The High School Leadership Summit

Issue Papers

UNITED STATES DEPARTMENT OF EDUCATION
Office of Vocational and Adult Education

October
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Overview of High School Summit Issue Papers

The purpose of the U.S. Department of Education's High School Leadership Summit Issue Papers is to frame the challenges facing America's high schools as well as to address some steps that states, schools, educators and others are taking to tackle these challenges.

Like the Summit, the papers use the framework of *No Child Left Behind* to promote a national dialogue about transforming high schools. The *No Child Left Behind Act of 2001* emphasizes accountability, flexibility, options and information for parents, and the use of scientifically based research and proven methods. The High School Leadership Summit, and the Issue Papers, will support these related themes: setting high expectations and accountability for results; creating options and engaging students; fostering world-quality teaching and school leadership; and making smooth transitions into postsecondary education.

More in-depth research and additional complementary materials on these important topics will be available on www.ed.gov/offices/OVAE/ in the months following the High School Leadership Summit.

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High Schools with High Expectations for All

Despite a great deal of effort over the past 20 years, academic achievement among high school students continues to lag. To ensure that no high school student is left behind, schools need:

1. High expectations for all high school students; and

2. A rigorous core curriculum to match those expectations.

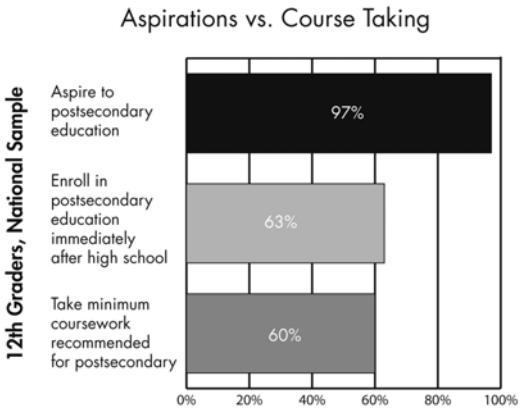
The American education system made strides in the 1990s in adopting academic standards for high schools in at least some subjects: *all* states (and, in Iowa, districts) have adopted standards in at least some subjects, including mathematics, English, science and social studies. Twenty-two have standards in all four subjects.[1] Now states need to translate those standards into *expectations* that ensure high schools actually adopt the standards, teachers are held to them, and students master them. The *No Child Left Behind Act* offers a rare opportunity for states and educators to address the issues of high expectations and academic rigor for all American high school students. A number of organizations have taken the lead and may offer promising approaches for states and schools.

The Challenge

American high school students are not adequately prepared for their futures. Increasingly the economy demands workers with postsecondary education and training. Students seem to understand this, but there is a serious disconnect between aspirations and preparation. More than 97 percent of youth say they aspire to participate in some sort of postsecondary education, and 63 percent enroll.[2] Yet, little more than half actually take a mix of academic classes in high school that will prepare them for success either in college or today's workplace. The courses they do take often fail to maintain their interest in school at all.

The results are high dropout rates and "drift-outs" - college students who do not return for a second year of college. A large number of these students stumble at the starting line, requiring remediation in math, reading and writing, and other basic subjects before they can enroll in college-level courses. More than one-quarter of the freshmen at 4-year colleges – and nearly half of those at 2-year colleges – do not advance to their second year.

In the meantime, employers continue to bemoan the lack of needed academic skills among workers and the shortage of qualified applicants for jobs that require advanced education and training. Skills shortages accompany high unemployment in part because high school students have not been prepared to meet the academic challenges of the 21st Century.



Source: NELS: 88; The Condition of Education 2003, Table 18-1, web-version, www.nces.ed.gov/programs/coe/; and Levesque, K. (2003). Trends in High School Vocational/ Technical Course-taking: 1982-1998. US Department of Education, NCES. Washington, DC.

Content Counts

Twenty years ago the report *A Nation at Risk* called for more academic course-taking among high school students. In it, the National Commission on Excellence in Education defined the "New Basics": four years of English, three years math, three years science and, in the language of the time, one-half credit of computer science (plus two years of foreign language for the "college-bound").

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In response, most states upgraded their graduation requirements to more closely match the Commission's recommendations. But national data indicate that academic achievement in high school reading, math and science has been mostly stagnant for decades.[3] Why might this be so?

We now know that the issue is not solely how many credits of a subject with a fixed title (e.g., one-half credit "computer science") a student takes, but the content and rigor of courses students take as well. A rigorous core academic curriculum built on high standards is key to increasing expectations for all students.

Students of all abilities learn more in academically rigorous courses. There are several documented benefits for students who take challenging academic classes in high school, especially for those students considered "at risk" of failing:[4]

- Those who enter high school with test scores in the lowest quartile learn more in academically rigorous courses than they do in either the low-level vocational or general courses in which they are traditionally enrolled.[5]
- Students are more likely to pass high-level courses than low-level courses. Thus, the research suggests that increasing access by all students to advanced academic course work will improve student academic achievement.[6]
- Students expected to master more demanding curricula are more likely to persist in school, achieve at higher levels, and be better prepared for the workforce after their formal education ends.[7]

Yet the progress of the last 20 years has not been sufficient to that end.

Too few students are taking rigorous courses. Too few students are taking the kind of courses they need to succeed in - or even be admitted to - college. Students from low-income families, those whose parents did not earn a postsecondary credential, and those who attended high schools in which a large proportion of the students are eligible for free or reduced-price lunch, are less likely to have completed a rigorous high school academic curriculum than their more advantaged counterparts.[8]

Students take less demanding academic courses for a number of reasons:

- Their high school does not offer a sufficient number of rigorous academic courses.
- They do not receive clear guidance from counselors or teachers about the courses they need to complete to prepare for postsecondary education.
- They are not aware that they are compromising their future success in life by taking low-level courses.
- In many states, high school graduation requirements are not aligned with the minimum requirements public 4-year and "open enrollment" community colleges and universities set for placement in college-level courses.[9]

Postsecondary education or training is for virtually everyone. Certainly not every youth need attend a traditional 4-year college. But virtually every youth will need some sort of postsecondary education and training. The economic and moral challenge we face is to make sure each student is adequately prepared with an academic foundation to take advantage of whatever future education and training he or she chooses. A strong set of academic skills and the habits and attitudes that accompany success in school also will help students entering meaningful employment immediately after high school.

Strategies

Implementation of the *No Child Left Behind Act* provides an excellent opportunity for states and educators everywhere to prepare strategies to address the expectations issue. Each state is required to establish minimum levels of high school proficiency in reading and mathematics that every high school student is expected to reach by 2013-2014, create definitions of "proficiency," and, along with the school districts themselves, report annual yearly progress.

The Act will cause educators and policymakers to rethink expectations, organization, administration, curriculum, instruction, and support services needed to meet required levels of proficiency. These definitions of proficiency certainly should indicate a readiness for the world of further education and meaningful employment.

Steps to success. Of course it is easier to argue for a more demanding curriculum than it is to implement one. Given the mismatch between state graduation requirements, state assessments, and college admission and placement test specifications, states need to bring both college and K-12 educators together with policymakers and the business community to iron out these differences. Since most advanced courses require successful completion of certain prerequisites, policymakers, school districts, and schools need to work to create opportunities for all students to take and succeed in these prerequisites.

Students may need extra support in order to prepare themselves for advanced study. Schools can offer summer school courses to help students get back "in step" with certain course prerequisites. And, to ensure that students will not decline to take Advanced Placement (AP) classes because of the cost, the U.S. Department of Education, some states and many districts are subsidizing AP exam fees for all AP students.

Teachers' attitudes and instructional skills are also important. Once students are taking high-level courses, they need knowledgeable teachers who can provide instruction equal to the quality of the content. Given the lack of highly qualified teachers in many core academic fields and the limited experiences of others teaching advanced courses, states, districts and schools need to implement teacher preparation and in-service professional development strategies that are aimed squarely at this challenge.

Students may need incentives to encourage them to enroll in advanced courses. Part of the answer here is making students aware of the time and increased ease of college transition that can accrue to students who get high scores on AP exams.

By carefully charting student course-enrollment data, disaggregating it by race/ethnicity, first language and socioeconomic status, schools will be able to ensure that not only are they providing the courses for students to complete the recommended curriculum but also that all students are taking advantage of the courses available in the school.

A rich and deep curriculum. A rich and deep curriculum is at least as important as the *number* of academic courses students encounter. This requires more than assigning all students to “college prep” courses. Existing advanced courses generally demand greater effort and pose greater intellectual challenges for students; however, even advanced courses must be marked by innovation that keeps the curriculum relevant to an ever-changing world. And requiring more rigor does not mean that all students need approach such subject matter in exactly the same way.

The choice is not between rigor and innovation, or avoiding rigor altogether but—a better option—creating multiple pathways that correspond to *differences* in student interests, aspirations, and talents to meet the *common* goal of proficiency needed to advance in the worlds of education and employment.

Promising Models for Increasing Access to Rigorous Core Academic Curriculum

There are a number of specific programs currently attempting to increase the rigor of high school academic offerings for all students. These may serve as models, in whole or part, for policymakers and educators in developing and promoting their own strategies:

- **The State Scholars Initiative** is a federally-funded program that funds business and education partnerships to promote to students the benefits of following a core academic curriculum: four years of English; three years of math including Algebra 1 and 2 and geometry; biology, chemistry and physics; three and one-half years of social studies including economics; and two years of a foreign language. http://www.ed.gov/about/offices/list/ovae/pi/hs/statescholar.html

- **High Schools That Work** is a network of over 1,000 high schools throughout the eastern United States that helps schools develop, among other components, a curriculum similar to the State Scholars Initiative as well as four courses in a planned career/technical concentration for most students. www.sreb.org/programs/hstw/hstwindex.asp

- **First Things First** and **Talent Development High Schools** are two reform networks designed to promote specific interventions in reading, mathematics and other subjects within ninth-grade academies, schools-within-schools, career

academies and other environments to encourage development of higher expectations. www.irre.org/ftf www.csos.jhu.edu/tdhs

- **The International Baccalaureate (IB) program** is an advanced, internationally recognized curriculum that offers 11th and 12th grade students an opportunity to earn the IB Diploma. Students complete and test in six IB subjects; write an extended essay based on independent research; complete 150 hours of creative and service activity (for example, arts, sports, community service); and participate in a critical thinking course. The program is offered in over 1,425 public and private secondary schools in more than 115 countries around the world. http://www.ibo.org/

- **Advancement Via Individual Determination (AVID)** works to ensure that all students complete a rigorous college-preparatory path and increase enrollment in 4-year colleges. Students typically enter the program in middle school and take an elective AVID class that focuses on writing and inquiry. Other activities focus on motivation, study skills and preparation for college entrance and placement examinations. AVID, which began in California, now reaches over 70,000 middle and high school students in more than 1,500 schools in 21 states and 15 countries. http://www.avidonline.org

Conclusion

High schools must let go of long-held myths and perceptions about who can learn and who cannot so that all youth can reach high academic standards. Unfortunately, some of the biggest skeptics are those whose job it is to believe in students; secondary educators who believe that certain social groups or students are slower to learn and react by lowering the bar for performance, robbing those groups of opportunities to grow intellectually and achieve their dreams. Yet the fact that there are thousands of teachers who are producing promising results offers hope that not only *can* high schools raise expectations, but that they also can help all students meet them. The urgency is for the **majority** of schools to learn from their example.

Endnotes

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No Child Left Behind: Transforming America's High Schools

The *No Child Left Behind Act of 2001* launched the most sweeping changes in federal education policy since the *Elementary and Secondary Education Act* was enacted in 1965. As its name implies, *No Child Left Behind (NCLB)* seeks to close the achievement gap between disadvantaged and minority students and their peers and to change the culture of America's schools so that all students receive the support and high-quality instruction they need to meet higher expectations.

Though public attention often focuses on the law's implications for elementary and middle schools, *NCLB* also provides an important framework and needed resources for *improving* all high schools and *transforming* those high schools with acute needs. As states and communities implement *NCLB* and achievement gaps are eradicated in the early grades, we can expect that many more young people will enter high school well prepared to master a rigorous curriculum. But our nation cannot afford to wait. True to its name, *NCLB* recognizes that change also is needed to help today's high school students catch up quickly and master both basic and advanced academic skills.

Holding All High Schools Accountable for Student Success

NCLB builds on the accountability and assessment requirements Congress put in place in 1994 with the *Improving America's Schools Act*. As required by that law, all states have established standards in mathematics and reading or language arts for high school students, except Iowa, which has district-level standards. The 1994 law also required states to assess student mastery of these standards at least once between grades 10 through 12. *NCLB* turns this framework into a powerful lever for improving the academic achievement of high school students.

NCLB requires states to:

- **Establish annual achievement objectives for all high schools**. States set out specific "adequate yearly progress" (AYP) objectives for every high school (regardless of whether it receives federal funds) that move the school steadily toward the goal of ensuring that all of its students are proficient in reading and mathematics by the end of the 2013-14 school year.
- **Measure the progress of all students**. In defining each high school's AYP objectives, states include separate, annual achievement goals for students from low-income families, racial and ethnic minority students, students with disabilities, and students with limited English proficiency so that these students progress toward the law's goal of 100 percent proficiency. The needs of struggling students cannot be obscured in schools with high overall levels of achievement.
- **Hold high schools accountable for graduation rates**. States incorporate graduation rates in defining AYP objectives for their high schools. Graduation rate is defined by the law as the percentage of students who graduate from high school with a regular diploma in the standard number of years. This is a clearer and more reliable approach to measuring how well a high school succeeds in retaining its students and helping them to advance than more traditional dropout measures. Most importantly, including the graduation rate in a high school's AYP objectives focuses attention on the needs of students who are at the greatest risk of dropping out.

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- **Give parents and community leaders the information they need to hold high schools accountable and support improvement.** States ensure that every school district publishes report cards for each of its high schools that include information on how students performed on state academic assessments. Achievement data must be disaggregated, or broken out, by student subgroups according to race, ethnicity, gender, English language proficiency, migrant status, disability status and low-income status. The school's graduation rate and the qualifications of its teachers are also reported. Most states and school districts include other indicators of school performance that they consider important for parents and the community to know.

