from http://cbweb2s.collegeboard.org/ap/pdf/history_00-01.pdf

The College Board. (2001b). *The Advanced Placement program*. Retrieved July 6, 2004, from http://apcentral.collegeboard.com/program/0,1289,150-0-0-0,00.html

The College Board. (2003). *2003 National Summary Report Totals.* Retrieved July 6, 2004, from http://www.collegeboard.com/prod_downloads/student/testing/ap/sumrpts/2003/xls/national_2003.xls

Conant, J. B. (1959). *The American high school today: A first report to interested citizens.* New York: McGraw-Hill.

Corcoran, T. (Forthcoming). *Learning to think, thinking to learn: The evaluation of the America's Choice middle and high school comprehensive school reform designs*. Philadelphia, PA: Consortium for Policy Research in Education, University of Pennsylvania.

Cotton, K. (1996). School size, school climate, and student performance. In *School Improvement Research Series.* Portland, OR: Northwest Regional Educational Laboratory. Retrieved July 6, 2004, from www.nwrel.org/scpd/sirs/10/c020.html

Crossland, R. (1998). *Running start annual progress report, 1996-97.* Olympia, WA: Washington State Board for Community and Technical Colleges. (ED416921)

Darling-Hammond, L., Ancess, J., & Wichterle Ort, S. (2001). Reinventing High School: Outcomes of the Coalition Campus Schools Project. *American Educational Research Journal, 39(3), 639-673.*

Doolittle, F. (Forthcoming). *The national Project GRAD evaluation.* New York: Manpower Demonstration Research Corporation.

Education Trust. (2000, Spring). Honor in the boxcar: Equalizing teacher quality, *Thinking K-16*, 4(I), 16.

Education Week. (2001). National Science Foundation. Retrieved on September 1, 2004. http://www.edweek.org/context/orgs/nsf2.htm

Eisner, C. (Ed). (2001). *Advancing excellence in urban schools: A report on Advanced Placement examinations in the great city schools.* Washington, DC: Council of Great City Schools and The College Board.

Elliot, M. N., Hanser, L. N., & Gilroy, C. L. (2001). *Evidence of positive student outcomes in JROTC career academies*. (Prepared for the Office of the Secretary of Defense.) Santa Monica, CA: Rand (Corporate HQS), National Defense Research Institute.

Elliot, M. N., Hanser, L. N., & Gilroy, C. L. (2002). Career academies: Additional evidence of positive student outcomes. *Journal of Education for Students Placed At Risk*, *7*, 71-90. Mahwah, NJ: Lawrence Erlbaum Associates.

Epstein, J. L., Coates, L., Salinas, K. C., Sanders, M. G., & Simon, B. S. (1997). *School, family, and community partnerships: Your handbook for action*. Thousand Oaks, CA: Corwin Press. (ED415003)

Fine, M. (1991). *Framing dropouts. Notes on the politics of an urban public high school.* New York: SUNY.

Fry. R. (2004). "Latino Youth Finishing College: The Role of Selective Pathways." Pew Hispanic Center Report.

Gamoran, A. (1987). The stratification of high school learning opportunities. *Sociology of Education, 60,* 135-155.

Gamoran, A., & Hannigan, E. C. (2000). Algebra for everyone? Benefits of college-preparatory mathematics for students with diverse abilities in early secondary school. *Educational Evaluation and Policy Analysis, 22,* 241-254.

Gandara, P. (1999). Paving the way to higher education: K-12 intervention programs for underrepresented youth. Washington, DC: National Postsecondary Education Cooperative.

GEAR UP. (2000). Retrieved July 6, 2004, from www.ed.gov/gearup

Gehring, J. (2001a). Dual enrollment programs spreading [Electronic version]. *Education Week, 20*(32), 17-18.

Gehring, J. (2001b, April). The International Baccalaureate: 'Cadillac' of college-prep programs [Electronic version]. *Education Week, 20*(32)*,* 19.

George, P., & Aronson, R. (2003). *How do educators' cultural belief systems affect underserved students' pursuit of postsecondary education?* Honolulu, HI: Pacific Resources for Education and Learning.

Gladden, M. (2000). *Small schools: What's small?* (Occasional Papers Series 3.1). New York: Bank Street College of Education.

Gonzalez, E., O'Connor, K. & Miles, J. (2000). *How Well Do Advanced Placement Students Perform on the TIMSS Advanced Mathematics and Physics Tests?* Chestnut Hill, MA: The International Study Center, Lynch School of Education, Boston College.

