A Common Core Curriculum For the New Century

By Patte Barth, The Education Trust

What does a high school diploma do for new graduates?

Offer a chance at jobs that support a family? Qualify its holder for entrance into the military? For decades, Americans have come to expect a diploma to do at least those things. But today, most young people and their parents also expect it to open the door to postsecondary education, whether directly after high school or later to advance their careers.

Our young people understand the relationship between education and earnings better than anyone. Approximately three-quarters of all high school graduates are immediately using their diplomas to gain access to more schooling. Many more will seek additional education over the course of their adult lives.

Regardless of the path they initially choose, these young people are gambling on the same thing—that their diploma will prepare them to succeed.

But it is not exactly a safe bet. Despite sky-rocketing college-going rates, all but a few states still consider college-preparatory courses to be *electives*. Neither are the skills and content needed for further education typically reflected in state high school assessments.

In the pages ahead, we look at the implications of this mismatch for young people. What does the labor market hold for young people with varying levels of education? What does it take to succeed in college compared to the demands of work in a rapidly changing marketplace? How do today's high school requirements and course-taking patterns stack up against those needs? Finally, we examine the following question: what can we do to assure that all, rather than just some, of our young people are adequately prepared for the future?

While we focus primarily on the economic benefits of education that are so important to children and their parents, we should be clear from the outset that economics are not the only reason all students need a solid academic preparation. Day-to-day life has also become more complicated and ambiguous. As individuals and as citizens, we are required to make decisions that increasingly demand high levels of understanding and judgment.

A trip to the doctor, for example, often requires an understanding of statistics and analytical ability so we can compare the relative merits of particular treatments. In our neighborhoods and workplaces, we must communicate with people from different backgrounds who often speak other languages or have different cultural values. And we are called upon as voters to make choices about difficult issues regarding the environment, science break-throughs and others where the answers involve trade offs and few precedents to guide us. We need to know enough to be able to navigate these unfamiliar waters.

But ultimately, we must prepare all young people for success because it is the right thing to do. Despite decades of effort, our country has been unable to conquer the inequities that divide us as Americans. The data show that as individuals' education and skills increase, the income gap closes. Yet educational opportunities are not shared equally among our young people. Nor are the schools and colleges they do attend doing an equal job at preparing youngsters to high levels of performance.

Which brings us back to the high school diploma. What should it say about the new graduate and where should it take him or her? The question is turning out to be fairly easy to answer: a diploma should prepare its holder for both postsecondary education and the demands of the workplace. This report explains why.

Current market returns for education

Young people today with a high school diploma can expect somewhat better odds for full-time employment than those who leave school without a diploma. Graduates can also count on earning more money.

But not much. The benefits of a high school diploma alone turn out to be slight, especially when compared to the employability and earning power that college brings.

While adults with a high school diploma have a clear edge in the job market over those without it, they are *twice* as likely to be unemployed as those with a Bachelor's degree. In the flush market of the late 1990s, the average unemployment of high school graduates was a relatively low 4%. Not bad, but certainly not as good as the 2.5% for workers with Associate's degrees and 1.9% for those with B.A.s (Day & Curry, 1999).

The real reward, though, is not just having a job. It is what that job pays. Young adults with a high school diploma earn close to $2,000 more annually than their peers who left high school early. But they earn $6,000 *less* per year than those with an Associate's degree, and nearly $20,000 less per year than those with a B.A. (U.S. Census

Table 1

Education Pays: Annual Earnings of 25-34-yr-olds by Attainment, 2001

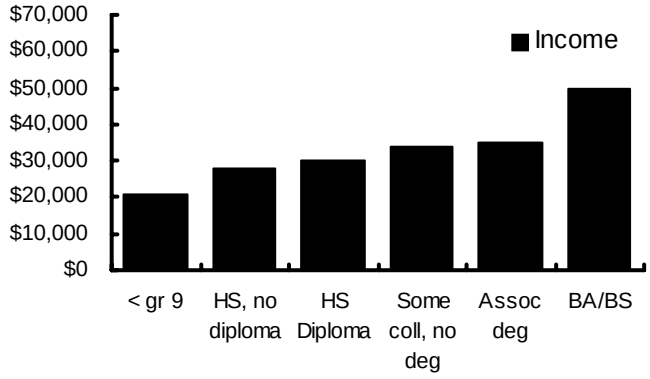
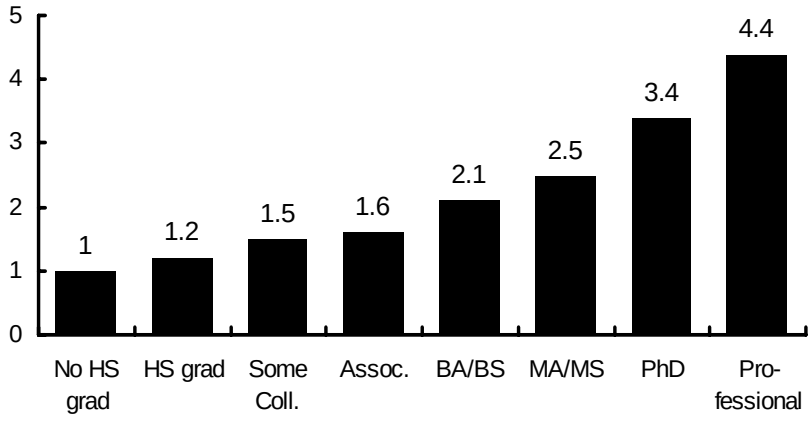


Table 2

A Degree's Worth Over a Lifetime



Bureau, 2002).

Over a working lifetime, these dollars really add up. According to the Census Bureau, full-time workers with a B.A. earned $2.1 million between age 25 and 64, compared to $1.2 million for workers whose education stopped at high school graduation. Analysts for the Bureau expect these differences to increase over the coming years (Armas, 2002).

The relationship between education and wages is not entirely new, of course. But changes in the workplace over the last few decades make the link considerably stronger. The Information Age set off a rush to find skilled workers in many occupations and simultaneously reduced the proportion of unskilled jobs. Long gone are the days when the plucky, but unschooled youth could work his or her way up from the shop room floor. Not only do jobs on the way up the career ladder require college-level skills, the positions on the bottom rung can demand more than a standard high school diploma, too.

Labor economists Carnevale and Desrochers (2002) cite two phenomena that point to the economic need for more skilled workers. First is the growth of jobs in occupations that have traditionally required some college, notably in the fields of education and health-care. The second phenomenon, and by far the most significant, is what they call the "upskilling" of jobs that did not require college before.

Office workers, for example, comprise the largest segment of workers today and their ranks are growing. These workers are also among the most educated. But they were not always so. Thirty years ago, 38% of office workers had some college. Now more than two-thirds—69%—are college-educated (Carnevale & Desrochers, 2002).

Not just credentials, skills count, too

There is considerable pay off in today's job market for those with more years of education. But it is not just paper credentials that count. Researchers have shown that individuals with highly developed skills gain greater advantages in the workplace over those with similar educational credentials but with less developed skills. Simply, the more you know, the more you earn.