Improving High-Poverty High Schools

Too many high schools with large numbers or proportions of low-income students are in crisis. They have been overlooked too often in the past because the needs of their students are great and the challenge of turning them around seems so daunting. But *NCLB* puts these schools in the spotlight, not the dark corner so that every young person will receive the support and quality instruction he or she needs to master a rigorous academic curriculum and enter adulthood prepared for the future.

For the 29 percent of American high schools that receive assistance under Title I of the Elementary and Secondary Education Act[1]—schools with a large number or proportion of students from low-income families—*NCLB* lays out the following action plan to spur improvement when student achievement falls short:

- If a high school does not meet its AYP objectives for two consecutive years, it is identified as needing improvement. School officials develop a two-year plan to turn around the school. The school district provides technical assistance to the school as it develops and implements its improvement plan. Students must be offered the option of transferring to another public school in the district—which may include a public charter school—that has met its AYP objectives.
- If the high school does not meet its AYP objectives for three consecutive years, the school remains in school improvement status, and the district must continue to offer public school choice to all of its students. In addition, students from low-income families are eligible to receive supplemental educational services, such as tutoring or remedial classes, from a state-approved provider.
- If the high school fails to meet its AYP objectives for four consecutive years, the district must implement corrective actions to improve the school, such as replacing staff or implementing a new curriculum, while continuing to offer public school choice and supplemental educational services for low-income students.
- If the high school fails to meet its AYP objectives for a fifth year, the school district must initiate plans for restructuring the school. This may include reopening the school as a charter school, replacing all or most of the school staff or turning over school operations either to the state or to a private company with a demonstrated record of effectiveness.

Putting a Qualified Teacher in Every Classroom

There is an emerging consensus among researchers, policymakers and the public that one key to boosting student achievement is to ensure that a committed and highly skilled teacher is in every classroom. Though we still have much to learn about the specific attributes, experiences, and training that make a teacher an effective instructor, there is evidence that subject matter expertise is linked to gains in student achievement.[2] *NCLB* makes improving the expertise of America's teachers in the subjects they teach a central priority. Specifically, *NCLB* requires that:

- **Beginning with the current school year, high schools that receive Title I funds may only hire "highly qualified teachers" to teach core academic subjects in their Title I programs.** In general, a "highly qualified teacher" is one with full certification, a bachelor's degree and demonstrated competence in subject knowledge and teaching. The law defines core academic subjects as English, reading or language arts, mathematics, science, foreign language, civics and government, economics, arts, history and geography.

- **By the end of the 2005-06 school year, all teachers in all high schools who teach core academics must be highly qualified.**

The findings of a special analysis of the Schools and Staffing Survey conducted by the U.S. Department of Education suggest that improving teacher quality could make a powerful difference in raising achievement in our high schools. Using an approximation of the *NCLB* definition, the analysis found that only 54 percent of our nation's secondary school teachers were highly qualified during the 1999-2000 school year. The percentage of highly qualified teachers ranged from 47 percent of mathematics teachers to 55 percent of science and social science teachers.[3] These data reveal that the goal of ensuring that high school teachers in core academics are highly qualified will be a challenge; however, doing so could pay big dividends in boosting student achievement.

NCLB provides important resources to help meet this challenge:

- The $2.9 billion **Improving Teacher Quality State Grants** program provides funding to states and districts for activities that will strengthen teacher quality in all schools, especially those with a high proportion of children in poverty. Funding for the program has increased 39 percent since President Bush took office.

- The **Transition to Teaching** program allocates funds to states, school districts and nonprofit groups to help thousands of outstanding candidates enter teaching through alternate routes to traditional teacher preparation programs.

- Similarly, **Troops to Teachers** helps states and school districts streamline the entry of former military personnel into schools as teachers.

- The **Mathematics and Science Partnership** program supports partnerships between high-need school districts and the science, technology, engineering, and mathematics faculty in institutions of higher education. Partnerships carry out a range of professional development and other activities that are designed to improve the subject matter knowledge and instructional skills of mathematics and science teachers.

- The **Teaching of Traditional American History** program provides funds to states, school districts and education groups to help improve, through teacher professional development, the quality and rigor of American history instruction in the nation's schools.

- *NCLB* also requires school districts that receive Title I funds to use at least five percent of their grants to improve teacher quality.

Expanding Options for Parents and Students

The comprehensive, factory-model high school in which students are sorted among various tracks according to their perceived abilities was devised for an earlier era in which expectations were high for a few and low for most. Helping all young people rise to the challenge of higher expectations requires moving beyond this outmoded model to give high school students more choices.

Expanding options for parents and students is one of the pillars of *NCLB*. The law gives students attending chronically low-performing Title I schools the option to transfer to more successful public schools. The **Voluntary Public School Choice** program helps states and school districts design and implement public school choice initiatives. The **Magnet Schools Assistance** program provides grants to school districts to establish and operate magnet schools that are operated under a court-ordered or federally-approved voluntary desegregation plan. The **Public Charter Schools** program provides grants to states and school districts to support the planning, development, and initial implementation of charter schools, while the **Credit Enhancement for Charter School Facilities** program provides assistance to help charter schools leverage private sector funds to meet their school facility needs.

Raising the Rigor of the High School Curriculum

The Advanced Placement (AP) program allows students to take college-level courses while in high school, offering an opportunity for students to reduce the time and cost required to complete a postsecondary degree. The College Board, which administers the program, provides general course guidelines and national exams for 35 college-level AP courses in 19 different subject areas. High school instructors teach the courses using curricular materials provided by the College Board. Each May, AP course-takers have the opportunity to take the national AP exams. Many colleges and universities waive prerequisites or award college credit to students who perform well on the exams.[4] Regardless of whether or not a student earns college credit through an AP exam, many believe that participating in these academically rigorous courses is still valuable preparation for college.[5] Some also maintain that the availability of AP courses in a school tends to raise expectations for all students.[6]

NCLB makes AP courses and opportunities to earn college credit through AP exams more accessible to low-income students. The **Advanced Placement Incentive** program supports efforts by states, school districts, and others to give more low-income students the opportunity to take AP classes and participate in other challenging programs, such as the International Baccalaureate. The **Advanced Placement Test Fee** program provides funds to states to pay AP test fees on behalf of eligible low-income students.

Focusing on What Works

For too many years, too many schools have experimented with lessons and materials that have proven to be ineffective—at the expense of their students. Under *NCLB,* federal support is targeted to those educational programs that have been demonstrated to be effective through rigorous scientific research. Educators are expected to consider the results of relevant scientifically based research—whenever such information is available—before making instructional decisions.

In 2002, the Department of Education's Institute of Education Sciences (IES) established the **What Works Clearinghouse** to provide a central, independent and trusted source of scientific evidence on what works in education for parents, educators, policymakers and interested members of the public. In its first year of operation, the Clearinghouse selected several topics for systematic review that are vital to improving America's high schools, including curriculum-based interventions for increasing math achievement, high school dropout prevention, and interventions that reduce delinquent, disorderly and violent behavior, in and out of school.

Preparing America's Future

No Child Left Behind provides the framework, the tools, and the resources for improving America's high schools and preparing every young person for the future. What we must provide is the will. There is now a remarkable convergence of opinion among educators, parents, members of the business community, thought leaders and policymakers across the political spectrum about what must be done to improve our high schools. Now is the time to act.

In his 2003 Back-to-School Address to the National Press Club, U.S. Secretary of Education Rod Paige reminded us of the consequences for our children if we hesitate:

> "Those who are unprepared will sit on the sidelines, confronting poverty, dead-end jobs, and hopelessness. They will find little choice and much despair. The well educated will live in a world of their own choosing; the poorly educated will wander in the shadows.
>
> We cannot deny the benefits of education through shortsighted indifference or lack of will. Nor can we capitulate to the guardians of the status quo. The achievement of all our children must improve, across the board. No child can be left behind."[7]

Endnotes

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The Economic Imperative for Improving Education

A nation's store of human capital—the knowledge and skills of the workforce—increasingly determines its well being in the modern world. The creation of human capital depends more and more on a country's ability to educate its population. Yet, American schools are not keeping pace with this economic imperative. With the *No Child Left Behind Act of 2001*, the nation has made a commitment to raise the proficiency of students to ensure that every student is prepared for postsecondary education or training.

No Child Left Behind offers a major opportunity to mobilize high schools to address the economic imperative for a more rigorous education system in the United States. If the nation's youth are to have a future with promise, the nation now needs to take bold and comprehensive action to reshape our high schools. Such improvement depends on the quality of curriculum and instruction the schools provide, the environment they create for learning, and the signals they send to students about what matters.

The Global Economy, Technology, and Jobs

The well being of the nation increasingly depends upon U.S. high schools rising to the challenge of preparing all students for a new economic reality. Prior to the mid-1970s, it was economically sufficient to provide an excellent education to an elite group of students and a basic education to the rest of the population. No longer. Students need to stay in school, take challenging courses, and be prepared for further education or training. But this has not been happening.

In a world where financial capital, technology, information and goods flow freely across borders, economic advantage goes to the educated and entrepreneurial.[1] Once, when communications and transport were slower, nations with great stores of natural resources, proximity to markets, and other physical advantages had an economic edge. Now the race goes to the educated, trained, and motivated — wherever they are.

Twenty-first century high-tech firms in the United States look to software developers in India and well-educated office workers in Ireland, while British firms interested in establishing market leadership in biotechnology recruit American scientists. At the same time, production processes that require workers with only modest knowledge and skill often move to countries where labor is cheap.

Aside from rearranging the global marketplace, advancing technology has boosted productivity and allowed domestic firms to run their businesses with fewer workers. Gone are the days when workers in a plant or office focused on one rote task, leaving all the critical thinking and decision-making to managers. If the work is routine it will probably be automated.

These changes have increased the skill and knowledge requirements for most workers. Today's flexible workplaces rely on people who can handle multiple tasks, interact well with their colleagues, respond to varying customer needs, identify problems and make quick decisions about how to fix them. This is true not only of manufacturing but also in a wide range of services, such as finance, insurance, telecommunications and other industries where advances in computing and communications have accelerated the pace of change.

The marketplace increasingly provides companies with incentives to be as lean and flexible as possible. It also encourages them to adopt policies that attract and hold highly capable workers who enable the firm to function as an organization that is constantly learning.

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All of this does not necessarily mean fewer jobs, if the workforce is properly prepared. It is just that the jobs are, and will be, different. Modern firms seek employees whom management expert Peter Drucker calls "knowledge workers."

Admittedly, not every workplace demands such qualifications. Baggage handlers and taxi drivers may not see their job requirements change much at all. But there will be fewer low-skill jobs with family-supporting wages. This reality is borne out in projections from the U.S Department of Labor, which identify the fastest growing jobs from 2000 to 2010 (see Figure 1).

Eight of the ten occupations listed in Figure 1 require some form of postsecondary education, and this trend will continue. According to Labor Department projections, jobs requiring postsecondary education will experience above-average growth, while those requiring only on-the-job training or work experience will grow at less than the expected 15 percent average projected by the Bureau of Labor Statistics in the first decade of the new millennium (see Figure 2). Although such jobs will continue to make up a large share of the labor market, they will pay much less than the jobs that require postsecondary education or training.

These requirements for more skilled workers continue a shift in education requirements that has been evolving for years. In 1997, 53 percent of employers reported that the skills required for production and support jobs increased in the previous three years. Only 6 percent indicated that skill requirements were declining.[2]

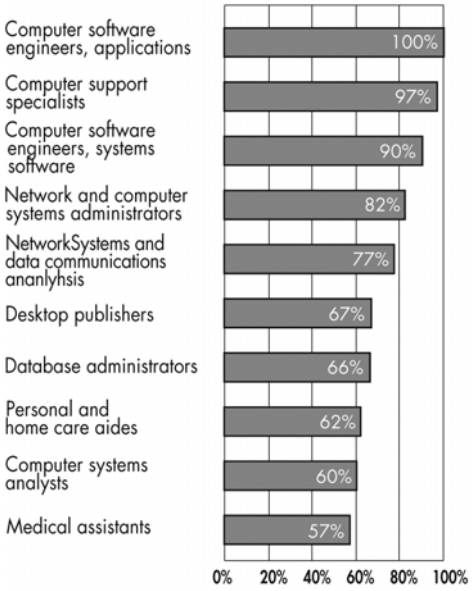
A growing gap. Greater educational achievement has long been linked to greater income (See Figure 3). In recent years, however, the gap between those who have more education and those who have less has grown. The relationship between education and income for working men and women 25 years old and over is abundantly clear (See Figure 4).

In the year 2000, female and male college graduates earned 60 and 95 percent more, respectively, than those who had not gone beyond high school.[3] High school dropouts faced even more difficult circumstances, as they earned 27 and 30 percent less, respectively, than their male and female counterparts who completed only high school or a GED. Of the 50 best-paying occupations in the country, only 2 (air traffic controller and nuclear power reactor operator) do not require a college degree.[4]

Figure 1

Fastest Growing Occupations

Percentage Change in Employment in the Ten Occupations Projected to Grow Faster, 2000-2010

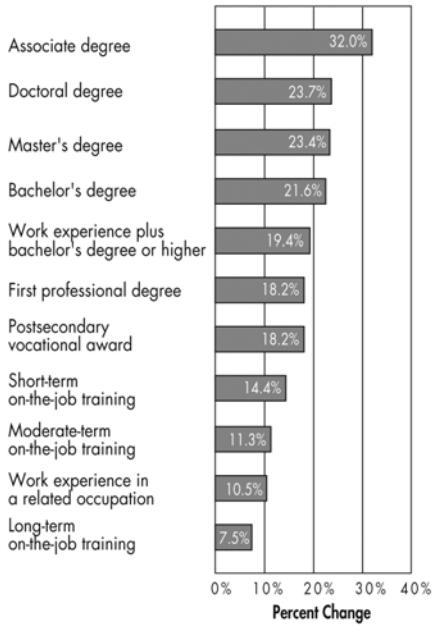


SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, 2000-2010 Employment Projections, 2001.