Greene, J.P. & Forster, G. (2003). *Public high school graduation and college readiness rates in the United States.* New York: Manhattan Institute for Policy Research. Retrieved September 1, 2004, from http://www.manhattan-institute.org/html/ewp_03.htm.

Greene, J. P. (2002). *High school graduation rates in the United States* (Rev. ed.). New York: Manhattan Institute for Policy Research. Retrieved July 6, 2004, from www.manhattan-institute.org/cr_baeo.pdf.

Hammack, F. M. (2001, April). *The comprehensive high school ideal: Its myth and reality for contemporary reform*. Paper presented at the Annual Meeting of the American Educational Research Association, Seattle, WA.

Haycock, K., & Huang S. (2001). Are today's high school graduates ready? *Thinking K-16, 5*(1), 3-17.

Herold, B. (2003). "Regional College-Going Patterns of Philadelphia Public High School Graduates: The Role of High School Curriculum." *Penn GSE Perspectives on Urban Education vol 2 issue 2.*

Hodgkinson, H. (1985). *All one system*. Washington, D.C: Institute for Educational Leadership.

Horn, L., & Kojaku, L. K. (2001). *High school academic curriculum and the persistence path through college: Persistence and transfer behavior of undergraduates 3 years after entering 4-year institutions.* Washington, DC: National Center for Education Statistics. (NCES 2001163). Retrieved July 6, 2004, from http://nces.ed.gov/pubs2001/2001163.pdf

Howard, J. (1995, Fall). You can't get there from here: The need for a new logic in education reform [Electronic version]. *Daedelus: Journal of the American Academy of Arts and Sciences, 124*(4), 85-92.

Institute for Higher Education Policy. (1998). *College remediation: What it is, what it costs, what's at stake.* Washington, DC: Author.

Institute for Research and Reform in Education. (n.d.). Retrieved July 6, 2004, from www.irre.org

International Baccalaureate Organization. (n.d.). Retrieved July 6, 2004, from www.ibo.org/ibo/index.cfm/en/ibo/about

Kane, J., & Spizman, L. M. (1994). Race, financial aid and college attendance: Parents and geography matter. *American Journal of Economics and Sociology, 53,* 85-97.

Kaufman P., Alt, M. N., & Chapman, C.D. (2001). Dropout rates in the United States: 2000. (NCES 2002114). Washington, DC: National Center for Education Statistics. Retrieved July 6, 2004, from http://nces.ed.gov/pubs2002/2002114.pdf

Kemple, J.J. (2004). Career Academies: Impacts on Labor Market Outcomes and Educational Attainment. MDRC.

Kemple, J.J. and Herlihy, C. (2004). "The Talent Development High School Model: Context, Components, and Initial Impacts on Ninth-Grade Students' Engagement and Performance." MDRC.

Kemple, J. J., & Snipes, J.C. (2000). *Career academies: Impacts on students' engagement and performance in high school.* New York: Manpower Demonstration Research Corporation.

Kim, J. J., Crasco, L. M., Smith, R. B., Johnson, G., Karantonis, A., and Leavitt, D. J. (2001). *Academic excellence for all urban students: Their accomplishments in science and mathematics.* Norwood, MA: Systemic Research. Retrieved July 6, 2004, from www.systemic.com/pdfs/Booklet.pdf

King, J. (1996). *The decision to go to college: Attitudes and experiences associated with college attendance among low-income students.* Washington, DC: College Board.

Kirst, M. W. (2001). Overcoming the high school senior slump: New education policies. *Perspectives in public policy: Connecting higher education and the public schools*. Washington, DC: Institute for Educational Leadership and National Center for Public Policy and Higher Education.

Kirst, M. W. & Bracco, K. R. (2004). Bridging the Great Divide: How the K-12 Postsecondary Split Hurts Students, and What Can Be Done About It. In M. W. Kirst & A. Venezia (Eds.), (pp. 1-30). *From High School to College: Improving Opportunities for Success in Postsecondary Education.* San Francisco: Wiley and Sons.

Kirst, M.W. & Venezia, A. (Eds.). (2004). *From High School to College: Improving Opportunities for Success in Postsecondary Education.* San Francisco: Wiley and Sons.

Kleiman, N.S. (2001, June) Building a highway to higher ed: How collaborative efforts are changing education in America. New York: The Center for an Urban Future.

LaGuardia Community College, International High School. (n.d.). Retrieved July 6, 2004, from www.lagcc.cuny.edu/StuInfo/info6c.asp

Lee, V. E., & Bryk, A. S. (1988). Curriculum tracking as mediating the social organization of high school achievement. *Sociology of Education, 61,* 78-94.