The benefits of a good academic preparation accrue across racial and ethnic groups, making education the truly great equalizer in this new economy. Chart 3 shows the average wages for African American, Latino and White young adults by level of educational attainment. Across the board, the years spent in school translate into higher wages. Yet the time itself does little to narrow earnings gaps between

Table 3

Degrees Pay for Young Adults of All Groups

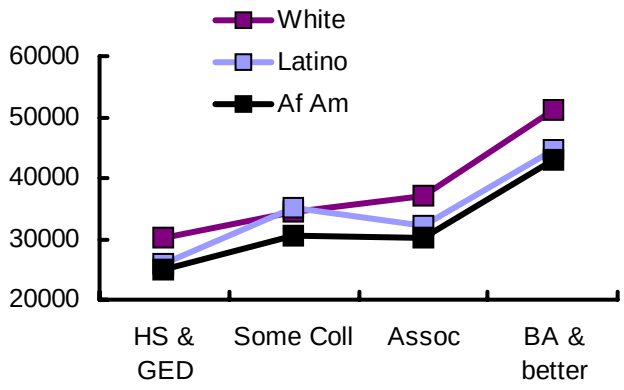
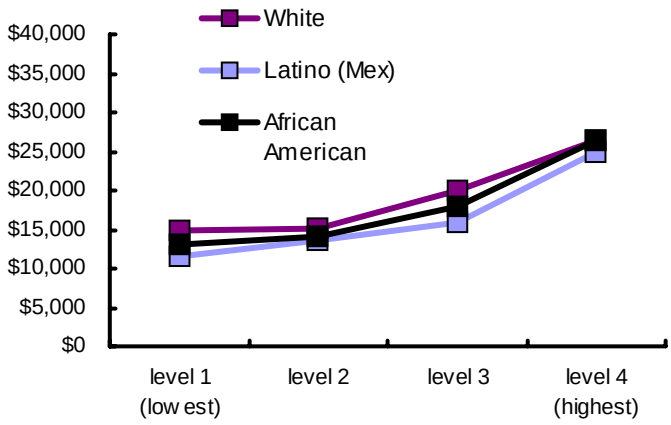


Table 4

At Highest Literacy Level, Income Gaps Close



groups. However, analyst Andrew Sum shows that based on *knowledge and skills*—as opposed to *credentials* alone—the earnings gap between people of color and Whites narrows. At the highest literacy level, income inequities between groups are virtually nonexistent (Sum, 1999).

The economic advantage of education to our children's future is obvious. The greatest returns convey to those with at least a Bachelor's degree and the most developed skills. Nonetheless, just having some college or postsecondary training offers young people a better shot at good jobs and decent wages than a high school diploma alone.

Despite this, our educational system continues to be stingy when it comes to doling out knowledge, skills and preparation for continuing education. The consequences of our educational parsimony are profound. The U.S. now has the dubious distinction of having the greatest income disparity of any other economically advanced country in the world (Carnevale & Desrocher, 2002). Indeed, the present division between rich and poor is at its widest since the 1920s (Krugman, 2002). And virtually all of this vast and widening income gap has roots in a knowledge and skills gap that is also the largest in the developed world.

The future holds grim prospects for young people who lack sufficient skills, for they are increasingly shut out of good, middle-income jobs. The occupations experiencing the largest growth are those that demand well-developed cognitive skills and postsecondary credentials (Carnevale & Desrochers, 2002). More and more, workers with education beyond high school have the advantage in getting and advancing in skilled, blue-collar jobs as well. If the diploma our graduates hold does not provide them the foundation for continued learning, they will also be shut out from reentry into the education pipeline and their attempts to change their circumstances will be futile.

Enough good jobs to go around

While the benefits to the individual are clear, there are some observers who doubt that the national economy could absorb an entire class of well-educated graduates. These skeptics argue that high growth rates still will not produce enough high-paying, high-performance jobs to go around, citing as evidence the large numbers of low-skilled jobs that need to be filled. One of the most vocal critics, Gerald Bracey (1997), has written, "at the societal level, the call by industry for more highly skilled workers is a cynical ploy to drive

down the wages of skilled labor." Later in the same piece, he said, "educating all will take care of the equity situation but will lower wages and leave lots of highly skilled people standing around on street corners currently occupied by the low-skilled" (Bracey, 1997).

For the moment we will set aside this argument's highly undemocratic implication that it is in the country's interest to keep some children unskilled so they do not deflate wages for the allegedly more deserving. Instead we will ask if the economic scenario would play out as Bracey imagines. The data show otherwise. Over the last twenty years, both the supply of college educated workers and their wages have steadily increased. The market has not only easily absorbed more educated workers, but it has continued to reward them as well.

Indeed, it is more likely that we will have too few—rather than too many—skilled workers to meet the demand. The baby boom generation is fast approaching retirement age, taking their knowledge and skills out of the job market. According to Carnevale and Fry (2001), "Unless we increase the quantity and quality of education and training, we are unlikely to generate enough skill to replace the retiring baby boomers, especially given an increasing demand for post-secondary skill levels on the job" (p. 1).

What about the low-end jobs?

It is true that even though the relative proportion of low-skilled employment is shrinking, these jobs will continue to account for a significant share of the total job market. But it is wrong to assume that individuals in low-skilled positions will stay in them throughout their working lives. In reality, such occupations generally experience high turnover. About 30% of all low-skilled jobs are currently held by young people under 25, who typically move through these positions while preparing for other careers. In many low-end occupations, the proportion is much higher (Carnevale & Desrochers, 2002).

This is certainly the case in the food service industry where jobs are known for low skills and low pay. The number of these jobs is already high and demand for workers is projected to increase over the next decade, making food service jobs among the fastest growing in the country. At present, about two-thirds of the nation's six and a half million servers are between the ages of 16 and 19. According to the Bureau of Labor Statistics, the need to constantly replace these young workers—not the creation of new jobs—is the primary reason for high projected growth in job openings for this

Table 5

Quantitative

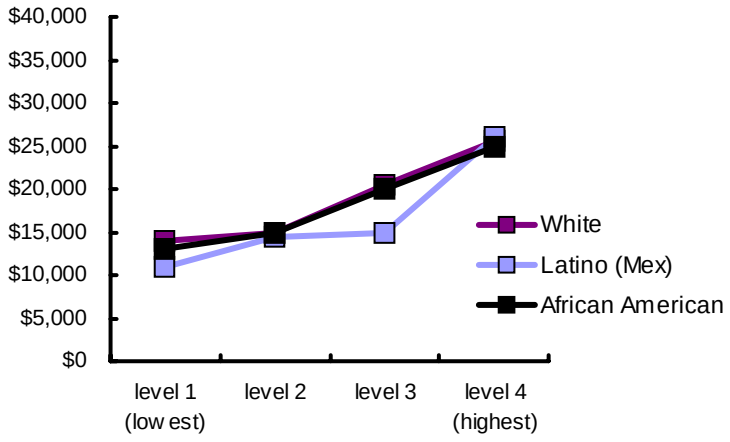


Table 6

The Proportion of College Educated Workers Has Increased As Have Their Wages

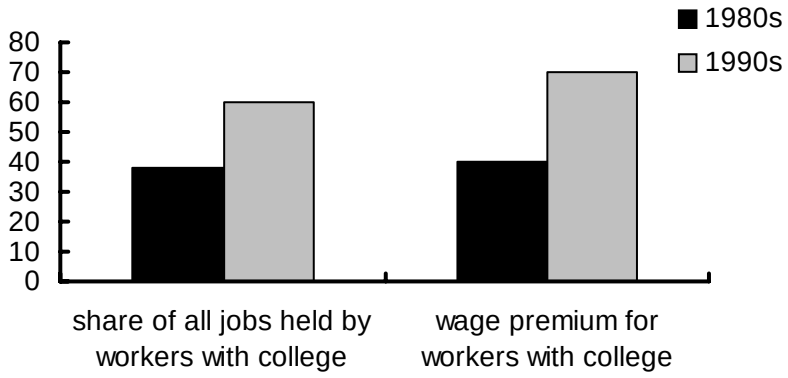
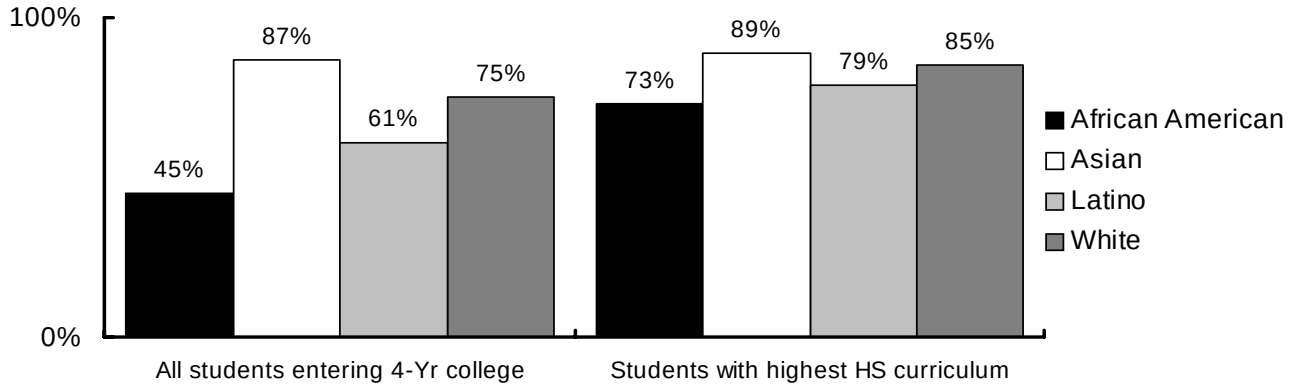


Table 7

Curriculum Counts:
Changes for Bachelor's Degree
by High School Grads



industry (Bureau of Labor Statistics, 2003a).