Figure 2

Job Growth Tied to Postsecondary Education

Percentage Change in Number of Jobs by Most Significant Source of Education or Training, Projected 2000-2010

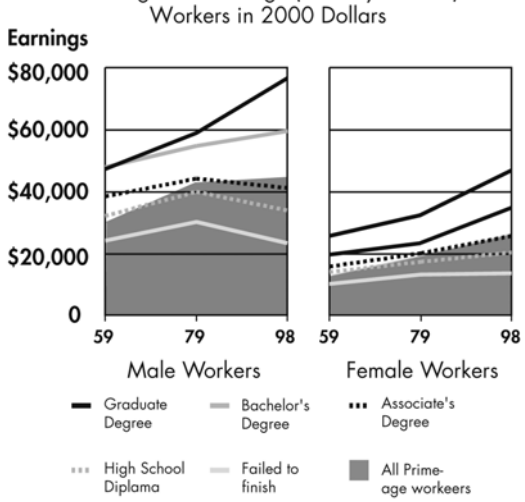


Source: U.S. Department of Labor, Bureau of Labor Statistics, Tomorrow's Jobs Bulletin 2540-1, 2002.

Figure 3

Earnings Depend Increasingly on Educational Attainment

Earnings of Prime Age (30-59 years old) Workers in 2000 Dollars

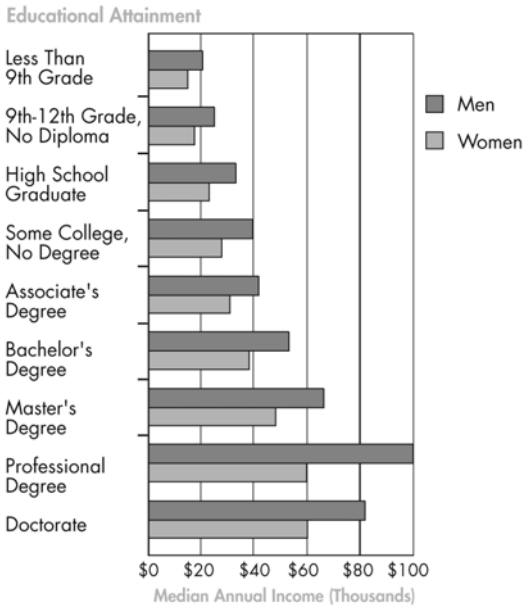


Source: Carnavale, A.P., and Desrochers, D.M. (2002). The Missing Middle Aligning Education and the Knowledge Economy, Princeton, N.J: Educational Testing Service.

Figure 4

Income and Education

Median Annual Income of Year-Round, Full-Time Workers 25 years old and Over, by Level of Education Completed and Sex: 1999



Source: U.S. Department of Education, NCES, (2002). Digest of Education Statistics 2001 (NCES 2002-130). Washington D.C.

The Challenge for High Schools

American business leaders have been among the strongest advocates for school improvement. They understand that their own long-term success is tightly linked to the quality of individuals entering the labor market each year from our schools. A recent survey highlights this concern about workforce quality.[5] Eighty percent of responding businesses said they had a "moderate to serious" shortage of qualified job candidates. They cited poor reading, writing, math, verbal communication and English language skills as issues. The survey noted that the lack of an adequately skilled workforce could "drive a business, already operating on a competitive edge, out of the global game."

Dropping out. Young people can't prepare for further education and training if they haven't finished high school. In 2000, there were 3.8 million 16–24-year-olds who were not enrolled in school and who had not yet completed a high school program.[6] The rate has remained at about 11 percent since 1992.

For minority students, especially Hispanics (nearly 30 percent in 1999) the rates are higher; in many urban areas the rates are higher still. While the quality of their schooling may be only one of many reasons students drop out, it is essential to address this issue. For young people growing up in difficult circumstances, a good high school can mean the difference between a promising future and no future at all.

Not measuring up. Where proficiency and excellence are required, students are struggling to attain even basic skills. In the latest National Assessment of Educational Progress (NAEP) (see Figure 5), for example, only 40 percent of 12th graders test as proficient in reading. The figure for other subjects is worse: 21 percent in writing, 17 percent in math, 19 percent in science, and so on.

The United States also ranked near the bottom on achievement in math and science of 21 countries participating in the Third International Mathematics and Science Study (TIMSS) in 1995. These results were little different from those achieved during earlier evaluations in the 1960s and 1980s.[7] These are not the marks of a world-class workforce or a world-class education system.

A significant and troubling achievement gap also persists between White and minority students. As measured by the latest NAEP results, the gap is largest between White and African American students: 26 percentage points in reading, 43 in mathematics and 40 in science. The gap is only slightly smaller between White and Hispanic students. With minorities making up a growing segment of the labor force, this gap not only poses difficult issues for social progress but is likely to have adverse economic consequences as well.

Lack of Academic Rigor

The NAEP test scores in part reflect the course-taking patterns of high school students. Research has shown that students who take a more demanding high school curriculum are more likely to enroll in college and complete a postsecondary degree. Taking more rigorous courses also can help close the achievement gap.[8]

Too few students have taken the courses they need to be adequately prepared for postsecondary education.[9] For example, 43 percent of 1998 graduates still followed the discredited "general" track, with its less than rigorous curriculum that typically falls far below the knowledge and skill required to prepare students for college-level work, whether at community colleges, technical colleges or four-year institutions.

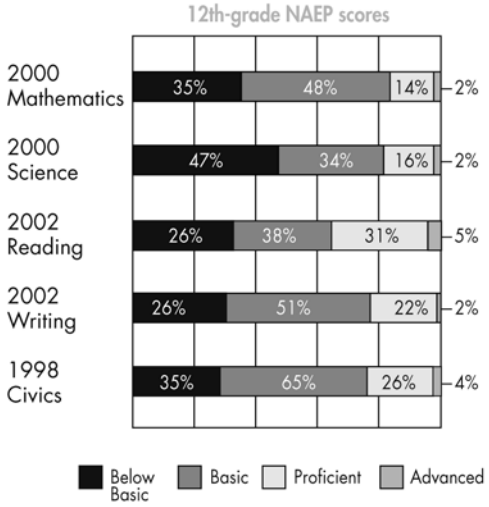
Almost one-third of new college entrants take one or more remedial courses.[10] When gaining basic knowledge and skills is postponed until entry into postsecondary education, students and colleges wind up spending time and money that could be devoted elsewhere and can diminish a student's commitment to pursuing a college credential. With so many students entering college not prepared for its demands, it is no surprise that so many never earn a degree.

Although by the late 1990s signs of more students choosing demanding secondary courses were encouraging, overall performance levels still indicated that the nation had a long way to go before all students leave high school prepared for college and high-skilled work.[11]

Figure 5

NAEP Scores

Percentage Distribution of the Scores of 12th-Graders in Selected NAEP Tests, by Proficiency Level: 1998, 2000 and 2002



Source: U.S. Department of Education, NCES. (2001). Mathematics Highlights 2000 (NCES 2001-518); Science Highlights 2000 (NCES 2002-452); NAEP 2002 Reading (NCES 2003-521); NAEP 2002 Writing (NCES 1999-464); and The Next Generation of Citizens: NAEP Civics Assessments 1988 and 1998 (NCES 2001-452) Washington, D.C.

Taking Action: Preparing America's Future

The United States has been fortunate to have enjoyed success in the international marketplace even as far too many American students leave high school with the most minor of accomplishments and less prepared for the world than students in many other countries with advanced economies. Analysts who have carefully examined this issue believe we have fared as well as we have in recent years because of our size, the flexibility of our labor markets, and the ease with which we have been able to tap the talents of professionals from other nations, whether as immigrants or as "off-shore" employees.[12]

But other nations are not standing still, and there is no guarantee that today's advantages will be permanent. In time it is likely that others will learn from our example, as American firms learned valuable lessons from Japanese manufacturers in the 1980s. When that day comes, the quality of our human capital will be more important than ever. So while the nation has enjoyed great prosperity in the past decade in spite of the performance of our schools, our future rests on doing much better.

Many high school educators across the country have shown that young people who others thought could not achieve could indeed excel. Yet, too many schools give up on certain students or hold others to the most modest of expectations. If schools that provide an excellent education for all their students are to become the norm, then fundamental change in expectations and in policy and practice must be the order of the day.

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[10] Lewis, L., et al. *Remedial Education at Higher Education Institutions in Fall 1995 (NCES 97-584)*. (Washington, DC: U.S. Department of Education, NCES, 1996).
[11] U.S. Department of Education, NCES. 2000. *The Condition of Education 2000* (NCES 2000-062). Table 40-1 and Table 33-1. Washington, DC.
[12] Carnevale, A. and Desrochers, D. 2003.

This paper is one of a series produced in conjunction with the U.S. Secretary of Education's ***High School Leadership Summit***. For more information about the U.S. Department of Education's work on high schools, visit http://www.ed.gov/about/offices/list/ovae/pi/hsinit/index.html.

From There to Here: The Road to Reform of American High Schools

The modern vision of high school, as expressed in the *No Child Left Behind Act*, is that *every* student will reach a high level of proficiency in core academic skills. But the current American high school education system is based on a model established when the expectations of high school education were far different. The model assumed that most students would not go on to postsecondary education or training, and that the majority had little need for rigorous academic preparation.

As teachers, principals, local and state local leaders work to implement *No Child Left Behind*, it is worth reflecting on how the American high school system has evolved, the assumptions upon which it rests, and the serious policy debates that should inform its future.

In the Beginning: Preparing the Elite

Until the 20th century, secondary education was a small-scale experience, largely reserved for the privileged, rather than the nearly universal democratic institution of today. Even as late as 1910, only about ten percent of American youth attended high school.

The first American high school – the Boston Latin Grammar School – was founded in 1635 to prepare young men for college at Harvard, service in government, and the church.[1] Although elementary education spread rapidly among the American population in succeeding generations, high school education did not. The first public high school did not even appear until nearly 200 years later, when the English Classical School opened in Boston in 1821.[2]

The English Classical School taught a curriculum consisting of the subject matter thought to best prepare young minds at the time: composition, declamation, mathematics, history, civics, logic, surveying, navigation, and moral and political philosophy.[3] Other public high schools soon appeared in other parts of New England and New York. Their primary purpose was college preparation for young men, and enrollment remained quite small.

College Prep and Manual Training

By 1870, there were still only 500 public high schools with 50,000 students in the United States.[4] But things were changing. It was in this era that enrollment first opened to girls – with many young women being trained in "normal" classes to become teachers – and working class youth entered high schools to learn skilled trades. It can be said that the modern public high school was born when the Michigan State Supreme Court ruled in 1874 that taxes could be levied to support public high schools as well as elementary schools.[5] Thereafter, with the Industrial Revolution and the beginning of mass urbanization, large cities began to construct high schools.

Students enrolling in the new high schools of the late 19th century were not necessarily being prepared for college. While college preparatory schools still existed, "manual" (i.e. vocational) training schools began to multiply.

Many parents and students saw the "new vocationalism" as a shortcut to the new skilled jobs in the burgeoning factories and agricultural enterprises. Academic subjects came to be regarded as merely a part of, rather than the core of, the curriculum of the manual training schools.

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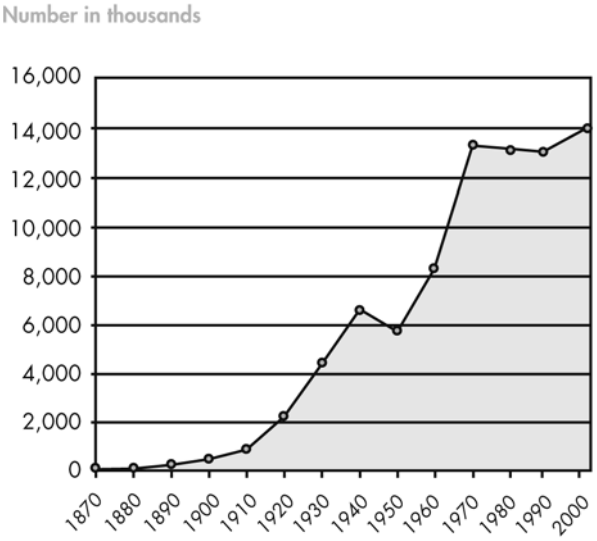
Academic standards. By the end of the 19th century, some education leaders were becoming distressed by the uneven quality of high school education. In response, the presidents of the nation's most prestigious colleges convened the first National Council of Education in 1892.[6] Consisting of professors from Ivy League colleges, the Council, also known as the *Committee of Ten*, mapped a core of academic subjects that they considered necessary to prepare for college.

Figure 1

High School Participation in the 20th Century

Students Enrolled in High Schools — Grades 9-12



Source: U.S. Department of Education, NCES. (2002). Digest of Education Statistics 2001 (NCES 2002-130). Washington, DC: U.S. Government Printing Office.

In addition to Latin, Greek and mathematics, the Committee added modern subjects that, in altered form, are still considered the core of the academic curriculum: English, foreign languages, natural history, physical science, geography, history, civil government, and political economy.[7]

The Committee of Ten did not believe that this curriculum was suitable only for those intending to go on to college, but for the entire high school population including those in the manual schools and those not intending to go on to further education or training. To the objection – one still heard today – that this curriculum was not suitable for preparation for life and work, they countered that a liberal arts education, which trained the mind, was suitable for all students regardless of their future life path. Their message was simple: *there would be no distinction between those students preparing for college and those who were "preparing for life."*[8]

But this view did not prevail for long.

General studies. Through the first two decades of the 20th century, wave after wave of new immigrants, many of them poor and with little formal education, arrived in the United States and in its growing high schools. Leaders in education and industry were not convinced this population was receiving the type of education needed to prepare them for life outside of school. They assumed that most students would go on to work in unskilled or semi-skilled work after high school and that the greatest need was for students to be acculturated to American society.

In 1918, the Commission on the Reorganization of Secondary Education, a group appointed by the National Education Association, issued *The Cardinal Principles of Secondary Education.* In it the Commission stated that the primary purposes of high schools were *health, citizenship and worthy home-membership and, only secondarily, command of fundamental processes.*[9] Published by the U.S. Bureau of Education, this document helped lay the foundation for the modern American high school, with its emphasis on providing custodial care, what later came to be known as "life adjustment" education.

Enrollments continued to rise dramatically as child labor and truancy laws brought ever more students into the high schools. Attempts were still made to prepare some of these students for technical trades – Congress enacted the first federal vocational education legislation in 1917 – and college prep schools persisted for the elite. However, it was *The Cardinal Principles* vision that dominated most schools. So-called "general" studies – neither specifically college nor technical preparation – began to push out the academic and career/technical disciplines.[10] Rigorous academic studies suffered most, reserved as they were for the small minority of students deemed "college material."