Lee, V. E., & Burkham, D. T. (2003). "Dropping Out of High School: The Role of School Organization and Structure." *American Educational Research Journal* 40: 353-393.

Lee, V. E., Ready, D. D., & Ross, K. E. (1999). *Personalism and academic press in the context of six high schools*. Paper presented at the annual meeting of the American Sociological Association, Chicago, IL.

Lee, V. E., & Smith J. B. (1994). High school restructuring and student achievement: A new study finds strong links [Electronic version]. *Issues in Restructuring Schools, 7*, 1-5.

Lee, V. E., & Smith J. B. (1995). Effects of high school restructuring and size on early gains in achievement and engagement. *Sociology of Education, 68*, 241-270.

Lee, V. E., Smith, J. B., & Croninger, R. G. (1995). Another look at high school restructuring: More evidence that it improves student achievement, and more insight into why. *Issues in Restructuring Schools, Issue Report No. 9*, 1-10.

Lee, V. E., Smith, J. B., & Croninger, R. G. (1997). How high school organization influences the equitable distribution of learning in mathematics and science. *Sociology of Education*, *70*, 128-150.

Lieberman, J. E. (1998). Creating structural change: Best practices. *New Directions for Community Colleges, 103*, 13-19.

MacLeod, J. (1987). Ain't no makin' it. Leveled aspirations in a low-income neighborhood. Boulder, CO: Westview Press.

May, H., Supovitz, J., & Perda, D. (2004). *A longitudinal study of the impact of America's Choice on student performance in Rochester, New York, 1998-2003.* Consortium for Policy Research in Education. Philadelphia, PA: University of Pennsylvania.

Martinez, M., & Bray, J. (2002). *All over the map: State policies to improve the high school*. Washington, DC: HS Alliance. Retrieved July 6, 2004, from www.hsalliance.org/resources/docs/Allfinal.pdf

McDonough, P. M. (1997). *Choosing colleges: How social class and schools structure opportunity*. Albany, NY: State University of New York (SUNY) Press.

McLaughlin, M.W. (2000). Community Counts: How Youth Organizations Matter for Youth Development. Washington, D.C.: Public Education NetworkMcPartland, J., Balfanz, R., Jordan, W., & Legters, N. (1998). Improving climate and achievement in a troubled urban high school through the Talent Development Model. *Journal of Education for Students Placed At Risk, 3*, 337-361.

Meier, D. (2000a). Educating a democracy. In J. Cohen & J. Rogers (Eds.), *Will Standards Save Public Education?* (pp. 3-31). Boston: Beacon Press.

Meier, D. (2000b). Can the odds be changed? What it will take to make small schools ordinary practice. In E. Clinchy (Ed.), *Creating New Small Schools: How Small Schools Are Changing American Education* (pp. 184-190). New York: Teachers College Press.

Middle College. (n.d.). Retrieved July 6, 2004, from www.lagcc.cuny.edu/lpp/MiddleCollege.htm

Middle College High School National Consortium Data Collection 2002-2003.

Moore, W. (2004). Presentation given on May 21-22, 2004.

Nathan, J., & Febey, K. (2001). *Smaller, safer, saner, successful schools*. Washington, DC: National Clearinghouse for Educational Facilities; Minneapolis, MN: Center for School Change, Humphrey Institute of the University of Minnesota.

National Assessment of Educational Progress (NAEP). (2000). *The nation's report card: Mathematics 2000*. Retrieved July 6, 2004, from http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2001517

National Assessment of Educational Progress (NAEP). (2001). *The nation's report card: Science 2000*. Retrieved July 6, 2004, from http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2003453

National Assessment of Educational Progress (NAEP). (2003). *The nation's report card: Mathematics 2003 Major Results*. Retrieved July 6, 2004 from http://nces.ed.gov/nationsreportcard/mathematics/results2003/

National Assessment of Educational Progress (NAEP). (2003). *The nation's report card: Reading 2003 Major Results*. Retrieved July 6, 2004 from http://nces.ed.gov/nationsreportcard/reading/results2003/

National Association for the Advancement of Colored People (NAACP). (2001). *NAACP call for action in education*. Baltimore, MD. Retrieved July 6, 2004, from www.naacp.org/work/education/execcalleduactn.pdf

National Association of Secondary School Principals. (2002). *What the research shows:* Breaking Ranks *in action*. Reston, VA: National Association of Secondary School Principals.

National Center for Education Statistics. (2003, November). *Remedial Education at degree-granting postsecondary institutions in Fall 2003.* (NCES 2004010). Retreived September 1, 2004, from http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2004010.