Low-skilled jobs for today's young people tend to be way stations, not destinations. Reform critics who point to growth in this sector as an excuse to keep students in low-level courses are not just undemocratic, they are dangerously misinformed.

Skills for success in postsecondary education

If the high school diploma has less and less purchasing power in the job market, its value in gaining access to higher education is even more tenuous. In addition to the high school credential, most four-year institutions want to see SAT or ACT scores, class rank, grade point average (GPA), a high school transcript documenting course-taking and other evidence of applicants' academic capabilities. Even "open admissions" institutions, including two-year colleges, typically require applicants to provide additional information or demonstrate their skills on a test before allowing them to enroll in certain popular academic programs, such as nursing or physical therapy.

Most colleges, in fact, admit freshmen on one basis, but refuse them entry into college-level courses until they have met another, higher set of standards generally hidden from public view. These standards are implicit in so-called "placement tests," which are ordinarily taken after students are admitted. New freshmen who pass the tests are free to begin college-level work in courses for credit. But those who fail are not. Instead, they are placed in remedial courses—a kind of limbo state for the admitted but not fully accepted, where students see their odds for eventually earning a degree diminish with each additional non-credit hour.

Although the contents of placement tests can vary from institution to institution, and from state to state, they tend to address skills and knowledge typically taught in the sequence of "college preparatory" English and mathematics courses that are offered, but not required in most American high schools. Not surprisingly, students who successfully complete those courses pass the placement tests at high rates, thereby avoiding remedial coursework. But those courses are almost never required for high school graduation and often not required even for college admission. Between one-third and one-half of college bound students never take them.[1]

Unfortunately, the consequences for them are far graver than a semester or two of non-credit courses. Research conducted by the U.S. Department of Education shows unequivocally that the single biggest predictor of college success is the quality and intensity of a student's high school courses—

[1] According to 2002 data from ACT, for example, only 58% of high school graduates who took the ACT had completed a college-prep curriculum in high school. ACT defines the col-lege-prep curriculum as at least: 4 years English, 3 years math (algebra 1, algebra 2 and geometry), 3 years social studies, and 3 years natural science.

greater than test scores, class rank and GPA. Students' academic resources also mean more than socioeconomic status. The relationship of high-school course-taking to college success is clearest in mathematics. High school students who complete math higher than Algebra 2 (for example, trigonometry or calculus) *double* their chances for earning a college degree (Adelman, 1999).

The positive impact of high school course-taking is even greater for African American and Latino students. For example, fewer than half of all African American students entering four-year colleges eventually earn a B.A. But among those with a strong high school curriculum that proportion increases to 73 percent. Likewise, 61% of all Latino freshmen earn B.A.s compared to 79% who come to college having taken rigorous courses in high school. Moreover, the gap in B.A. completions between Whites and students of color is reduced one-half when all arrive on campus with a strong high school curriculum behind them.

A mismatch between preparation and goals

In survey after survey, the vast majority of our teenagers are saying they want to go to college. So why do so few complete the courses they need to be admitted and pass the college placement tests?

There are many reasons, of course. But many students do not have the information they need. Often the adults who should advise them—their teachers and counselors—do not know how important these courses are, either.

Research conducted by the Bridge Project shows that many college-bound students simply do not know which courses are necessary not just to enter college, but to begin credit-bearing work. According to their recent report, one of the most common student misconceptions about college readiness is that meeting their high school graduation requirements will prepare them for college. Across the six states in their study, less than 12% of students surveyed knew the curricular requirements to their public postsecondary institutions (Venezia, Kirst, & Antonio, 2003).

Even parents and school counselors are misled into thinking that courses needed for *admissions* are necessarily the same as college *readiness*. But if the college-prep curriculum students take does not get them through the placement test, the new freshmen will find themselves still taking high school-level courses. Only the campus will have changed.

Higher education has not been as helpful as it should be. Few states have clear policies for which courses higher education wants for admissions. The table on pages 10-12 shows the courses that states require for high school graduation alongside those required for entry to state postsecondary institutions. Most states define courses needed for a high school diploma (eight leave this entirely to local school districts). At the same time, only 30 states have established consistent minimum statewide course requirements for admission to their public colleges and universities. Even in states that establish requirements for high school and higher education, the two systems are usually not aligned. In mathematics, just ten states have K-12 and higher education agreement on the number of mathematics courses students should take in high school. Only one agrees on both the number and topics.

The misalignment between sectors is not always predictable. In a few notable cases, course requirements for high school graduation actually exceed those for college entry. But the effect in most states is that the curriculum required for graduation—including sometimes even the curriculum labeled as "advanced"—falls short of what students need in order to succeed in either two- or four-year institutions.

For new graduates this means that their high school diploma is no guarantee they meet postsecondary education's course requirements. It is also no guarantee they have the skills they need to get a good job.

Work and college converging

If the courses required for success in college were relevant only to high school graduates who are continuing their education, this mismatch might be tolerable and our efforts could continue to be directed mostly to making sure that college-bound students take the right courses. But this approach ignores the fundamental transformation that has taken place in the workplace—a transformation that wipes out age-old ideas about minimum skills. The knowledge and skills that prepare students for college are looking more attractive in the least expected places.

Manufacturing, for example, has for many years been the occupational haven for youth who leave high school without a diploma. In 1973, 51% of factory jobs were held by drop outs; by the year 2000, only 19% were. More startling is the fact that, in adjusted dollars, the annual wages for drop outs fell by 19% over the same time period. Factory jobs performed by workers with a high school diploma increased somewhat, from 37 to 45% in 2000, but their wages fell

n/s = not specified

State	English High School Graduation	College Admissions	Mathematics High School Graduation	College Admissions
Alabama	4 Eng. 9, 10, 11, 12	n/s n/s	4 alg. I, alg. II w/trig., geom.	n/s n/s
Alaska	4 n/s	n/s n/s	2 n/s	n/s n/s
Arizona[1]	4 include grammar, writing, reading, comp., Amer. Lit., and research methods; 1/2 to include speech/debate	4 Eng. I, II, III, IV	2 n/s	4 alg. I, alg. II, geom., advanced math w/alg. II as prereq.
Arkansas[2]	4 1/2 oral communications	4 emphasis on writing; not to include oral comm., journalism, drama or debate	3 1 alg. or equiv.; 1 geom. or equiv.	4 alg. I, alg. II, geom., advanced math
California[3]	3 n/s	4 n/s	2 n/s alg., geom.	3 alg., imtermediate
Colorado	n/s n/s	n/s n/s	n/s n/s	n/s n/s
Connecticut	4 n/s	n/s n/s	3 n/s	n/s n/s
Delaware	4 n/s	n/s n/s	3 n/s	n/s n/s
Florida[4]	4 comp. and lit.	4 3 w/substantial writing	3 alg. I or equiv.	3 alg. I and above
Georgia[5*]	4 grammar/comp.; 1/2 Amer. Lit./comp	4 lit. integrated w/ grammar, usage, and advanced comp.	3 alg. I	3 alg. I, alg. II, geom., advanced math
Hawaii	4 n/s	4 n/s	3 n/s	3 geom., and alg. II
Idaho[+]	4 lang. study, comp., and lit.	4 comp. and lit.	2 from applid math, business math, alg., geom., and above	3 alg. I or applied math I; geom., or applied math II or III; alg. II
Indiana[+]	4 n/s speech	4 lit., comp., and	2 n/s intergrated math I, II, III	3 alg., alg. II, geom. or
Iowa	n/s n/s	n/s n/s	n/s n/s	n/s n/s
Kansas[6]	4 n/s	4 excludes journalism, speech, drama, theater, and debate	2 n/s	3 3 at or above alg. I