> It is the belief of this conference that…the vocational school of a community will be able better to prepare 20 percent of its youth of secondary school age for entrance upon desirable skilled occupations; and that the high school will continue to prepare 20 percent of its students for entrance to college. We do not believe that the remaining 60 percent of our youth of secondary school age will receive the life adjustment training they need and to which they are entitled as American citizens – unless and until the administrators of public education with the assistance of the vocational education leaders formulate a similar program for this group.
>
> —***The Prosser Resolution, Charles Prosser, 1945***

For the majority of students, neither an academic nor a vocational curriculum was considered appropriate because these students were viewed as fit neither for the professions or the trades. At a conference on the U.S. Office of Education in 1945, Charles Prosser, the first director of the Federal Board for Vocational Education, offered opening comments in support of life-adjustment education. His comments later became known as the Prosser Resolution (see box at left).[11] The American high school with all of its ancillary cultural institutions from Friday night football to the senior prom – and its loose academic standards – became embedded in the public mind. The schools seemed to meet the demands of the time. They were universal and democratic and produced a more or less standardized product without requiring too much homework. The great mass of immigrants and their children were acculturated to American life. On average, it seemed that up through the Second World War, American youth were well prepared compared with those in other countries where universal secondary education had yet to take hold.

Sputnik - New Urgency Amid Old Expectations

Thus, it was a shock to the public when in the 1950s and 1960s the United States found itself falling behind other countries, especially the Soviet Union, in critically important academic skills symbolized by the science needed to launch Sputnik in 1957.[12] The economic rise of Germany and Japan highlighted the academic failings of American schools, as well. The state of academics in the American curriculum – particularly math and science – was suddenly decried from all corners.

Policymakers and educators responded by adding more courses and ever-larger facilities with all of the modern trappings – science labs, football fields, and band rooms. However, their concern was for the elite, defined by educators as the top 20 percent of students, who would become the scientists and engineers who would win the Cold War.[13]

What the policymakers did not do was re-examine assumptions about the capabilities of most young Americans. Schools continued to believe that students should be sorted among various tracks – academic, vocational and general – depending on their test scores and, more often, the judgment of guidance counselors as to their suitable destinies. Most students were judged not to be "college material" and, thus, did not need rigorous academic preparation. The more the schools changed (bigger budgets, better facilities), the more they remained the same (low academic expectations for the majority).

Equality and Access

Before it had a chance to fully address the Sputnik shock, the education system became the center of new storms roiling society – civil rights for minorities and equal access for children with disabilities. Throughout the 1950s, 1960s and 1970s significant efforts were made to ensure that all students had equal access to public education. Two important actions were the Supreme Court decision in *Brown v. the Board of Education of Topeka* (1954)[14] ending legal segregation, and the Education of all Handicapped Children Act of 1975 mandating full educational opportunities for all children with disabilities.

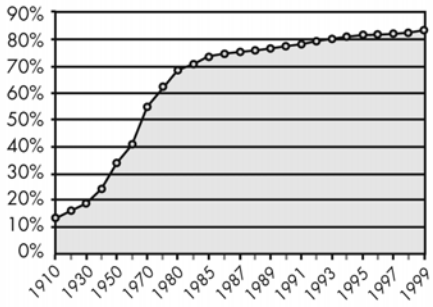
At the same time, large numbers of middle-class families were moving out of urban centers to suburban areas, resulting in dramatic decreases in the tax base for urban public education. A consequence of this outward migration was that inner cities were left with large low-income minority high schools. Despite the large amounts of compensatory funding from the federal government since the mid-1960s, these schools continue to struggle.

In the postwar period, as in the first half of the century, graduation rates improved, but there was little corresponding improvement in reading, and inconsistent improvement in math and science as measured by the National Assessment of Educational Progress.[15]

Figure 2

High School Completion in the 20th Century

Percentage of Students Age 25 and Over Completing High School through Grade 12 or a GED



Source: U.S. Department of Education, NCES. (2002). Digest of Education Statistics 2001 (NCES 2002-130). Washington, DC: U.S. Government Printing Office. Estimates excluding the GED put graduation rates much lower; see Greene, J., "Public High School Graduation." Manhattan Institute, 2003.

A Nation at Risk

This lack of overall academic progress became increasingly apparent to business leaders, policymakers, and educators as the economy faced new challenges from Europe and Asia, where post-war reform had made rigorous academic education nearly universal. In 1983, Secretary of Education Terrell Bell appointed the National Commission on Excellence in Education to address the issue.

The Commission's report, *A Nation at Risk*, marked the first time a government-sponsored report prompted serious discussion and action to implement higher academic standards for *all* students.[16] In issuing the report, the Commission expressed alarm that the rise of global trade and the United States as the leading world power, and the dawn of the information age, were not being accompanied by complementary changes in the schools.

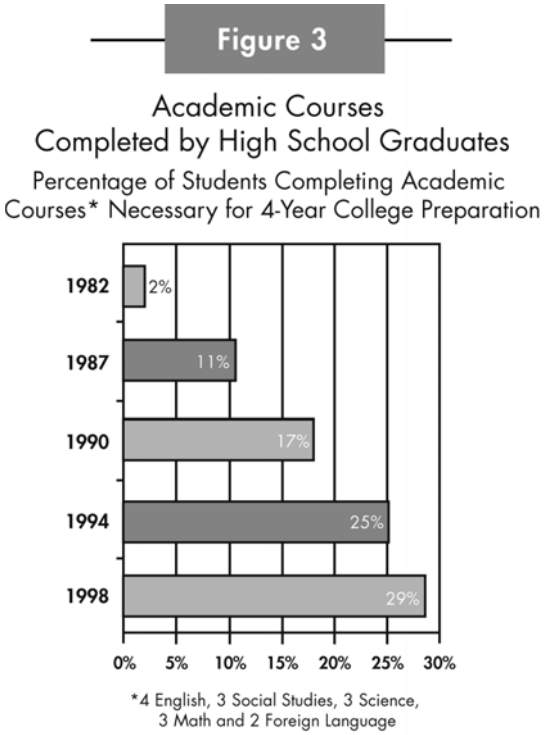
A Nation at Risk harkened back to the Committee of Ten, renewing the demand that American schools provide all students with access to a rigorous academic curriculum. Since its publication, virtually all states have raised the number of academic credits required for graduation and have made academic standards more rigorous. Some have established curriculum-based and other examinations linked to high school graduation. Some cities are also funding choice programs that offer students greater access to a more rigorous curriculum.

But progress since 1983 has been slow and uneven. After decades of reform, it is true that 60 percent of high school students, including more occupational/technical education students, now complete the number of academic credits recommended by the Commission as necessary for postsecondary education or training.

Yet it is still not clear–given stagnant test scores and climbing high school dropout rates–whether the quality of the curriculum, not just course titles, is consistent across and even within the same high schools. It is, indeed, not clear whether the rising number of students taking core academic courses represents real improvement over 20, or even 50, years ago. Moreover, whatever progress has been made in the past 20 years, the economy, and its demand for ever higher academic proficiency, has changed more than either the high school curriculum or student performance.

> "All, regardless of race or class or economic status, are entitled to a fair chance and to the tools for developing their individual powers of mind and spirit to the utmost. This promise means that all children by virtue of their own efforts, competently guided, can hope to attain the mature and informed judgment needed to secure gainful employment, and to manage their own lives, thereby serving not only their own interests but also the progress of society itself."
>
> ***—A Nation at Risk, 1983***

Today's world demands a higher level of expectations and academic achievement. Establishing high expectations for all is a critical first step. Students and their parents have made their choices about the direction they wish to pursue – 97 percent of high school graduates indicate that they *intend* to pursue some sort of postsecondary education at some point in their lives.[17] But too few are offered – or guided to – the types of courses that will prepare them for their chosen future. The nation and its education system remain far from achieving the vision of excellence recommended by the Commission 20 years ago. Nor have the low expectations that deny many students access to a rigorous curriculum been changed. And big questions still remain about what mix of instructional, curriculum and organizational strategies is right to achieve the needed results.



Source: U.S. Department of Education, NCES. (2002). Digest of Education Statistics 2001 (NCES 2002-130). Washington, DC: U.S. Government Printing Office.

The Future of American High Schools

Public high school enrollment by 2008 is projected to increase by 11% over 1998 figures[18]. The U.S. Department of Education estimates that 6,000 new schools must be built by the year 2006 to handle the overflow of K-12 students. And, as at the turn of the last century, the education system is being called upon to serve millions of new immigrant children.

Multiple foundations, organizations, and educational leaders are focusing once again on transforming the American high school. Indeed, it will require a consistent and committed partnership of parents, students, teachers, principals, and leaders at the local, state and national level to create the educational opportunities and results worthy of American youth in the 21st century. *No Child Left Behind* offers a framework to channel that commitment and to meet these historic challenges.

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[5] Boyer, p. 46.
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High School Accountability and Assessment Systems

For nearly two decades, education policymakers have struggled to improve our nation's high schools, yet student achievement has remained largely flat, the test scores of minority students continue to lag behind those of White students, and there has been little progress toward closing the international achievement gap. United States high school students consistently rank below their peers in other countries on international mathematics and science assessments.

As part of their efforts to improve student achievement, states are instituting academic assessments of all students as part of their standards-based accountability systems. The exams are designed to help schools and educators focus on improving students' mastery of the curriculum. While these systems have been gaining momentum since the mid-1990s, all states are now putting into place comprehensive accountability systems as they implement the *No Child Left Behind Act of 2001* (*NCLB*). States are:

- *Setting standards* to establish what all students should know and be able to do in the core academic subject areas;
- *Aligning curriculum and instruction* to these standards;
- *Measuring the performance* of students and schools through standards-based assessments;
- *Reporting results to the public*, including student performance on academic assessments and other outcomes such as rates of high school completion;
- *Adopting improvement strategies* to help schools and students meet higher standards; and
- *Providing supportive services and expanded educational choices* for students who attend chronically under-performing schools.

Advocates have long suggested that the goal of measuring student performance can be met by administering fair but rigorous state-sponsored examinations to complement teacher administered tests. They say that standards-based examinations create incentives for improving student performance and encourage higher expectations. They are also very clear on the point that the exams need to be carefully aligned with state standards.

Nationally, there is strong public support for such accountability systems. For example, the Public Agenda's *Reality Check 2002* found that 95 percent of high school students surveyed said they could handle standardized testing, although a majority agreed that a student's graduation or promotion should not depend solely on one test.[1] Voters and elected officials across the nation have supported such systems as well. As of spring 2002, approximately 70 percent of students nationally—in 24 states—already take at least a minimum competency examination.

Facing the Issues

Still, supporting the concept of accountability and creating an effective system are two quite different things. *NCLB* gives states great flexibility in setting standards and assessments and designing accountability systems. Yet developing such accountability systems challenges the creativity of policymakers and schools. To succeed they must:

- Set *expectations high enough* so that all students will be prepared to participate successfully as workers in a changing economy and as citizens in our democracy;

- Devise *effective assessments* to determine if the expectations are being met;

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- Create an accountability system that *motivates students and schools* to fulfill these high expectations; and
- *Support students who need extra help* in meeting these new, higher expectations.

Much attention is paid to one form of standardized testing in particular: while not required by *NCLB*, “high stakes” exams in some states can mean that a student who does not pass the test does not graduate from high school with a regular diploma. Yet whether testing is high stakes for students or used to hold schools publicly accountable for student performance, some external measure is needed to ensure equity in instruction.

While teachers have always assessed student learning in a limited fashion using quizzes, exams and questioning strategies to understand what students know and can do, the reliability of this type of assessment does not extend beyond the classroom. Likewise, to those who argue that grades are a reliable measure of school quality, the data suggest otherwise. According to a study by the U.S. Department of Education, students in high-poverty middle schools who received mostly "A" grades in English got about the same reading score on a standardized tests as did the "C" and "D" students in the most affluent schools; in math**,** the test scores of the "A" students in the high poverty schools most closely resembled those of the "D" students in the most affluent schools.[2] Grades, while valuable for immediate feedback, are notoriously unreliable indicators of global achievement.

Standardized state assessments are useful because they enable policymakers and educators to make comparisons within the state’s or district’s educational system to determine where strengths and weaknesses lie, and to address the weaknesses systematically.

Recognizing Concerns

Despite their benefits, the introduction of statewide high school examinations has raised concerns that include the following:

- Overly narrow tests will distort the curriculum;
- Teachers will spend excessive amounts of time on test preparation strategies;
- Some students may drop out before graduation, certain that they will never be able to pass one or more graduation tests;
- Poor and minority students will be disproportionately burdened by a new exam regime; and
- Standard multiple-choice exams do not accurately measure the knowledge and skills of students.

The research to date seems to allay the major concerns about standardized assessment. An analysis by Carnoy and Loeb (2003) rated all 50 states on the strength of their accountability systems and found that the stronger a state’s accountability system, the greater the gains students made on the 8th grade National Assessment of Educational Progress (NAEP) test in mathematics between 1996 and 2000, particularly for students scoring at the proficient level.[3] They found that strong accountability systems did not have negative effects on graduation and grade retention.

On the issue of excessive teacher focus on test preparation strategies, a 5-year study of high schools working to improve student achievement in reading, writing and English found that one of the key distinguishing features between successful and unsuccessful schools was that teachers in the successful schools integrated test preparation into their instruction, rather than treating it as a separate subject. Many of these successful schools had high proportions of poor and minority students.[4]

Research has also found that assessments need not distort the curriculum so long as the states provide flexibility in their definition of assessment. New York and Virginia, for example, allow schools to substitute high quality, widely recognized tests in place of their state end-of-course exams. In New York, advocates for alternative schools argued that preparing for the state exit exams would alter the unique curriculum and character of their programs, many of which successfully educate students who have done poorly in regular schools. The New York State Department of Education has now approved the use of certain Advanced Placement (AP), International Baccalaureate and SAT II tests as substitutes for

the State Regents exams. In Virginia, students can substitute scores on 40 other exams, including AP or International Baccalaureate tests, to earn their diplomas.