National Center for Education Statistics. (2003, June). *The nation's report card: Reading highlights 2002.* (NCES 2003-524). Retreived September 1, 2004, from http://nces.ed.gov/nationsreportcard/pubs/main2002/2003524.asp

National Center for Education Statistics. (1999a, October). *Indicator of the month: Students who took Advanced Placement (AP) examinations* (NCES 2000001). Retrieved July 6, 2004, from http://nces.ed.gov/pubs2000/2000001.pdf

National Center for Education Statistics (1999b, August). *Students who prepare for college and a vocation* (NCES 1999072). Retrieved July 6, 2004, from http://nces.ed.gov/pubs99/1999072.pdf

National Clearinghouse for Comprehensive School Reform & Northwest Regional Educational Laboratory. (2001). *Catalog of school reform models*. Retrieved July 6, 2004, from www.nwrel.org/scpd/catalog/index.shtml

National Commission on Excellence in Education. (1983). *A nation at risk: The full account*. Portland, OR: USA Research.

National Commission on the High School Year. (2001). *Raising our sights: No high school senior left behind.* Princeton, NJ: The Woodrow Wilson National Fellowship Foundation.

Noguera, Pedro A. "Transforming Urban Schools Through Investments in the Social Capital of Parents" in Social Capital and Poor Communities, ed. Susan Saegert, J. Phillip Thompson, and Mark R. Warren. New York: Russell Sage Foundation, 2001. pp189-214.

Oakes, J. (1985). *Keeping track: How schools structure inequality.* New Haven, CT: Yale University Press.

Oakes, J. (1987). *Tracking in secondary schools: A contextual perspective*. Santa Monica, CA: Rand Corporation. (ED298643)

Oakes, J., & Lipton, M. (1992). Detracking schools: Early lessons from the field. *Phi Delta Kappan*, *73*, 448-54.

Ohio Department of Education, Academic Content Standards. (2001). Retrieved July 6, 2004, from www.ode.state.oh.us/academic_content_standards

Pathways to College Network. (2002). *What do we know about the impact of pre-college outreach programs on college entrance?* Boston, MA: Author.

Perry, T. (Fall 2003). “Reflections of an African American on the Small Schools Movement.” *Voices in Urban Education*. Annenberg Institute for School Reform at Brown University.

Philadelphia Education Fund. (2001). *The Talent Development High School: First-year results of the ninth grade success academy in two Philadelphia schools, 1999-2000*. Retrieved July 6, 2004, from www.philaedfund.org/pdfs/td_twoschools.pdf

Phillips, M. (1997). What makes schools effective? A comparison of the relationships of communitarian climate and academic climate to mathematics achievement and attendance during middle school. *Educational Evaluation and Policy Analysis, 34*, 633-662.

Powell, A.G., Farrar, E., & Cohen, D. K. (1985). *The shopping mall high school: Winners and losers in the educational marketplace.* (The second report from A Study of High Schools, cosponsored by the National Association of Secondary School Principals and the Commission on the Educational Issues of the National Association of Independent Schools.) Boston: Houghton Mifflin Company.

Project GRAD (Graduation Really Achieves Dreams). (2003). Retrieved July 6, 2004, from http://www.projectgradusa.org/managedcontent/downloadFiles/download6/Files/file/Original%20Slides.ppt

Quint, J. (2001). *Scaling up First Things First: Site selection and the planning year.* New York: Manpower Demonstration Research Corp.

Quint, J. (Forthcoming). *Scaling up First Things First.* New York: Manpower Demonstration Research Corp.

Raywid, M. A. (1994). A school that really works: Urban Academy. *Journal of Negro Education, 63*, 93-110.

Robertson, P. F., Chapman, B. G., & Gaskin, F. (Eds.). (2001*). Systems for offering concurrent enrollment at high schools and community colleges. New directions for community colleges, No. 113.* San Francisco: Jossey-Bass.

Roey, S., Caldwell, N., Rust, K., Blumstein, E., Krenzke, T., Legum, et al. (2001, May). The 1998 high school transcript study tabulations: Comparative data on credits earned and demographics for 1998, 1994, 1987, and 1982 high school graduates (NCES 2001498). Retrieved July 6, 2004, from http://nces.ed.gov/pubs2001/2001498.pdf

Romo, H. & Falbo, J. (1996). *Latino high school fraduation: Defying the odds*. Austin: University of Texas Press.

Schenectady High School’s Pre-International and International Baccalaureate

Diploma Program. (n.d.). Retrieved July 6, 2004, from Shouse, R. (1996). Academic press and sense of community: Conflict and congruence in American high schools. In A.M. Pallas. (Ed.), *Research in Sociology of Education and Socialization* (pp. 173-202). [need publication information]

Sizer, T. R. (1984). *Horace's compromise: The dilemma of the American high school.* The first report from a study of high schools, cosponsored by the National Association of Secondary School Principals and the Commission on Educational Issues of the National Association of Independent Schools. Boston, MA: Houghton Mifflin Company.