n/s = not specified

State	English High School Graduation	English College Admissions	Mathematics High School Graduation	Mathematics College Admissions
Kentucky	4 Eng. I, II, III, IV	4 Eng. I, II, III, IV	3 alg. I, geom.	3 alg. I, alg. II, geom.
Louisiana[7]	4 Eng. I, II, III, IV or Business Eng.	4 Eng. I, II, III, IV alg. I, alg, II, geom.	3 max. of 2 intro. courses	3 alg. I, alg. II, geom.
Maine	4 n/s	4 reading comp., lit., communication skills, research and reporting skills	2 n/s	3 alg. 1, alg. II, geom.
Maryland[8]	4 n/s	4 n/s	3 1 alg., 1 geom.	3 alg. I or applied math and II: formal logic or geom.; alg. II
Massachusetts	n/s n/s	4 n/s	n/s n/s	3 alg. I; alg. II; geom. or trig. or comparable coursework
Michigan	n/s n/s	n/s n/s	n/s n/s	n/s n/s
Minnesota	n/s n/s	4 comp. and lit.	n/s n/s	3 2 alg. and 1 geom.
Missouri	3 grammar and usage, comp., lit., and comm.	4 2 w/emphasis on comp. and writing; 1 may be speech or debate	2 n/s	3 alg. and beyond including alg. II
Montana	4 n/s	4 w/emphasis on written and oral comm. skills and lit.	2 ms	3 alg. I, alg. II, geom.
Nebraska	n/s n/s	n/s n/s	n/s n/s	n/s n/s
Nevada	4 reading, comp., writing	4 emphasis on comp., rhetoric, and Amer. Eng., and world lit.	3 n/s	n/s n/s
New Hampshire	4 n/s	n/s n/s	2 n/s	n/s n/s
New Jersey	4 n/s	n/s n/s	3 n/s	n/s n/s
New Mexico	4 n/s	n/s n/s	3 n/s	n/s n/s
New York[9]	4 n/s	n/s n/s	3 math A or math B	n/s n

State	English High School Graduation	English College Admissions	Mathematics High School Graduation	Mathematics College Admissions
North Carolina[10a]	4 Eng. I, II, III, IV III and one above	4 grammar, lit., and integrated math I, II,	3 alg. I alg, II and 2 above or	4 alg. I, alg. II, geom and 1 above or lg. I,
North Dakota	n/s n/s	4 written and oral comm. skills	n/s n/s	3 alg. I and above
Ohio[11]	4 n/s	n/s n/s	3 n/s	n/s n/s
Oklahoma	4 grammar, comp., and lit.	4 grammar, comp., and lit.	3 alg. I and math above alg. 1	3 alg. I and above
Oregon	3 1 written comp.	4 Eng. lang. lit., speaking, listening, writing w/emphasis on writing expository prose all 4 years	2 n/s	3 alg. I and 2 advanced math
Pennsylvania	n/s n/s	n/s n/s	n/s n/s	n/s n/s
Rhode Island*	4 n/s	n/s n/s	2 n/s	n/s n/s
South Carolina*	4 n/s	4 2 w/grammar and comp., 1 w/ Eng. Lit., 1 w/ Amer. Lit.	4 n/s	3 alg. I, alg. II, and geom.
South Dakota	4 1 1/2 writing, 1 1/2 lit., 1/2 speech	4 grammar, lit., and comp.	2 alg. I	3 alg. I and above
Tennessee*	4 n/s	4 English I, II, III, IV	3 alg. I or math for tech II or integrated math	3 n/s
Vermont	4 n/s	n/s n/s	3 n/s	n/s n/s
Virginia	4 n/s	n/s n/s	3 2 in alg. I or above	n/s n/s
Washington	3 n/s	4 3 lit. comp.	2 n/s advanced math	3 alg. I, geom., and
West Virginia	4 English 9, 10, 11, 12	n/s n/s	3 2 in alg. I and above	n/s n/s
Wisconsin	4 written and oral comm., grammar, lit.	4 n/s	2 courses which incorporate elements of alg., geom., stats.	3 n/s
Wyoming	4 n/s	4 3 w/substantial writing	3 n/s	3 alg. I, alg. II, geom.

Table 8

Education Level of Factory Workers Increasing

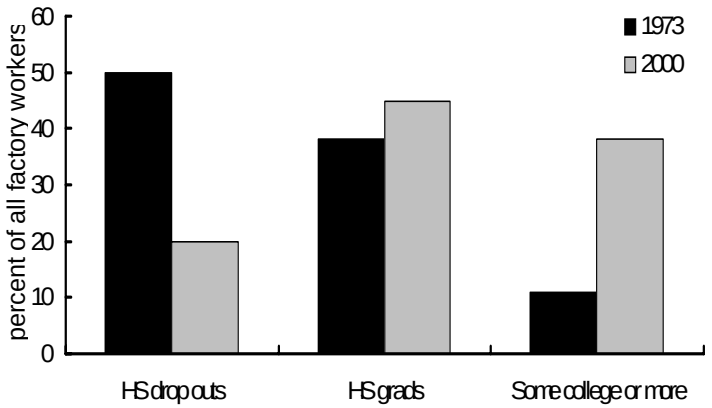
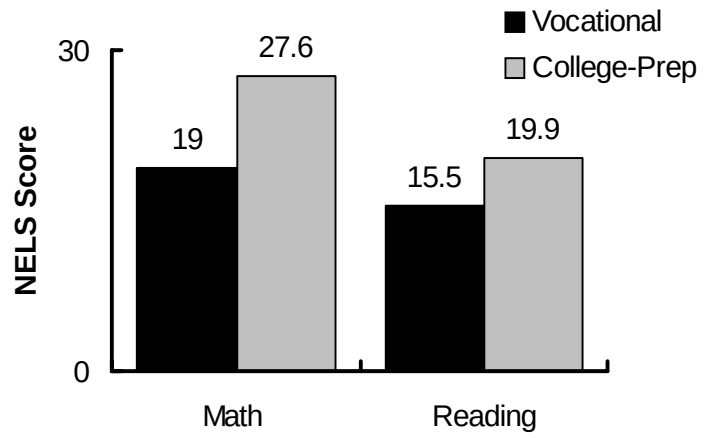


Table 9

Low Test-Scorers Gain More From College-Prep Courses



nearly as much as the drop outs. In contrast, the proportion of factory jobs held by individuals with at least some college *tripled* and their wages held steady or dropped only slightly (Carnevale and Desrochers, 2002).

The National Association of Manufacturers offers advice to young people by describing the qualifications and opportunities in various industrial occupations. Some of these offer clues to how high the ante has been raised in the preparation for skilled jobs, and explains why the standard high school diploma is not as valued these days. For example:

- Tool and die makers must go through four or five years of apprenticeship or postsecondary training, usually in a community college. On average, they earn more than $40,000 per year. The courses needed include algebra, geometry, trigonometry and basic statistics.
- Sheet metal workers also go through a four- to five year apprenticeship, although it is typically through on-the-job training. A high school diploma is required, along with technical reading, geometry and trigonometry and other technical courses.
- Avionics technicians learn their craft in trade schools. Median annual income in 2000 was also over $40,000. The courses they need include math, physics, chemistry, electronics and computers (National Association of Manufacturers, n.d.).