But the effect of exams on poor and minority high school students is an important concern. Even though the exams are intended to benefit all students, the students most immediately affected by high school exit exams are likely to be those who do not pass on the first attempt. Historically, disproportionately large numbers of poor and minority students fall into this category.

However, advocates argue that standardized testing allows open and objective consideration of the facts regarding low achievement at the school and course level for the first time. Educators and the public have better information about student learning, the achievement gap, and what works in high schools. While some may conclude that it is the *test* that is causing this gap, research shows that the gap has been around for too long and has remained pronounced for too many years to be purely the result of test bias. The purpose of identifying and highlighting achievement gaps is not to stigmatize or blame students, but to focus energy and attention at the state, district, and community-level on eradicating these gaps.

Continued use of traditional multiple-choice exams has been criticized for failing to assess the richness of the student's knowledge of a subject. To address this concern, states are increasingly adopting the use of essay and short answer formats. Fifteen states have some form of essay writing on their exit exams. This number is projected to grow to 22 states by 2008. The number of states using short answer questions in their exit exams is projected to more than double in the next 6 years from 7 to 15.[5] These changes are expected to improve the alignment of the tests with state proficiency standards since more open forms of response permit assessors to judge in-depth understanding of subject matter better.

Choosing an Approach

Two kinds of standardized assessments are of special interest to policymakers concerned about high schools. These are exit exams, which test all subject matter comprehensively, and end-of-course examinations, which measure knowledge of each subject separately.

Exit exams. Of the 19 states that have mandatory exit exams, 6 use minimum competency exams (MCEs), defined as exit exams that focus on basic skills *below the high school level*, and 13 have standards-based exams (SBEs), defined as exit exams that are aligned with state standards *at the high school level*. All states with exit exams assess English/language arts and mathematics. Exit exams for science and social studies are becoming more common. Currently, more than a third of the states with exit exams assess science and/or social studies. [6] However, studies of items on selected state tests suggest that state exit exams vary considerably in level of difficulty.[7]

States administer high school exit exams as early as grade 8 (for minimum competency) and as late as grade 11, but most are choosing grade 10 as the point when students take these exams for the first time. Yet this does not necessarily mean that all exams are calibrated to 10th grade standards. All states with exit exams allow students who fail the tests initially to retake the parts they did not pass on the first try. Typically, these students take a second version of the test with slightly different questions. States offer from two to eleven retesting opportunities in subsequent grades. Passing grades (so-called "cut scores") for the state assessments are typically based on the state proficiency standards modified by policymakers' expectations about what are reasonable levels of student achievement.

Two basic approaches to establishing cut scores have been tried. Some states set the cut score requirements high but allow plenty of time for schools to adjust before there are real consequences associated with low student performance. Others set the requirements at a low level and gradually increase them over time, and the consequences of failure become effective almost immediately.

End-of-course exams. End-of-course (EOC) exams test students on what they learned immediately after completing a course, rather than waiting one or two years to test what a student learned in a series of courses over a period of time. However, like the exit exams, they are administered by a third party rather than the teacher and, as such, allow comparability among schools and courses. The best-known EOC exams are the Advanced Placement, New York Regents, and International Baccalaureate exams. Fifteen states include, or will soon include, EOC exams as part of their high school assessment systems. The number of exams offered ranges from two in Arkansas to 15 in New York. Generally,

states offer at least one exam in each discipline, with six states currently offering at least one EOC exam in all four core subject areas, and five more that are planning to do the same. New York is the only state that offers EOC exams beyond the core subject areas. Only 4 states require students to pass one or more EOC exams to graduate high school: Mississippi, New York, Tennessee, and Virginia. Texas allows students to choose between end-of-course exams and the TAAS exit exam for graduation. Several more states are anticipating introducing these exams in the next few years. [8]

While there is no conclusive evidence to date about the effects of the EOC exams on student achievement and other outcomes, several studies conducted by Cornell University researcher John Bishop suggest that EOCs are a promising strategy. The National Education Longitudinal Study (NELS:88) followed a nationally representative sample of students who were in 8th grade in 1988 over the course of six years. After controlling for differences in students' family backgrounds, the characteristics of their high schools and communities, and other variables, Bishop found that students in New York, one of the first states to implement EOCs, registered significantly greater gains between 8th and 12th grade than students in other states on standardized assessments that were administered to the NELS:88 sample. This was true for students who had low, average, and high grade point averages (GPAs) at the end of 8th grade. In addition, Bishop found that New York students who had low GPAs (C-) in 8th grade were significantly more likely to attend college than their counterparts in other states. Bishop has found similarly promising outcomes in analyzing data from the 1991 International Assessment of Educational Progress and the 1994-5 Third International Mathematics and Science Study.[9]

Facing the future. To date, the experience of state accountability systems, and the exams that go with them, refutes the fears of the critics but has yet to fully meet the expectation of supporters for aligning teaching to state standards and improving student learning. Realizing the full potential of standardized accountability systems will require additional, careful work by states and educators. *No Child Left Behind* supports their efforts to master this critical challenge.

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Turning Around Low-Performing High Schools

Under the accountability provisions of the *No Child Left Behind Act of 2001,* hundreds of U.S. high schools will be identified as needing improvement. Even generally high performing American high schools have pockets of mediocrity where some students, for a variety of reasons, are not gaining the academic and workforce readiness skills they will need for future success. As high schools needing improvement gain more visibility, interest in ways to turn around high schools may soar.

While there is not a great deal of solid evidence on the effectiveness of various approaches to high school reform, an intense phase of innovation, experimentation, and evaluation is shedding more light on several approaches to creating effective high schools. This issue brief is intended to call attention to some of these noteworthy practices and innovations.

The Continuum and Degree of Improvement Needed

How severe and widespread is the problem of low-performance among U.S. high schools? How many schools need to be improved? The simple answer is that all schools need continuous improvement toward the goal of helping all students reach proficiency in reading and mathematics and graduate on time with a regular diploma, which are the core indicators of *No Child Left Behind*.

Clearly, out of the approximately 16,000 U.S. high schools serving over 14 million students, some schools are in greater need than others. One useful measure of the need for improvement is on time graduation or "promoting power." According to research from the Center for the Social Organization of Schools at Johns Hopkins University, for the class of 2001, there were about 1,000 high schools across the U.S. that promoted fewer than 50 percent of their students to 12th grade on time. For the same cohort, there were about 2,100 high schools that promoted fewer than 60 percent of their students to 12th grade on time. About 6 to 12 percent of American high schools, then, appear to be deeply troubled institutions that need major transformation.

More targeted interventions may be needed in the remaining high schools. In focusing on high schools with the most dramatic needs, we should not lose sight of improvements needed in other high schools. We cannot afford to be complacent about any school because the individual toll for any student "left behind" is unacceptable. But for education leaders and policymakers, the 1,000 to 2,000 troubled high schools with weak promoting power give a sense of the scale of the most serious problems we face.

Where are these schools concentrated? According to the Hopkins research, for the class of 2001, seven states have more than 100 high schools with weak promoting power. Twenty-five states have 20 or more high schools with weak promoting power. Twenty-four states and the District of Columbia have between 1 and 19 high schools with weak promoting power, and only 1 state has no high schools with weak promoting power.

While it is true that many of these schools are concentrated in high-poverty communities, this is not to say that high-poverty is the *cause* of low performance: in fact, *Dispelling the Myth Revised: Preliminary Findings from a Nationwide Analysis of High-performing Schools*, a publication produced by the Education Trust, identifies over 4,500 high-poverty and high-minority schools across the U.S. that are also high-performing. If the causes are multiple, the solution must be more complex than a one-size-fits-all approach. Indeed, it seems logical that if there are schools with a continuum of promoting power, there should be a similar continuum of interventions to improve high school student preparation—from a major overhaul of curriculum, school organization, and teacher development to reforms that are more incremental and targeted.

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Working at the School-level

The *school itself* is an important site of intervention for improving student achievement. At the school-level, organization and administration (e.g., strong principal, teachers working together) and, in some cases, external "comprehensive school reform" models or methods are needed to help turn around schools that have either pockets of persistently low-achieving students or an entire student body that is low-achieving.

Reevaluating High School Expectations

Most importantly, virtually all American high schools need a dramatic re-evaluation of their expectations. The schools we have today were never created with an eye toward establishing a high level of academic expectations for all students. Regardless of how they may have changed their graduation requirements over the last 20 years, most large comprehensive high schools—the kind that serve about 70 percent of American youth—have never seriously addressed the way they track students into vocational, general or "college prep" paths, offering different expectations and curricula for different students. Fewer still have then taken the next step and planned varying degrees of programmatic change and staff development that are aligned with heightened expectations.[1]

Noteworthy Networks and Models

To create entire high schools based on high expectations for all is extremely challenging, particularly for schools where large percentages of students are being tracked toward lower expectations. The following are networks of high schools that are noteworthy for working toward improving performance for large numbers of students:

- **Carnegie Corporation High Schools Initiatives** www.carnegie.org/sub/program/education.html
- **Gates Foundation National District and Networks Grants Program and Related High School Initiatives** www.gatesfoundation.org/Education/SmallHighSchools/RelatedInfo/EvaluationNationalSDNetworkGrantsProg-030421.htm
- **Schools Making Progress** www.sedl.org/slc/ and http://www.nwrel.org/scpd/sslc/ descriptions/index.asp

While not all of the following programs have large amounts of research yet to support their effectiveness, each addresses a different set of circumstances that can impair achievement. The American Association of School Administrators has produced a directory of these and other comprehensive school reform models that identifies the available evidence on their successes. The directory, *An Educators' Guide to Schoolwide Reform*, is available at www.aasa.org/issues_and_insights/district_organization/Reform/approach.htm.

- Initiated by the Southern Regional Education Board, **High Schools That Work** has worked with documented success to help 27 participating states turn around low-performing high schools.
- Developed by Johns Hopkins University's Center for Research on Students Placed at Risk, the **Talent Development High School** reform model divides large, urban high schools into smaller units ("academies"), including a Ninth Grade Success Academy and academies based on career themes for students in the upper grades.
- **First Things First** is a K-12 reform model developed by the Institute for Research and Reform in Education that is supporting widespread reforms in Kansas City, Kansas; Houston, Texas; Shaw, Mississippi; and other communities.
- **Co-NECT** emphasizes integrating computer technology with project-based learning.
- **Expeditionary Learning Outward Bound** engages students in "expeditions" consisting of cooperative learning projects that integrate content from different subjects, such as mathematics, language arts, social studies, and art.
- **Modern Red Schoolhouse** individualizes student progress through different educational levels (as opposed to conventional grades), while using the Core Knowledge curriculum.
- **Paideia** strongly emphasizes student-centered learning (as opposed to teacher-directed instruction), featuring teachers as "coaches" and students engaging in Socratic questioning.

State and District Policies

Leaders of school reform efforts are quick to point out that reform on a school-by-school basis is extremely difficult, if not impossible, without support from the school district. State policies also need to be aligned to support the right expectations and programmatic reforms that make higher expectations reachable.

The National Governors Association has made the following set of recommendations for state policymakers to pursue in turning around low-performing schools:

> "All states must start by reviewing their processes for identifying low-performing schools to ensure the indicators they examine are accurate measures of high school effectiveness. Low-performing high schools need comprehensive, not piecemeal, reform. Research suggests that governors should develop detailed high school improvement plans that include the following five strategies:
>
> 1. Align standards and assessments with the expectation that all students need to be ready for college success.
> 2. Increase student and teacher supports, including sustained professional development and time for collaborative efforts.
> 3. Ensure adequate human and financial resources to meet the scope and degree of educational challenges faced by the schools.
> 4. Create small, focused high schools that prepare all students for the future.
> 5. Support robust, high-quality public school choice options."[2]

High Schools: Too Big, Too Impersonal?

A good amount of literature points to smaller scale or size as an important ingredient in making schools more personalized and engaging for students.[3] There is a relationship between the size of schools and the percentage of teachers who report that apathy, tardiness, absenteeism, dropping out, and drug usage are serious problems in their school.[4] Moderate size (e.g., a primary instructional unit of 100 students and a school of no more than 800-900 students) may be a necessary factor contributing to a more focused program, effective teacher development, and an atmosphere of personalization[5].

Structure vs. Instruction

In this era of educational reform, the focus of most initiatives has been on changing the external structures and processes of schooling (e.g., adopting a block schedule, changing from a junior high school to a middle school model, reducing the size of school units, etc.). A caution about overemphasizing structure is in order. The underlying assumption of these efforts is that changes in the organizational structure of schools will have a major impact on how students learn and perform. While such changes may be important, they are seldom sufficiently powerful in and of themselves to influence student outcomes because they largely ignore what lies at the core of the teaching process (i.e., how teachers relate to students around knowledge, how content is allocated to time, how student work is assessed, how student mastery is ensured, etc.).

In short, by overemphasizing the role of structural changes in school improvement, some reformers have largely minimized or, in many cases, totally overlooked the pivotal role that quality instruction plays in determining the amount of learning that takes place for all students in academically diverse classrooms. There is a growing and very compelling literature base that underscores the vital role that such factors as time on task, opportunities to practice skills, providing quality feedback, and administering meaningful assessments of student work have on student outcomes. As James M. Kauffman so powerfully summarized:

> "…if we are going to help students…we are going to have to change course. We cannot continue to avoid focusing on instruction! We cannot continue to suppose that consultation and collaboration [and structural changes] will somehow make up for the deficit in instruction. We cannot rely on substitutes for…. intensive, relentless instruction."[6]

Conclusion

High schools of all sizes and shapes need improvement. Some need wholesale change, including the creation of new programs and new organizational structures. Others may need more targeted interventions to help improve the performance of a specific subset of students who are being left behind.

As leaders from each state and school district implement the accountability requirements and adequate yearly progress goals of *No Child Left Behind*, they will need to think strategically about how best to target a continuum of interventions, keeping an eye on emerging research and avoiding the tendency to overvalue purely structural reforms. School leaders should set up-to-date and challenging expectations for all students, and relentlessly push to improve teacher content knowledge, upgrade the content of the school curriculum, and improve classroom learning and the interaction between teachers and students.