Sommerville, J. & Yi, Y. (2002). *Aligning K-12 and Postsecondary Expectations: State Policy in Transition.* Washington, DC: National Association of System Heads.

Southern Regional Education Board. (n.d.). High Schools That Work. Retrieved July 6, 2004, from www.sreb.org/programs/hstw/background/brochure.asp

Stage, F. K., & Rushin, P. W. (1993). A combined model of student predisposition to college and persistence in college. *Journal of College Student Development, 34,* 276-82.

Supovitz, J. A., Poglinco, S. M., & Snyder, B. A. (2001). *Moving mountains: Successes and challenges of the America's Choice comprehensive school reform design*. Philadelphia, PA: Consortium for Policy Research in Education, University of Pennsylvania.

Swanson, M. C. (1994). *AVID as the catalyst for schoolwide change.* San Diego, CA: AVID Center.

Tafel, J., & Eberhart, N. (1999). *Statewide School-college (K-16) Partnerships to Improve Student Performance*. Denver, CO: State Higher Education Executive Officers. Retrieved July 6, 2004, from www.sheeo.org/k16/transit/transit-sb-k16.pdf

Thomas, R. S. (2000). Black students' academic performance and preparation for higher education. In S. T. Gregory (Ed.), *The Academic Achievement of Minority Students: Perspectives, Practices, and Prescriptions* (pp. 335-364). New York: University Press of America.

Tierney, W. G., Colyar, J. E., & Corwin, Z. B. (2003). Preparing for college: Building expectations, changing realities. Los Angeles: University of Southern California, Center for Higher Education Policy Analysis.

Toch, T. (2003). High Schools on a Human Scale: How Small Schools Can Transform American Education. Beacon Press: Boston.

Trybus, M. A., & Li, R. (1998, April). *Effects of a partnership academy on school and career success of at-risk high school students*. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA. (ED423593)

U.S. Department of Education. (n.d.).*Tech prep education*. Retrieved July 6, 2004, from www.ed.gov/about/offices/list/ovae/pi/cte/tpreptopic.html

Van Buskirk, W., & McGrath, D. (1999). *The ACE advantage: Charting the pathway from high school to college*. New York: National Center for Urban Partnerships.

Venezia, A., Kirst, M. W., & Antonio, A. L. (2003). *Betraying the College Dream: How Disconnected K-12 and Postsecondary Education Systems Undermine Student Aspirations.* Stanford, CA: The Stanford Institute for Higher Education Research.

Walker James, D., Jurich, S., & Estes, S. (2001). *Raising minority academic achievement: A compendium of education programs and practices.* Washington, DC: American Youth Policy Forum.

Wasley, P. A. (2003, Fall). In Search Of Authentic Reform. *VUE (Voices in Urban Education),* 2, 12-23.

Wasley, P. A., Fine, M., Gladden, M., Holland, N. E., King, S., Mosak, E., et al. (2000). *Small schools: Great strides, a study of new small schools in Chicago*. New York: Bank Street College of Education.

Watt, K. M., Powell, C. A., & Mendiola, I. D. (2004). Implications of One Comprehensive School Reform Model for Secondary School Students Underrepresented in Higher Education. *Jounral of Education for Students Placed at Risk,* vol. 9, no. 3, pp 241-259.

Watt, K.M., et al. (2004). “A Study of AVID High Schools in Texas After Three Years: Have Their Campus Accountability Measures Improved Relative to Non-AVID Comparison Schools?” Paper presented at AERA, San Diego, CA.

Watt, K., & Yanez, D. (2001, April). *AVID: A comprehensive school reform model for Texas.* Paper presented at the Annual Meeting of the American Educational Research Association, Seattle, WA.

Watt, K., Yanez, D., and Cossio, G. (2003). “AVID: A Comprehensive School Reform Model for Texas.” *National Forum for Educational Administration and Supervisions Journal*, vol 19 no 3.

Wechsler, H. S. (2001). *Access to success in the urban high school: The Middle College movement.* New York: Teachers College Press.

Wimberly, G. L. & Noeth, R. J. (2004). *Schools Involving Parents in Postsecondary Planning: ACT Policy Report.* Iowa City, IA: ACT.

Windham, P. (1997). *Academic career benchmarks by ethnicity.* Tallahassee, FL: Florida State Board of Community Colleges. (ED441525)