Unlike manufacturing jobs, which are fairly stagnant, installing and maintaining electrical and telecommunications lines is a high-growth occupation. Line installers and repairers are skilled laborers who earn up to $50,000 a year. They generally go through apprenticeship programs, either on the job or through community colleges, after completing high school. According to the U.S. Department of Labor, the skills aspiring line installers and repairers need include algebra and trigonometry (Bureau of Labor Statistics, 2003b).

College-prep for the workplace

Businesses are encountering a need for employees with higher level skills. In unpublished research for the American Diploma Project, the National Alliance of Business surveyed officials from 22 occupations, ranging from manufacturing to financial services, about the high-school level skills they believe are most useful for their employees to bring to the job.

The employers unanimously cited the need for strong reading ability. They noted that, on a purely practical level, workers need to be able to read and com-

prehend informational and technical texts. However, they were also emphatic about the importance of literature, arguing that it helps to develop empathy with people of all cultures, which they say is a necessity when dealing with diverse customers and coworkers.

The employers also said that writing ability is essential. This includes research skills, which they observed are valuable whatever the position, especially the ability to synthesize information from various sources and evaluate its relevance. They explained that factory workers, repair technicians, managers, engineers and others need to write coherently, concisely, persuasively and appropriately for audience and purpose.

In mathematics, employers across the board reported they want workers to know data, probability and statistics, and to be competent problem solvers. There was also a strong consensus for the importance of the college-prep mathematics curriculum: Algebra 1, Geometry and Algebra 2. The employers valued this math sequence for its content. But they also noted that individuals with this background stay in the mathematics and science pipeline. They are thus able to gain access to more mathematics as their jobs demand it (von Zastrow, 2002).

Research has shown that Algebra 2 holds considerable value for later success in college and jobs. Some people find that puzzling because Algebra 2 content is used directly in only a handful of the most technical occupations. The rigor and discipline have other important benefits. In their research, Rose and Betts (2001) have examined the positive relationship between taking Algebra 2 in high school and later earnings. They explain some of the effect by the access this course offers to further education. They continue:

> [S]tudents who take more advanced math classes learn skills that may be *directly* applicable to certain jobs. They may also learn logic and reasoning skills that *indirectly* make them more productive. Skills acquired through learning advanced math may also teach students how to learn, so that once they are on the job, they are promoted to more demanding and more highly paid positions than those who have acquired fewer "learning skills" (p. 17).

In the business world, there is little doubt that the skills needed for success in work and in college are now converging. But the educational system has not caught up to these changes.

Yes, Virginia, ALL students can learn algebra

Many Americans, including many educators, doubt that all young people are capable of learning subjects like algebra. All Japanese kids, maybe. All Russian kids, even. For some reason, not our students. In fact, worries about what will happen to those who fail discourage many educators from trying.

But a growing body of evidence shows that these views are dead wrong. The fact is that all students benefit from taking high-level courses, regardless of their academic record prior to enrollment.

Students of all abilities learn more in college-prep courses.

U.S. Department of Education researchers looked closely at what happens with different types of students when enrolled in different high school curriculums. Their analysis found that even students who enter high school with test scores in the lowest quartile grow more in college-prep courses than they do in either the vocational or general courses in which they are typically enrolled.

These findings are mirrored in the work of the Southern Regional Education Board's High Schools That Work Initiative (HSTW), a schoolwide reform model under the leadership of Gene Bottoms that was created primarily to improve achievement among vocational students. In its early years, the initiative sought mainly to raise standards in vocational courses. But that strategy did not produce the desired across the board gains, so participating schools were encouraged to take these so-called "work bound" students and place them for part of the day into college-preparatory courses.

Students in vocational tracks have been traditionally among the lowest achieving and are at the highest risk of failing. Yet HSTW schools that enroll large numbers of such students in high-level courses are raising student achievement and simultaneously increasing the overall percentage of program completers (Frome, 2001).

Students are more like to pass high-level courses than low-level ones.

Some students will indeed fail intellectually rigorous courses. But it turns out that fewer will fail the more difficult courses than the low-level courses in which we typically warehouse them.

This finding may seem counterintuitive to many educators who protest that giving all kids challenging subject matter is tantamount to setting most of them up for failure. It holds true even when comparing pass rates of the lowest achievers.

In a recently published study, the architects of HSTW monitored the academic performance of eighth-graders of vari-

Table 10

Students of All Abilities are More Likely to Fail Low-Level English Courses

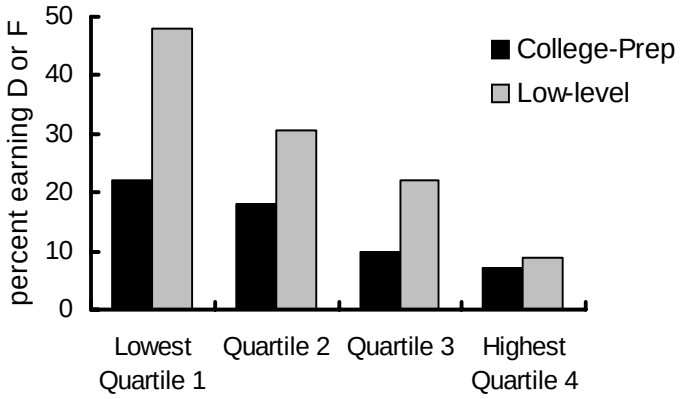
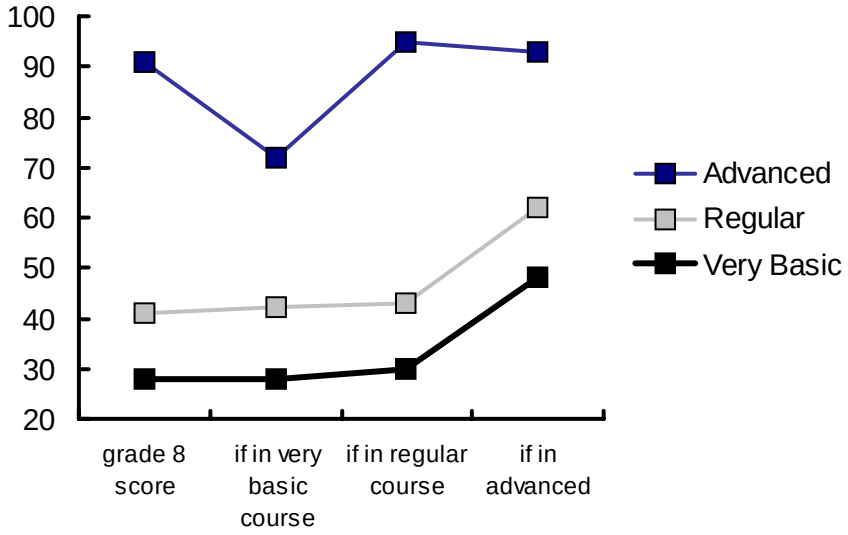


Table 11

All Students Perform Better in High-Level Courses



ous abilities in both high and low level ninth-grade courses. The research shows that low-achieving eighth-graders were far more likely to earn a "D" or "F" when enrolled in *low-level* high school English than in *college-prep* English. Interestingly, even formerly high-scoring eighth-graders were more likely to fail low-level high school English. Similar patterns were seen in mathematics and science for all except those students in the bottom quartile of performance, who were only *slightly* more likely to succeed in a low level math or science class as they were in the high level counterpart.

Sociologist Maureen Hallinan (2002) also studied the effect of course placement and student achievement in an analysis of comprehensive high schools. Like the HSTW researchers, she found that "assigning a student to a higher ability group increases the student's learning. . .regardless of the student's ability level" (Hallinan, 2002, p. 1). Hallinan was able to analyze students' test scores at grades 9, 10 and 11, and track growth according to their subsequent placement in different curricular paths.

The first discovery in her study was that ability groups are not as homogenous as assumed. In fact, there is a considerable range of "ability" *within* these groups, suggesting that placement is a far more subjective enterprise than schools would have us believe.