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Every Young American a Strong Reader

Too many young people cannot read well enough to get a job with a career path, participate in civic responsibilities, or simply enjoy a good book. Theirs is a world diminished by the inability to translate written words into meaningful thoughts and ideas. This low level of *practical literacy* threatens to leave behind millions of America's youth at a time when workplace and society require higher levels of reading, writing, and oral communication skills than ever before.

The *No Child Left Behind Act of 2001* (NCLB) will cause American schools to face the issue of high school reading levels directly. Under the Act, all states have established standards, tests, and accountability systems, with the goal of helping every high school student reach "proficiency" in reading/language arts and mathematics by the end of the 2013-2014 school year.

The Act emphasizes raising overall proficiency levels and also closing persistent achievement gaps among students of different races, ethnicities, and family incomes. Under NCLB, every high school in every state, regardless of whether it receives federal funds, must establish yearly progress measures and publicly report its progress in meeting them.

Much remains to be learned about adolescent literacy. Toward this end, through the Partnership for Reading, the National Institute of Child Health and Human Development and the Office of Vocational and Adult Education, the Office of Special Education and Rehabilitative Services, and the Institute of Education Sciences within the U.S. Department of Education are supporting research projects that will develop new knowledge in the area of adolescent literacy. The specific focus is on the discovery of cognitive, perceptual, behavioral, genetic, and neurobiological mechanisms that are influential in the continuing development of reading and writing abilities during the adolescent years, and on methods for the identification, prevention, and remediation of reading and writing disabilities in adolescents. The Partnership expects to fund at least three five-year studies of specific secondary reading interventions beginning Fall 2003 (www.nifl.gov/partnershipforreading/adolescent/default.html).

Facts on Literacy

The state of literacy among American youth is alarming and not getting better:

- An estimated one-third of students enter ninth grade with reading skills that are two or more years below grade level.[1]

- Twenty-eight percent of 12th-grade public school students – an estimated 800,000 students – scored below the "basic" level on the National Assessment of Education Progress (NAEP) 2002 reading assessment, meaning they could not demonstrate an overall understanding and make some interpretation of texts they were asked to read.[2] Excluded from this count, of course, are the many students who drop out of high school prior to 12th grade and who also may have limited reading skills.

- While the reading skills of elementary and middle school students have improved modestly over the past three decades, the reading skills of 17-year olds have not. The average scores of 9- and 13-year-olds on the 1999 NAEP long-term reading assessment were significantly higher than they were in 1971. The average score of 17-year olds, however, was no higher in 1999 than it was in 1971.[3]

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- Thirty-five percent of undergraduates participate in a remedial education course during their first two years of postsecondary enrollment. Forty-five percent of the undergraduates enrolled in remedial education during the 1999-2000 school year took a remedial writing course, and thirty-five percent took a remedial reading course.[4]

- Seventy-three percent of employers rate the writing skills of recent high school graduates as fair or poor. [5]

These young people enter a workforce in which there are already too many adults who lack the literacy skills they need to win and succeed in the high-skill jobs that increasingly characterize our economy. The most recent national survey of adult literacy estimated that 40 million adults had low-level literacy skills—capable, for example, of reading a Social Security card and signing on the line marked "signature," but unable to determine from a pay stub the amount of gross pay they earned.[6] While some of these adults are immigrants who did not attend school in this country, a large number of these men and women attended and exited American high schools without the skills they need to succeed.

Rising to the Challenge

It is clear that something must be done to improve literacy among high school students. The following provides some examples of strategies that have been developed to do so:

- **Literacy in the high school context.** The National Reading Panel (NRP) identified five basic components of literacy instruction for elementary school students: phonemic awareness, phonics, fluency, vocabulary, and comprehension. Building on NRP's research, many educators are incorporating additional elements into their efforts to help high school students master reading skills and comprehension.[7] These include:

  - Extended learning time
  - Teacher modeling of reading and thinking strategies
  - Cooperative learning and text-based discussion
  - Self-selected reading at students' ability-levels
  - On-going progress monitoring.

- **Strategic Reading.** The Center for the Social Organization of Schools at Johns Hopkins University has developed the Strategic Reading program to help high schools address the literacy issue. Under this program, all 9th grade students take a daily 90-minute reading class designed to develop reading and fluency skills. By using daily mini-lessons on reading strategies; verbal modeling of reading and thinking skills; cooperative learning teams for text discussion; and extensive independent reading, this course assists students in gaining on average 2 years in reading ability for each year spent of instruction. [8]

- **Strategic Instruction.** (Deshler, University of Kansas). The Strategic Instruction Model (SIM) was developed over a 20-year period and involved $45 million of research. This comprehensive instructional system encompasses revised curriculum materials that take into account different learning styles, routines teachers can use to address the needs of learners in their classrooms, and specific steps at-risk individuals can follow to improve their chances of academic success. (http://www.ku-crl.org/htmlfiles/sim.html)

- **Corrective Reading.** (Grossen, McGraw Hill) is designed to help students who have fallen behind in their reading skills and for whom other methods have not been successful. It allows students to use a decoding program, a comprehension program, or both. Corrective Reading includes a point system based on realistic goals to motivate students who often expect to fail. (http://www.sra4kids.com/product_info/direct/standard.phtml?CoreProductID=16&navid=6)

- **Language!** (Greene, Sopris West) is a comprehensive literacy intervention curriculum for grades 1-12. Language! includes instruction in reading, writing, spelling, grammar, language, and vocabulary. (http://www.language-usa.net/)

- **Read 180** (Scholastic, Inc.) offers specially designed instructions for students at the elementary, intermediate, and high school levels – levels A, B and C. The sponsor claims Stage C ensures that high school students and adults, at all reading levels, have access to high-interest and age appropriate content. The nine topic CDs and over 50 paperback and audio books, ranging in topics from history to sports, provide older students with materials intended to be engaging for a variety of interests. (http://teacher.scholastic.com/read180/about/index.htm#highs)

- **PLATO software**. This six-part, computer-based series includes reading content that emphasizes learner outcomes, including word recognition and vocabulary enrichment, development of essential reading skills, and support of strategies used by fluent readers. Audio support and coaching in the PLATO software build skills and encourage student achievement. (http://www.plato.com/reading_secondary.asp)

Writing Skills

Writing and reading are equally critical to achieving true literacy. Unfortunately, many students who can read with proficiency cannot communicate their ideas in writing. In April 2003, The College Board released *The Neglected "R": The Need for a Writing Revolution*, a report produced by the National Commission on Writing, a blue-ribbon group composed of university leaders, public school superintendents and teachers, and an advisory panel of writing experts. The Commission stressed that writing is essential to educational and career success, and recommended a wide range of policy and program steps that can be taken to raise the level of writing in high schools and colleges.[9]

The Strategic Literacy Initiative

Teaching reading to high school students has more to do with unpacking than decoding. This philosophy is at the core of a highly touted initiative, developed by Oakland-based WestEd, that focuses on training secondary teachers of all subjects to help students hone their reading skills.

Most adolescents who struggle with reading are able to sound out and pronounce, or "decode" words, says Cynthia Greenleaf, associate director of the seven-year-old Strategic Literacy Initiative (SLI). What they need more help with is "unpacking" a word to learn its meaning and relevance within the context of other words.

SLI's Reading Apprenticeship framework is an attempt to change that mind-set. It is built around the notion that all high school teachers, regardless of the subject they teach, ought to treat reading instruction as an essential component of their curriculum. Through various SLI professional development programs, including a summer institute, teachers learn how to serve as "master" readers of subject-area texts to their student apprentices. It is not an additional course but a change in teacher mind-set that SLI advocates.

More information regarding the Strategic Literacy Initiative is available on the WestEd website (www.wested.org).

Conclusion

Reading (decoding, fluency and comprehension) is a gateway skill that allows students to access the knowledge and skills they need to acquire through their high school education. We cannot allow today's group of high school students to leave high school with inadequate reading skills, and hope that the next generation of students will arrive at high school with higher levels of proficiency in reading. Nor should we focus exclusively on students who enter high school with lower level reading and writing skills. To prepare young people for the many challenges that await them as adults, high schools must enhance and strengthen the reading and writing skills of all students throughout their high school careers.

Thus, every American high school—from the affluent suburban school to the chronically struggling school to the newest charter school—will need to organize itself in a way that ensures literacy is a key priority for every student. Through the Secretary's High School Initiative, federal, state, and local policymakers will work closely with America's high schools to help reach this important goal.

Five Levels of Literacy Support

Because of the broad array and varying complexity of student needs and circumstances, literacy programs must be customized to fit the needs of different students. The University of Kansas Center for Research in Learning developed one way of thinking about the challenges facing high school, called The Content Literacy Continuum. The Continuum categorizes literacy support into five levels.

Level 1: Ensuring mastery of critical content in all subject area classes.
All teachers, not just those who specialize in serving students with learning disabilities, can use tools that will help students better understand and remember the content presented in class. These include graphic organizers, prompted outlines, structured reviews, guided discussions, and other instructional tactics that will modify and enhance the curriculum content in ways that promote its understanding and mastery.

Level 2: Weaving learning strategies within rigorous general education classes.
Level 2 goes beyond the use of organizational aids and class discussions to instruction on selected learning strategies, such as how students can ask questions of themselves to check their understanding of what is being taught or how to use memory strategies to remember critical information for a test.

Level 3: Supporting mastery of learning strategies for targeted students.
At Level 3, students with more severe literacy problems receive specialized, intensive instruction from someone other than the subject teacher (such as a special education, study-skills, or resource room teacher).

Level 4: Developing intensive instructional options for students who lack foundational skills.
These students may have severe learning disabilities, such as a specific underlying language disorder, or they may be students whose first language is not English. Students assigned to Level 4 interventions learn content literacy skills and strategies through specialized, direct, and intensive instruction in listening, speaking, reading, and writing skills. Reading specialists and special education teachers work together at this level to develop intensive and coordinated instructional experiences designed to address sever literacy deficits.

Level 5: Developing intensive clinical options for language intervention.
Level 5 students, who are those with underlying language disorders, need specialized linguistic and cognitive underpinnings to acquire content skills and strategies. At this level, speech pathologists generally deliver one-on-one or small-group language therapy that is relevant to the high school curriculum. They typically collaborate with other support personnel who teach literacy skills and with core subject matter teachers.

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This paper is one of a series produced in conjunction with the U.S. Secretary of Education's ***High School Leadership Summit***. For more information about the U.S. Department of Education's work on high schools, visit http://www.ed.gov/about/offices/list/ovae/pi/hsinit/index.html.

Charting a New Course for Career and Technical Education

For much of the 20th century, vocational education in American high schools had a clear objective: preparing students for entry-level jobs in occupations that did not require additional education or training beyond high school. The largest high school programs were agriculture, business (primarily clerical), and trade and industry, which included, among other fields, automotive, construction trades, food services, and cosmetology. These programs were designed mainly to serve students who did not plan to go to college. Academic expectations for "vocational" students were generally low, and the math, science, and English courses to which they were assigned were typically less rigorous than those provided for their college bound peers.

This strategy prevailed for a good part of the last century. Americans with lower-level academic skills and a set of narrow, job-specific technical skills could fare relatively well in the economy if they possessed a solid work ethic. Jobs requiring low- and medium-level skills were plentiful and provided sufficient wages to support a family.

This is no longer true.

Technology and global economic competition are combining in unprecedented ways to change work and redefine the American workplace. Unlike jobs a half-century ago, most of today's jobs that pay family-supporting wages and offer opportunities for advancement demand strong academic and technical skills, technological proficiency, and further education and training beyond high school.

Policy-makers, school and college administrators, educators, and employers across the nation are rising to these challenges and charting a new course for career and technical education (CTE). They are forging new pathways to success for young people interested in technical careers by:

- Setting and helping CTE students to meet higher academic and technical skill expectations;
- Easing the transition of CTE students to postsecondary education and advanced training; and
- Raising the rigor of CTE instruction.

Setting and Helping CTE Students to Meet Higher Expectations

To succeed in our economy, all high school students, regardless of their post-graduation plans, must acquire a high level of academic knowledge and skills during high school. Employers are demanding stronger reading, writing, and math skills of all of their workers—and reporting that too many recent high school graduates are not making the grade. Seventy-three percent of employers rate the writing skills of recent high school graduates as fair or poor, while 63 percent express dissatisfaction with graduates' math skills.[1]

Certainly, there are jobs available for young people who decide to enter the job market immediately after high school. However, without strong academic skills they may have difficulty accessing on-the-job or other training opportunities they will need to advance in their careers. Moreover, in such a dynamic economy as ours, a young person just starting out can expect to change jobs as many as 15 times over the next half-century they will participate in the workforce.[2] Men and women who have a solid academic foundation will be the most able to adapt nimbly to changes in the economy, family circumstances, and personal interests that may require them to learn new skills.

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High Schools That Work. Thoughtful education leaders and practitioners are working on several fronts to ensure that all students, including those choosing a technical program of study, leave high school with the solid academic foundation they will need for a lifetime of employment and education. *High Schools That Work* (HSTW) is a comprehensive school reform strategy initiated by the Southern Regional Education Board in 1987 to improve the academic achievement of CTE students. It has now expanded its mission to encompass the entire high school curriculum. HSTW expects students to combine their technical studies with college preparatory academics consisting of at least:

- 4 credits of English;
- 3 credits of mathematics including Algebra I, Algebra II, and Trigonometry;
- 3 credits of science, including 2 in college preparatory biology, chemistry, or physics;
- 3 credits of social studies; and
- One-half credit in basic computing technology.