Because group placement turned out to be so arbitrary, Hallinan was able to compare students in one "ability" group to students with similar characteristics assigned to other groups and then predict test scores according to curricular placement. Chart 11 shows the results. Across the board, students gain the most in "advanced" courses. And once again, those who started out the furthest behind made the most dramatic progress. Students classified as "very basic" moved from the 27th percentile to 51st merely by getting into the top-level math classes.

Results like these beg the question of what schools tend to call "ability." The conventional wisdom in American education has it that only the "top" students can handle algebra and high-level English. But not only is the identification of "top" students a slippery affair, the unlucky students classified as "low ability" never have a chance. Clearly, these students are *able* when they have *access* to the content. But they have to get into the right courses first.

Educational opportunity

still diverging

The last two decades have witnessed expanding enrollments in college-prep courses, but the gains have not kept pace with the tremendous growth in college-going. And the opportunities for college-preparation have not been shared equally among high school students.

The groundbreaking 1983 report from the National Commission on Excellence in Education prompted states across the country to raise their requirements for high school graduation. At the time of the report, only 2% of American graduates were completing the Comm-ission's recommended curriculum: four units of English, three social studies, three science, three mathematics, two in a foreign language and a half unit of computer science. Even when foreign language and computers are not included, the proportion of completers was just 14 percent. But by 1998, over half of our graduates—55%—had completed the recommended curriculum in the core subjects and 29% had met the full sequence including another language and computers (National Commission of Education Statistics, 2001).

Of course, units alone do not tell the whole story. The content of the curriculum is what makes the difference. And there has been remarkable progress on this front, as well. Just in the last decade, the proportion of graduates completing three years of mathematics through Algebra 2 has increased from 49% in 1990 to 62% in 2000. Another 37% had a fourth year of advanced mathematics under their belts. Chemistry enrollments also grew—from 45 to 54%—over the same period of time (Blank & Langesen, 2001).

Table 12

College-going within 2 years:
Gaps by Race Fairly Small

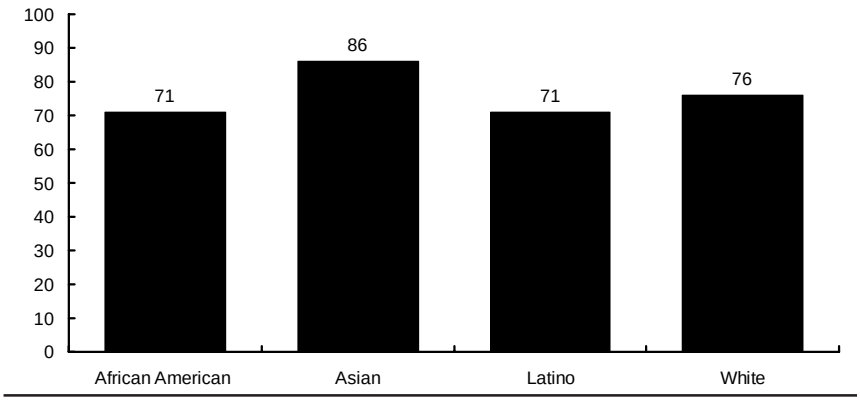
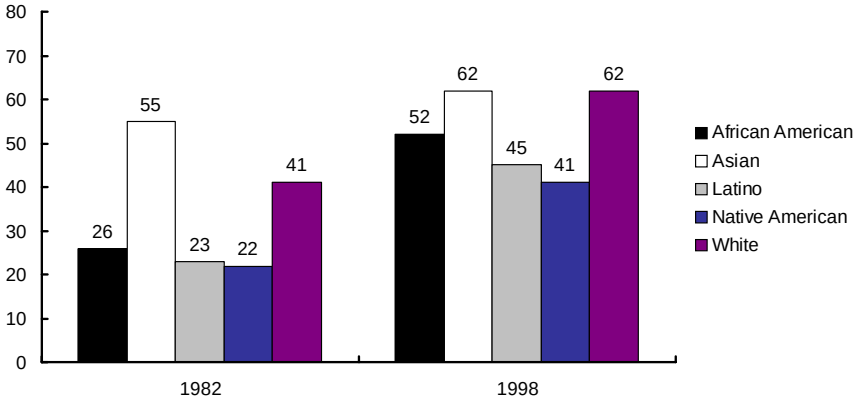


Table 13

More Students Take Algebra 2,
but Gaps Persist



Despite this progress, large numbers of American students remain locked out of the curriculum they need. For students of color, in particular, the gains have not been enough to offset inequities. Algebra 2 enrollments for African American, Latino and Native American high-schoolers doubled between 1982 and 1998. Nonetheless, only one half or fewer of such students take this high-level course compared to nearly two-thirds of their White and Asian peers. Similar patterns are seen with Chemistry.

These differences have not prevented minority students from going on to college. Indeed, the best available data suggest a gap of only about five percentage points in the proportion of White compared to African American and Latino youth attending college within two years of high school graduation. But gaps in course-taking patterns do begin to explain why graduates of color are significantly more likely to attend two-year or proprietary institutions compared to less than half of White freshmen (American

Table 14

The Same Patterns Occur in Chemistry

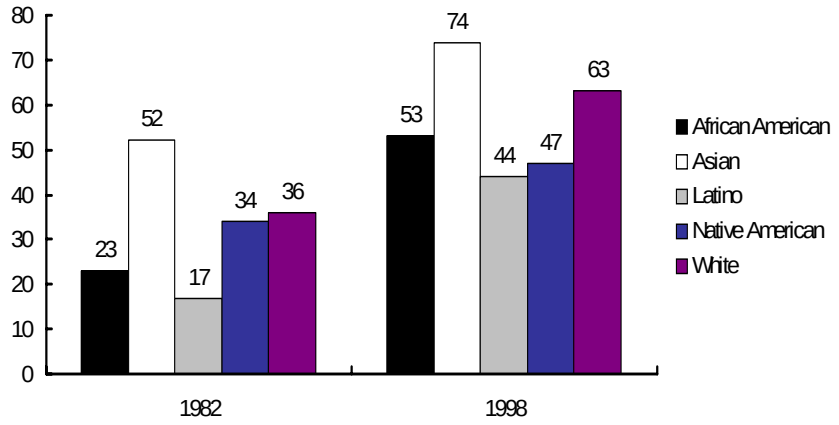
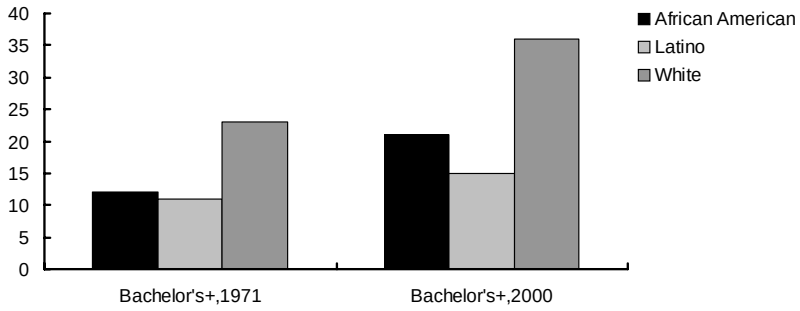


Table 15

Some Groups are Falling Behind in College Completions



Council on Education, 1999). And they also help explain why such students are considerably less likely to graduate (Wirt, J., et al., 2002).

While these inequities disproportionately strike minority students, too many American students overall find themselves ill-prepared for college when they arrive. Four out of ten high school students who take the ACT for college admissions had not taken the minimum number of courses that colleges want (ACT, 2002). Half of our college students need at least one remedial course when they get there (Adelman, 1999). As a consequence, first-year students bail out of school in alarming numbers. One in four freshmen in four-year colleges fail to return for a sophomore year. In two-year colleges, the fall off rate is nearly one in two (Mortenson, 1999).

We would not see numbers like these if students had had the right courses in high school. But as long as state policy-makers leave those determinations to different sectors, figuring out which courses students need for different institutions will continue to be the muddle it is.

Lacking clear signposts, students must rely on others to provide clues, and sometimes, to help them fight for a seat in the college-prep classroom. We also have an adult problem. Three years ago, national pollsters asked high school teachers what plans their students had for after graduation. Then they asked the students themselves. The results were eye-popping. Teachers reported that only half of their students planned to attend a two- or four-year college. Their students had different ideas: 79% said that is exactly where they would be going.

In the disconnect between students' goals and teachers' expectations, students lose, for the system controls the curriculum. More often than not, the curriculum that would prepare them for college is not the standard. What this means for young people is that diplomas may not get them the education and training they want and need.

Somehow word is getting out as more students identify the preparation they need and discover ways to get it. By placing the burden on students—and truthfully, on their parents—to get into the right curricular track, the system allows too much to chance. And the students who suffer are, once again, the very young people who rely most on their schools for guidance.

Districts defy conventional wisdom and get results

When at least three-quarters of our high school graduates are continuing their education, there should be no question that the standard high school diploma should mean college readiness. Most systems are not open to a change of this magnitude. Part of the reason is ad-

ministrators' concern about the capacity of the system to deliver the teachers, materials and supports needed. Another reason—and a big obstacle—is widespread skepticism about the capacity of all students to master challenging subject matter.

Fortunately, a few visionary school districts and states are tackling these issues head on and blazing a very new path. San Jose Unified School District in California is one. About half of this urban district's 32,000 students are Latino and almost one third come to school with limited English proficiency. Five years ago, the district was reeling under a cloud of public distrust and revolving door leadership. An intensive process of public engagement gave the school board the support needed to raise academic expectations for all students. San Jose is now a model for what can be gained by aligning high school graduation to college preparation.

The San Jose story began when the district leadership convened a series of focus groups in the community to discover what was on the minds of its various constituencies, including White and Latino parents, teachers and students. Across groups, participants consistently cited the need for high academic expectations for all students and uniform standards from school to school. In 1997, the San Jose school board responded with higher graduation requirements. San Jose high schoolers now have to complete California's A-G course sequence for college readiness in order to earn a diploma.

Last year, the first students under the new policies graduated with impressive results. San Jose students' progress in reading and mathematics outpaced the state average, with African American and Latino students posting the highest gains. Between 1998 and 2002, for example, test scores for African American eleventh-graders in San Jose rose seven times as much as their peers statewide. Their gains in mathematics were more than double the state average for African Americans. Similarly, math scores for San Jose's Latinos were nearly twice as large as the state average (California Department of Education, 2002).

More importantly, San Jose students are keeping up with the new graduation requirements even though the courses are tougher. Skeptics of a high-level default curriculum often express the fear that students will not be able to keep up with the work and will be forced to drop out. San Jose's experience is proving otherwise. Chart 17 shows that the percentage of present high school seniors on track for graduation is nearly unchanged compared to their peers of three years ago who graduated under the old system of minimum require-

Table 16

How Expectations Differ:
Plans for Students after High School

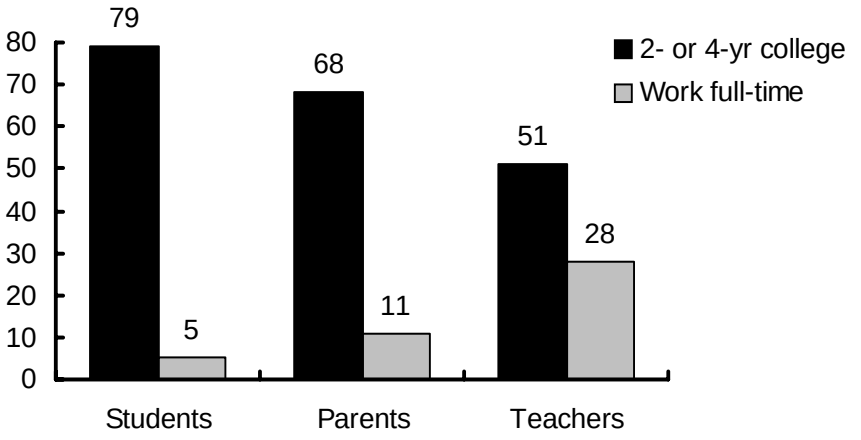


Table 17

Math Improvement at SJUSD Far
Outpaces State Average;
Achievement Gaps Narrow

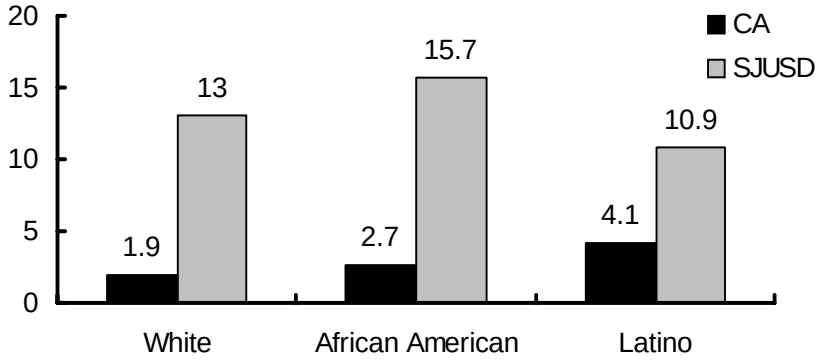


Table 18

Students are Keeping Up with Requirements

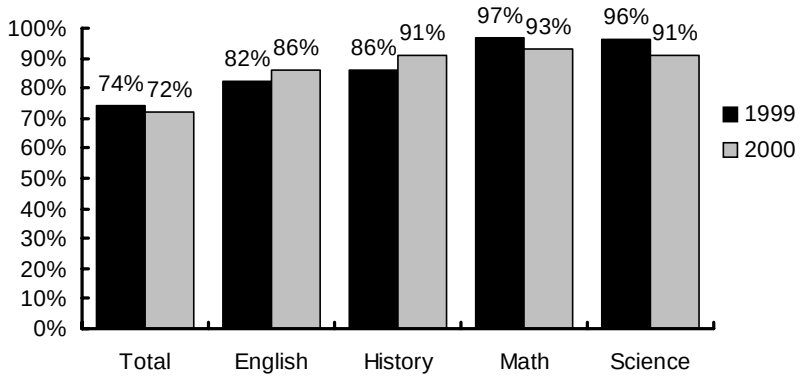
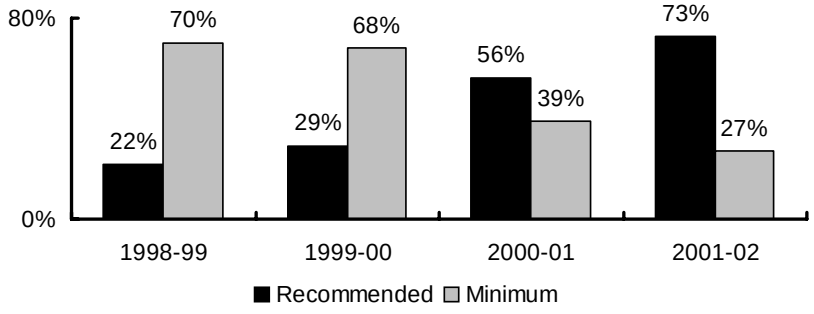


Table 19

More Houston Students Completing Recommended



ments. It should be no surprise, then, that San Jose is producing more A-G graduates even while the state average is declining.

Houston, Texas, shows on a large-scale how to implement high graduation standards and succeed with students that others have all but abandoned to the ranks of the minimally educated. Houston Independent Schools serve 210,000 students, making it the seventh largest district in the nation. Like many urban districts, Houston's student population is majority minority: 87% are either African American or Latino. In addition, 79% live in low-income households. College-prep courses became the recommended curricular path for Houston high schoolers beginning with the class of 2000. Four years ago, only 22% of the Houston's graduates completed the college-prep sequence while the vast majority, 70%, finished with just the minimum course requirements. Today that relationship has flip-flopped: 73% of graduates have completed the recommended college-prep curriculum and only 27% leave with the minimum.