This reform model also strongly encourages participating high schools to offer a "major" in a technical or non-technical area, more intensive career guidance and academic counseling, and tutorial assistance for students who need extra help. HSTW has become one of the most widely recognized high school reform strategies in the United States, with a network of 1,100 participating high schools in 27 states. Student performance on math and reading assessments has significantly improved at many of the participating high schools.[3]

Talent Development High School. The educational needs of young people attending high poverty, urban high schools are particularly acute. By some estimates, the typical 9th grade student in a high poverty, urban community enters high school with 5th to 6th grade reading and math skills.[4] *Talent Development High School with Career Academies* is a research-based reform model created by the Center for Research on the Education of Students Placed At Risk that is designed to help troubled urban high schools increase student achievement and provide quality career and technical education. Ninth grade students attend small, self-contained "success academies" taught by interdisciplinary teams of teachers. All students complete a study skills course and instructional time is doubled in math and English for those students with below grade level skills. Grades 10 through 12 are structured as career academies that offer a common core of academic courses with a blend of career and technical education courses. Tutoring and extra help are easily accessible. Teachers are provided time during the school day to plan and consult with their colleagues. "Coaches" also provide teachers with sustained, intensive professional development to support their work with students.[5]

Some high schools implementing the model are seeing promising results. At two Philadelphia high schools that began implementing Talent Development three years ago, for example, the number of 9th grade students who have remained in school through 11th grade has doubled. Student performance on standardized academic assessments is also rising. At one school, the percentage of 11th graders scoring "below basic" on the Pennsylvania math assessment dropped from 91 percent to 56 percent in a single year.[6]

First Things First. Developed by the Institute for Research and Reform in Education, *First Things First* is another promising comprehensive school reform model that uses smaller learning communities, such as career academies, as one of its central improvement strategies.[7] Kansas City, Kansas, began implementing First Things First in all of its schools in 1997 and is now reporting some impressive results. The graduation rate has increased significantly and student achievement has improved in reading and math at all grade levels.[8]

Easing the Transition of CTE Students to Postsecondary Education, Advanced Training, and Apprenticeships

Entering most high-demand, technical occupations that pay family-supporting wages now requires completion of some training or education beyond high school. Making the pathway from high school to further education seamless and easily navigable is essential to preparing young people for the future.

Tech-Prep. Tech-Prep was designed to prepare students for technical careers through a 4-year program of related academic and vocational course work. The Tech-Prep program was conceived to span the last 2 years of high school and first two years of community college. Now more than a decade old, the federal initiative has spawned more than 1,000 local consortia of community colleges, local educational agencies, and businesses that promote the pursuit of higher education by CTE students. Many outstanding programs have emerged from this movement, but they are too few in number. Only an estimated 10 percent of Tech-Prep consortia offer the comprehensive "2 + 2" model envisioned by the proponents of the program, serving about 5 percent of Tech-Prep students. Only 15 percent of Tech-Prep high school students earn and use college credits for "articulated" technical courses offered through Tech-Prep programs [9]

The engineering technology program established by the *Miami Valley Tech-Prep Consortium* in Dayton, Ohio, demonstrates how effective the Tech-Prep model can be when it is implemented comprehensively. The program begins in high school with a mix of rigorous academics and technical coursework and culminates with one of the 15 associate degree engineering programs at Sinclair Community College. While in high school, students may earn up to 15 articulated credits toward their degrees. To assess their academic preparation for college, students take the COMPASS math and reading placement test during their junior year, giving them more than a year to address skill deficits that might cause them to be placed in remedial classes in college. Students who complete the high school portion of the program and continue in their studies at Sinclair receive a $3,000 scholarship that is paid from non-federal funds. A 2002 quasi-experimental evaluation found that participants in the program were less likely to need remediation when they entered college and were more likely to return to continue their studies the following year.[10]

Middle colleges. A growing number of community and technical colleges are creating high schools on their campuses that support and accelerate the transition to college through a blend of secondary and postsecondary coursework. Many of these "middle colleges" focus on helping average to low-achieving students make successful transitions to postsecondary education. *Washtenaw Technical Middle College* (WTMC) is a charter high school that serves approximately 300 at-risk students on the campus of Washtenaw Community College in Ann Arbor, Michigan. Many of its students have low literacy skills or diagnosed learning or other disabilities. To help entering students transition successfully to college credit courses, WTMC offers academic "core transition" courses, career development seminars and study skills courses. Students then proceed to dual credit academic and technical courses offered by the college, as they continue to receive academic support, counseling, and other services from WTMC. Paid workplace internships are part of the curriculum. Students must earn a postsecondary certificate or an associate degree in one of 37 career areas in order to graduate. During the 2000-01 school year, 73 percent of WTMC graduates earned at least a postsecondary certificate in addition to their high school diploma. More than half earned an associate degree.[11]

Distance learning. Community and technical colleges also are taking advantage of distance learning technologies to give CTE students in rural, geographically isolated communities, the opportunity to participate in dual credit technical courses.

For example, through an innovative distance learning partnership with *Garden City Community College*, small high schools in southwest Kansas are now able to offer their students a full complement of agriculture courses that they otherwise could not afford to provide on their own. Garden City instructors use live, interactive television to teach a sequence of dual credit agriculture courses to students across southwest Kansas. Students may earn up to nine college credits that they may apply toward degrees offered by Garden City and other area community colleges, as well as Kansas State University and Fort Hays State University.

Apprenticeships. Apprenticeships that combine classroom instruction with paid work-based learning provide another important avenue to careers that offer family-supporting wages. Employers, employer groups, and employee associations currently sponsor apprenticeships in more than 500 occupations. They are particularly common in construction and manufacturing occupations. Apprentices must complete a minimum of 2,000 hours of closely supervised on-the-job training for which they are paid wages that are often about half of what is paid a fully trained worker. They must also complete related academic and technical coursework that is often provided by a community college or other educational institution. Graduates of registered apprenticeship programs are awarded journey worker certificates that are recognized by employers nationwide.[12]

Apprenticeships in many higher-paying occupations are very competitive, and applicants with strong communication and math skills, as well as some foundation technical skills related to the occupation, have a clear advantage. To help more

young people access apprenticeship opportunities, a number of high schools, community colleges, and apprenticeship sponsors have created "pre-apprenticeship" programs that offer high school students academic and technical instruction and part-time, on-the-job training that lead seamlessly into a full-time apprenticeship after they graduate from high school.

Raising the Rigor of CTE Instruction

Many of the fastest-growing and better-paying occupations also now require a higher level of technical skills than ever before. Automotive industry experts, for example, note that the cars and trucks sold today "feature more sophisticated components than were in the NASA Apollo 11 spacecraft,"[13] demanding more advanced technical know-how from service technicians than in previous decades. To help students meet these higher expectations, CTE leaders are working closely with industry partners to create a new generation of more technically rigorous CTE programs.

State standards and assessments. A number of states are implementing content standards for CTE courses and assessments that measure the technical skills of CTE students. For example:

- Through its Vocational Competency Achievement Tracking System (VoCATS), *North Carolina* has developed industry-validated blueprints for 129 CTE courses that include curricula, instructional strategies, and item banks for use by teachers to construct classroom tests and by the state to develop assessments for accountability purposes. CTE students must complete a criterion-referenced, end-of-course assessment, the results of which count as part of their final grade. The state also uses the assessment results to evaluate local programs. [14]

- *Pennsylvania* assesses the technical skills of all students who complete a CTE program using an array of tests developed by the National Occupational Competency Testing Institute and industry associations, such as the Air Conditioning and Refrigeration Institute and the Computer Technology Industry Association. The state uses student performance data to evaluate local CTE programs. Each student who scores at or above the national norm on the assessment is awarded a state skills certificate.[15]

- The *Utah* Skill Certificate Program awards incentive funding to participating school districts on the basis of the performance of their CTE students on industry certification tests, state licensing exams, and skill assessments developed by the state in partnership with industry. Students who perform well on the assessments are awarded skills certificates.[16]

Industry-developed curricula. In many career areas, industry is expanding beyond its more traditional role as a curriculum advisor to take the lead in developing and supporting the implementation of a specific curriculum. For example:

- Launched in 1990 by the Ford Motor Company, the *Ford Academy of Manufacturing Sciences* (FAMS) includes a paid internship and courses in manufacturing systems and processes, technology, science, and math that promote teamwork and the use and application of math and science knowledge to solve workplace problems. More than 70 high schools are now using the FAMS curriculum.[17]

- Founded by the Associated Builders and Contractors and other national construction associations, the *National Center for Construction Education and Research* (NCCER) offers

Who Participates in CTE?

Participation of High School Graduates in CTE: 1998

- 96 percent of 1998 public high school graduates earned one or more credits in any form of career and technical education
- 44 percent of 1998 public high school graduates earned three or more credits in occupational courses
- 25 percent of 1998 public high school graduates earned three or more credits in a *single* occupational program area (health care, agriculture, business, technology, marketing, food service and hospitality, protective services, child care and education, personal and other services, and trade and industry precision)
- 19 percent of 1998 high school graduates earned three or more credits in *more than one occupational* program area (e.g., business services and agriculture)

Interim Report to Congress, National Assessment of Vocational Education, U.S. Department of Education, 2002.

modular training curricula in carpentry, plumbing, and other skilled crafts for students who aspire to careers in construction and related fields, as well as current professionals who want to update their skills.

- Supported by major automobile manufacturers and dealer associations, *Automotive Youth Educational Systems* (AYES) provides young people with the foundation technical and applied academic skills they need to secure entry-level employment as service technicians and to pursue college-level studies in automotive technology or advanced technical training offered by automobile manufacturers. Local automobile dealers are actively involved in the implementation of the program, offering each student a paid internship and mentoring by an experienced mechanic. More than 330 schools in 44 states currently offer an AYES program.[18]

A Challenge for a New Century

Innovation and creative reform in CTE abounded at the close of the 20th century. Forward-looking men and women in many communities across the United States recognized the dramatic changes unfolding in our economy and began the difficult work of re-tooling, and sometimes rethinking, how we prepare young people for occupations in many technical fields. Our challenge as we enter a new century is bringing their innovations to scale—helping all schools in all communities rise to the new standards of excellence that are being set by these pioneers.

College and Career Transitions Initiative

Launched by the U.S. Department of Education in 2002, the College and Career Transitions Initiative (CCTI) will identify effective strategies, program models, and curricula that ease student transitions from high school to postsecondary technical programs in the high-demand occupational areas of information technology, health care, engineering, law and public safety, and teacher education.

CCTI is supporting 15 community college/high school partnerships that will develop academically rigorous programs of study that connect course offerings at the secondary level with increasingly advanced academic and technical courses at the postsecondary level. Projects must implement the following elements:

- A coherent sequence of high-level academic and technical skill coursework in high school that includes dual credit technical education courses;
- Rigorous academic instruction that is based on state standards;
- Sustained and intensive professional development for teachers and college instructors;
- Academic and career related counseling and other student services;
- Creative delivery strategies, such as distance learning and computer assisted applications; and
- Articulation between associate and bachelor degree programs.

More information about the initiative is available at: http://www.league.org/league/projects/ccti.

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Dual Enrollment: Accelerating the Transition to College

High school students who take a full academic load can meet their graduation requirements well before the end of their senior year in high school. For students who want to go on to postsecondary education – and most say they do – dual enrollment programs offer a leg up in getting through college and may save on college costs in the process.

The term "dual enrollment" refers to an arrangement where students are enrolled in courses that count for both high school and college credit. These programs are also called "dual credit" or "concurrent enrollment." Parents and educators find dual enrollment attractive because it keeps students academically challenged throughout their high school career. In this way dual enrollment supports the *No Child Left Behind Act*'s goal of encouraging greater academic rigor during the high school experience.

At its core, dual enrollment allows students to progress to their next academic challenge without having to wait until high school graduation. Proponents of dual enrollment argue that these programs:

- **Prepare students for the academic rigors of college** by exposing them to the type of intense curriculum that research has found to promote bachelor's degree attainment.[1]
- **Lower the cost of postsecondary education** for students by enabling them to earn free college credits (depending on state policy) and shorten their time to degree completion.[2]
- **Provide students with more realistic information** about the academic and social skills that they will need to succeed in college through their participation in actual college courses.[3]
- **Provide curricular options** for students, particularly in high schools that, due to small size or inadequate funding, are unable to offer interesting and exciting electives.[4]

What We Know

At this time, nationwide numbers are not available on the growth of dual enrollment programs. However, information is currently available from specific states to support the perception of growth in programs and enrollment. In New York City, for example, the number of colleges offering dual enrollment grew from six to seventeen between 2000 and 2001.[5] In Virginia, there were 6,700 high school students in dual enrollment programs in 1997, as compared with only 2,000 in 1991.[6] In Texas, the percentage of high school students taking dual enrollment courses tripled, from 2 percent to 6 percent of the total student population, in the past decade.[7]

However, despite the growing popularity of dual enrollment programs, little rigorous research has been conducted on their effectiveness. Most published literature is descriptive or focused on student and parental opinions and attitudes.
The literature that does address program outcomes varies greatly in quality. For example, few studies attempt to take into account other factors that might influence program outcomes, even though many dual enrollment programs target highly motivated and academically successful students. Without understanding how these factors influence outcomes, it is difficult to determine if the findings are due to the program or to other factors, such as student motivation and academic achievement. One study, conducted by researchers at the University of Arizona, did take into consideration prior academic achievement and found that students who participated in either AP or dual enrollment (or both) experienced lower drops in their grade point averages during their freshman year when compared with other University of Arizona freshmen.[8]

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While dual enrollment programs have the potential to help students enter and succeed in postsecondary education, there are many factors that still need to be explored. More information is needed on:

1. How many and what types of students participate in dual enrollment;
2. What program features are most common;
3. Whether these efforts support the transition and persistence of students in postsecondary education; and
4. How state policies influence program structures and practices.

Variations on a Theme

Dual enrollment programs differ from other credit-based transition strategies. One important distinction is that dual enrollment programs are shaped by state policies and legislation and thus may differ considerably from state to state. Other credit-based programs, or initiatives, are more homogeneous because they are supported by private or federal organizations. For example, Advance Placement (AP) is a College Board program and Tech-Prep is supported by federal legislation.

Dual enrollment programs, for the most part, offer identical courses to those offered to regularly enrolled college students. This distinguishes them from such other credit-based programs as AP or International Baccalaureate (IB), which modify college-level curricula for use in high schools.

Dual enrollment students also receive a college transcript from the sponsoring postsecondary institution and are therefore eligible to apply the credits towards a degree or certificate once they enroll in college. In contrast, AP and IB students must take and score well on an end-of-course exam to be eligible for college credit, even if they succeed in passing the course itself.

Dual enrollment programs do vary widely in how they are financed; who can participate; where the course is offered; who teaches the course; what the student mix is; and the intensity of the experience.

Some programs require students to pay their own tuition and fees, while others ensure that participation is free. Some dual enrollment programs have restrictive eligibility requirements – often requiring students to gain admission to the postsecondary institution in order to participate. In addition, dual enrollment courses may be offered at a high school or a college campus, and may be taught by a high school teacher or a college professor.

The programs vary in their intensity, as well.[9] Some programs are categorized as "singletons," meaning that they are only a small part of students' high school experience. Other programs adhere to a "comprehensive" model and encompass most of students' junior and or senior years. Students in these dual enrollment programs take virtually all of their courses through dual enrollment, sometimes even leaving their high school for full-time study on a college campus.

Dual Enrollment

Dual enrollment programs share a set of common features, but great variation exists within each feature:

- **Tuition** – ranges from student responsibility for tuition and fees to no cost to students.
- **Eligibility** –ranges from few eligibility requirements to extensive requirements focused on GPA, placement exams, SAT/ACT, and state assessment tests.
- **Instructors** – high school teachers and/or college professors.
- **Location** – high school and/or college campus.
- **Student Mix** – high school students or combined groups of high school and college students.
- **Intensity** – ranges from single classes to comprehensive program.

State Policies and Initiatives

All but 3 states allow some form of dual enrollment program, according to the Education Commission of the States.[10] These policies can be loosely classified as either "comprehensive" or "limited." Twenty-one states have comprehensive policies with few course restrictions, liberal credit-granting policies and minimal (or no) student fees. Twenty-six states have "limited policies," which do not provide funding for student tuition and have more restrictions on credit and student access. The funding provisions in state policies can affect program participation, especially for students from low-income households. If tuition assistance is not provided, many of these families are not able to afford the costs associated with college attendance. Federal financial aid cannot be accessed until completion of a high school diploma.

In part because of the wide variation in state policies, researchers have not examined the impact of policy decisions on dual enrollment participation and growth. However, the limited support for the program in more than half the states almost certainly restricts the growth of participation in dual enrollment programs. Funding decisions have important ramifications on whether courses are supported at the school-level. In Illinois, for example, a policy change allowing both high schools and colleges to receive average daily attendance (ADA) funding was followed by a 240 percent growth in the number of high schools participating in dual enrollment programs.[11]

The following are examples of state dual enrollment initiatives:

- **Minnesota** was the first state to develop a dual enrollment program, which it calls the *Postsecondary Enrollment Options Program*. State statutes mandate that schools must provide students with dual enrollment opportunities. The state has also set participation guidelines that include: students may not take more than the equivalent of two years of coursework through the program and schools may not offer students developmental or remedial coursework. Students pay no tuition or associated costs.[12]

- **Washington** state's comprehensive *Running Start* program is an example of a comprehensive state program. In order to be eligible to participate students must meet eligibility requirements focused on, among other things, class standing and college entrance exams. Students are required to pass the same entrance exams as other students enrolled at the college. Students selected for this program are highly motivated, since Running Start offers them a campus-based college experience that generally takes the place of their junior and senior years of high school. Students are not charged tuition in order to participate, but the sending high school does lose funding.[13]

- **Texas** provides for a voluntary dual enrollment program. Schools are not mandated by the state to provide students with dual enrollment opportunities, though they are strongly encouraged to do so and most high schools do participate. In an effort to encourage dual enrollment opportunities, both high schools and colleges are reimbursed the average daily rate for dually enrolled students. The state, however, established strict eligibility requirements for participation in dual enrollment. Students must meet the college's admissions requirements, and achieve a passing score on the state's academic assessment.[14]

Conclusion

Dual enrollment programs appear to offer much promise in adding academic rigor to the high school experience by providing students with opportunities to experience college level work. However, policymakers face a number of challenges as they devise dual enrollment policies. In particular, policymakers need to consider how they can:

- Set eligibility standards and structure programs in ways that enable all students who can benefit from dual enrollment to participate;
- Maintain the rigor of regular college courses;
- Promote and sustain successful secondary-postsecondary collaborations; and
- Develop financing mechanisms that are equitable for the secondary and postsecondary sectors, as well as students and their parents.

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College Transition Programs: Promoting Success Beyond High School

Parents have higher educational aspirations for their children than ever before: 86 percent of parents want their children to pursue some postsecondary education.[1] Young people themselves share these high aspirations. The National Education Longitudinal Study, which followed a nationally representative sample of 8th grade students beginning in 1988, found that 88 percent of 8th graders expected to participate in some form of postsecondary education right after high school.[2] While many had the desire, far less actually enrolled and even fewer graduated from college. Twelve years later, the study found that 63 percent of these students had attended some type of postsecondary institution following high school,[3] 47 percent had earned some college credits, and 30 percent had completed a bachelor's degree or higher.[4]

Many of these young people fail to realize their aspirations because the process of preparing for life after high school is often a mystery to them. Making matters worse is our current system of college advising. K-12 educators cite a number of problems with our preparation system including inadequate college resources and materials, inequitable college advising by counselors and teachers, inequitable college preparatory curricula, and a general lack of teacher knowledge of college preparation issues.[5]

American youth need to have not only access to postsecondary education and training but also the knowledge and skills necessary to continue their education beyond high school. Studies examining the benefits of postsecondary education have concluded that education beyond high school increases earning potential and employment opportunities.[6]

There are many valuable options available to students for education and training beyond high school, including programs that lead to apprenticeships and certificate, associate, and bachelor degree options. This paper focuses on programs primarily designed to help students make smoother transitions into traditional colleges and universities. These *college transition* programs counsel students about the types of high school courses that prepare them for college-level work, the college application process, the required entrance assessments like the SAT or ACT, and the steps in applying for student aid.

The Need is Great

The primary goal of college transition programs is to provide students with early awareness of the benefits of continuing their education by enrolling in college. These programs encourage students to think about college, and at the same time provide the academic and other support services students need to enter college. Sometimes referred to as “early intervention programs,” services range from academic tutoring, to college application assistance, to help in accessing student aid.

The need for transition programs appears to be great for those students who are minorities, disadvantaged, whose parents did not go to college, and students with disabilities. Data indicates that minority students graduate from high school, enroll in college, and complete college at much lower rates than other students. In 2001, 55 percent of African American and 52 percent of Hispanic high school graduates enrolled immediately in college, compared to 64 percent of White graduates.[7] Students whose parents have not attended college have similar needs. According to a 2001 report by the National Center on Education Statistics (NCES), “disparities exist along all the stages of the path to college” for students whose parents did not have any type of postsecondary education compared with students whose parents had a bachelor’s degree. Students whose parents did not have any type of postsecondary education are more likely to be African American or Hispanic and to be from families that earn less than $25,000 per year. [8] Students with disabilities are also considerably less likely to enroll in postsecondary education than their nondisabled peers.[9]

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Support for transition programs stems from the need to close these educational gaps. Policymakers and educators argue that college transitions programs are needed in order to address the historical disparities that exist in our educational systems. "America is a diverse country, racially, economically, and ethnically," President George W. Bush has said, "and our institutions of higher education should reflect our diversity."[10]

Range of Services

The nature and content of college transition programs vary widely. Some programs offer minimal academic counseling while more comprehensive programs offer a broad array of intensive college preparatory services. Comprehensive programs typically provide the following services:

- **Academic enrichment** activities that enhance the curriculum including tutoring, summer school, after-school programs, and extra coursework;
- **Information sharing** to educate students and parents about college options, testing and admission requirements, financial aid procedures, and campus life;
- **Mentoring** by a peer or adult that provides educational and social support; and
- **Social enrichment** activities that provide students with the opportunity to learn leadership skills, set-goals, visit college campuses, and explore the arts.

What We Know

Participation. Researchers estimate that there are thousands of college transition programs in the United States.[11] A 1994 *Survey on Precollegiate Programs for Disadvantaged Students at Higher Education Institutions*, sponsored by the U.S. Department of Education, found that approximately one-third of sampled postsecondary institutions operated a transition program.[12]

Due in part to the wide range of programs and sponsors, national data on the number of students involved is limited. Participation data do exist for federally sponsored programs. Upward Bound and Talent Search projects, for instance, served nearly 823,000 students from grades six through college graduation in fiscal year 2002. In the same year, GEAR UP, another federal program, served an estimated 1.2 million students.[13]

While the numbers may seem impressive, studies suggest that only a small proportion of the students who could benefit from these services actually receive them. Data collected from 1992 high school graduates through the National Education Longitudinal Study (NELS) reveal that approximately five percent of students considered educationally at-risk reported participating in Upward Bound, Talent Search, or similar programs.[14] A more recent study estimates that the federal programs provide services to less than ten percent of eligible students.[15]

Effectiveness. Research on the effectiveness of college transition programs has been limited, as very few programs have been rigorously evaluated. Many programs claim success, although the evidence supporting these claims is often anecdotal or not based on conclusive research practices. Even among those programs that have been rigorously and independently evaluated, differences in program practices, program intensity, and target populations make it difficult to apply findings to other programs.

Nevertheless, the existing research suggests that some programs can have positive effects on students. One national study, *Toward Resiliency: At-Risk Students Who Make It To College*, used the NELS data to compare high school students who were involved in transition programs with similar students who did not participate. The findings revealed that participants in transition programs had nearly twice the odds of enrolling in a four-year college as non-participants.[16]

Upward Bound, one of the largest college transition programs, has been closely studied using rigorous evaluation methods. A study sponsored by the U.S. Department of Education revealed mixed findings,[17] including:

- Participating students had higher educational expectations and earned more high school, math, and social studies credits compared to a group of similar students not involved in the programs.

- Upward Bound did not appear to influence students' in-school behavior, participation in extracurricular activities, grade point average, or high school credits earned in English or science.
- Upward Bound students were no more likely to attend a community college or baccalaureate institution than a comparison group of students; however, they did earn more non-remedial credits from four-year colleges, were more likely to receive financial aid, and were more actively engaged in college life.

What Is Being Done

Federal Support. [18] While many organizations such as Diploma Plus, Puente Project, Project Grad, MESA, and AVID offer comprehensive college transition services at the local, state, and national levels, one of the largest financial supporters of college transition programs is the federal government.

Since college access continues to be a national policy priority, the federal government provides funding for state and local college transition efforts under the Higher Education Act (HEA). The Upward Bound and Talent Search programs have supported the transition from high school to college for several decades.[19] More recently, the 1998 amendments to the HEA created the GEAR UP Program, which awards grants to states and partnerships to provide services at high-poverty middle and high schools. GEAR UP begins serving entire cohorts of students in middle schools and follows the cohort through high school.[20] Federal support for Upward Bound and Talent Search was approximately $400 million in 2002, with an additional $283 million dedicated to GEAR UP programs.[21]

State and Local Programs. College transition programs vary considerably from location to location. The following are some examples of programs around the country:

- **The Puente Project**[22] has been implemented at 56 community colleges and 36 high schools in California. Sponsored by the California Community Colleges and the University of California, the project has served approximately 43,000 students directly. Puente's three-part model focuses on teaching, counseling, and mentoring. English teachers deliver a rigorous academic curriculum that develops college-level critical thinking and writing skills. Counselors provide intensive academic and career counseling. Mentors, from the local professional community, serve as role models to Puente students. To apply the model, Puente trains school-level teams in program requirements. The components of the model are fully integrated into the school's existing curriculum, as opposed to an after-school, weekend or add-on program.

- **Upward Bound at the University of Montana.**[23] The program prides itself on serving students from diverse cultural backgrounds who aspire to complete a college degree. The vast majority of the students (65 percent) are American Indian. All students meet weekly with their local Upward Bound counselor for academic advisement; assistance in math, science and English high school courses; and support counseling. UB Montana also includes a summer and bridge component. Upon graduation from high school, Upward Bound seniors enter the UB Bridge Program. Graduates get a head start on college by enrolling in three University of Montana courses that carry a total college credit load of 8 to 10 credits (a full-time summer session load).

- **The Academic Bridges to Learning Effectiveness (ABLE)**[24] at Longview Community College in Lee's Summit, Missouri, is an example of a program developed by a community college to serve students with disabilities. The ABLE program provides a structured curriculum and intensive support services to help students with learning disabilities and brain injuries make successful transitions to college. During their first semester, students complete a basic core of courses that are designed to orient them to the college environment and to provide them with college "survival skills," such as time-management, note-taking, and research techniques. Though ABLE is open to students of all ages, Longview makes special efforts to market the program to high school students and their parents by collaborating with secondary school counselors and hosting campus visits.

Conclusion

Policymakers and educators must consider such critical issues as the impact of transition programs on student outcomes, how best to design such efforts, what are the critical components of programs, and who has access to these programs.

Access. Given that only a small proportion of the students who might benefit from these services actually receive them, serious attention should be paid to expanding access to them through school-based, comprehensive efforts. Some researchers have referred to college transition programs as a lottery where only the lucky—those in a specific school or assigned to a school counselor aware of such resources—have access.[25]

Quality. Performance standards should be established to improve the quality of services available. College transition programs are not held accountable to specific standards of consistency or quality. For example, high attrition rates are regularly noted in the research as being a persistent problem in need of a remedy,[26] but there are no standards or benchmarks for success in this area. An additional challenge is the variety of structures and services, resulting in inconsistent program quality.

Integration. Transition programs need to be viewed not as fix-it strategies, but as part of comprehensive counseling programs and as integral to the process for transforming the American high school. Currently, most college transitions programs are "add-ons" and not part of comprehensive counseling programs at the school level. If more students are to be served, then comprehensive counseling programs need to be part of and support the reforms being undertaken by schools. At the high school level, these programs must educate students about the range of career options available and the level of postsecondary education needed to pursue different career interests. Even for students who have firm plans to attend a traditional college or university, integrated career awareness activities are likely to help them make a decision about a school and an academic major that is more grounded in knowledge than in intuition.

Design. Attention needs to be given to the critical components of college transition programs. Transition programs should provide a range of postsecondary and training options to students based on their career interests. The focus of many traditional college transition programs is towards helping disadvantaged students access traditional baccalaureate-degree programs. But in today's economy, there are many other forms of postsecondary education requiring solid academic and technical preparation that lead to successful employment.

Reaching high expectations. Most importantly, today's American high schools need to be designed to set high expectations for all students, while offering a variety of personalized strategies and options to help students reach these high levels of performance. We need to assure that all students finish high school with a strong set of academic knowledge and skills as well as the habits needed for continued education and workplace success. This is the most important prerequisite to helping students make a smooth transition to education and training beyond high school.

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