Yet another urban school district in Texas proves that high standards are entirely compatible with high graduation rates. Throughout the 1990s, El Paso high schools focused on expanding student enrollment in rigorous courses. A recent national study reports that graduation rates in this high-poverty, high-Latino district are 14th highest among the 50 largest school districts in the country—a group that includes such affluent suburban communities as Fairfax County, Virginia, and Montgomery County, Maryland, in addition to the major urban districts (Greene & Winters, 2002).

San Jose, Houston and El Paso are just a few communities that are proving that high standards will not push kids out the high school door, as critics fear. Indeed, they appear to be keeping them in.

Texas and Indiana take action

The idea of aligning high school graduation and postsecondary entry requirements is beginning to take hold at the state level, as well.

Texas has taken a major step toward aligning K-12 and higher education by making the college-prep track the recommended curriculum for all students. Beginning with the class entering ninth grade in 2004, students will automatically be enrolled in this 24-unit curriculum unless they and their parents explicitly choose not to be.

Interestingly, the leadership for this policy change came largely from the business community, rather than from either K-12 or higher education. John

H. Stevens is the director of the Texas Business Education Coalition, the business group that was the foremost advocate for these changes.

Policymakers in Indiana are poised to take the recommended curriculum in a new direction. Indiana's education roundtable works across the K-12, higher education and business sectors in the state. In 1994, this committee put forth a plan to raise educational standards in the state, and in response, the legislature established the college-prep sequence of courses, the so-called Core 40, as the recommended curriculum for all high school students. But even though students were required to begin the sequence, they were not necessarily expected to complete it.

The education roundtable is now promoting the Core 40 as the required curriculum for high school graduation. They further recommend that the Core 40 assessments be aligned not only with college admissions criteria, but also with standards for college placement. As a further incentive to students, the Roundtable is proposing to tie Core 40 completion to state financial aid eligibility.

A 21st Century Curriculum

These leading districts and states are beginning to teach us that the curriculum that once seemed to make sense for the few now represents the educationally sound course of action for all of our students.

We think that following their lead is the very least all districts and states should do, for more than any other, this change immediately signals society's expectation that all young people can and should be prepared not for college or for work, but for both. Guidance counselors and savvy parents should not be the only ones to know which courses will prepare students for college. Everyone deserves the same information and the same access.

But a strong "default" curriculum is just a first step measure. There is still a lot of work to do before the curriculum will be perfectly aligned and working well for every young person, and K-12 cannot do all the heavy lifting. Higher education needs to take a long overdue look at admissions and placement policies. Not only are they often inconsistent with high school graduation requirements, they are also inconsistent between postsecondary institutions, and even between admissions and placement into college-level work in the same institution.

Clearly, a consensus about what college-ready means is needed. And because this curriculum will be the standard for all secondary students, the content needs to be justified with better reasons than "the way it has always been done." Research shows, for example, that Algebra 2 in high school is a strong predictor of college success and beyond. What about other mathematics, notably data, probability and statistics? This strand of math is conspicuous by its absence from admissions and placement tests, but is necessary for work and citizenship in addition to other disciplinary studies. What level of reading and writing skills are likewise predictive?

Business also has a responsibility to be more thoughtful and explicit about the skills that are valuable in the workplace. There are many states with business organizations that are actively involved in education reform. As in Texas and Indiana, their advocacy can do a lot to promote policy change.

Implementing the new common curriculum will, of course, raise another set of issues. Schools will need enough teachers knowledgable in their subjects and in strategies for helping all students master high-level content. They will need new models for structuring time and support for students and teachers alike. They will also need aligned assessments for both individual diagnostic use in the classroom and for school accountability.

Above all, schools will need to break the logjam of outdated beliefs that define the pres-ent high school diploma. The knowledge and skills that today's young people need to succeed in the 21st Century far exceed those that were enough for their counterparts a mere generation ago. The only prediction we can confidently make about future jobs is that they will change. Even those youngsters who go directly to work after high school will likely find themselves wanting more training, more education at some point in their working lives.

But we must keep in mind that we are not just preparing workers, we are preparing citizens. It is our own interest, then, as much as our responsibility to make sure that all of our young people are prepared for the future, whatever it brings.

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Footnotes

[1]Meeting the college admission course requirements is one of three ways in which students can demonstrate competency for admission into Arizona colleges.

[2]The required four units in math for college admissions in Arkansas begins with the high school graduating class of 2004. College Admission Social Studies requirements do not include: Contemporary American History; World Cultures; World Geography or Global Studeis; Practical Arts.

[3]The college admissions requirements are for the UC and CSU Systems. Both Systems have agreed to use the same A-G Curriculum requirements for college admissions. The requirements as presented in the above table are effective as of Fall 2003.

[4]In addition to specifying course requirements as above, Florida provides a detalied list of courses that meet college admissions requirements for each of the four core subject areas.

[5]In addition to specifying course requirements above, Georgia provides a detailed list of courses that meet college admissions requirements for each of the four core subject areas and foreign language.

[6]The requiredmath course for admission into colleges in Kansas is effective beginning with the entering class of 2006.

[7]Statewide requirements for admission into Louisiana colleges go into effect Fall 2005.

[8]The college admission requirements are for the University System of Maryland (USM). The USM includes the majority of the public four-year universities/colleges in Maryland.

[10]UNC is phasing in more rigorous requirements each year until Fall 2006. The foreign language requirement is effective Fall 2004. The math requirements are effective Fall 2006.

[11]In Fall 2003, the high school science requirement in Ohio will be three units.

[12]High school requirements are for the recommended college-prep curriculum. In Texas, all entering high school freshmen in Fall 2003 and later will be required to enroll in the recommended curriculum.

[13]Students entering grade 9 in 2004-05 and later, will be required to take four units in social studies.

*GA, NC, RI, SC and TN do not have a regular/standards diploma/curriculum path. These states have differentiated college-prep. and covational ed. diplomas/curriculum paths. For the purposes of this table, we included data on the minimum level of requirements needed for graduation. GA--Tech prep.; NC--Career prep.; RI--Career prep.; SC--Tech prep.; TN--Tech. prep.

+In Idaho and Indiana, high school graduation course requirements are by semester hours; to maintain consistency in the data table, we translated the semester hours into year long credits.

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News You Can Use

John Gugerty, Column Editor

Various organization have made publications available for downloading. Please refer to the individual Websites for descriptions.

Accessing Skills Toward Successful Writing Development

This brief for teachers, administrators, and professional development providers gives information on writing development for children with disabilities, discusses the complexity of writing and the skills needed for successful composition, and describes the particular challenges that writing may pose for students with disabilities and what areas should be the focus for remediation. http://www.k8accesscenter.org/documents/WRITINGBRIEF.doc

Customized Employment Strategies for Individuals with Disabilities Webcast Series CD Set

This 4 CD set contains 8 Webcasts with national speakers on topics related to customized employment of individuals with disabilities. Webcast topics include: Self Determination, Agency Perspective on Customized Employment Strategies, What Parents Need to Know about Community Integrated Employment, Private/Public Partnerships, Technology in the Workplace, Customized Employment Strategies, Marketing and Job Development - The Business Side of the Process, and Dispelling the Myths of Conversion. Each Webcast includes a 45 minute lecture, PowerPoint presentation, handouts, and other resources. http://www.t-tap.org/training/livewebcast/2003lw.html

Emergency Preparedness for People with Disabilities: An Interagency Seminar of Exchange for Federal Managers

This report summarizes the proceedings of a seminar hosted by the U.S. Department of Labor's Office of Disability Employment Policy on December 2-3, 2003 that brought together more than 200 federal managers and experts in the areas of disability, emergency preparedness, and workplace safety. Attendees had the opportunity to exchange ideas and share information related to the development, implementation, and maintenance of emergency preparedness plans that involve people with disabilities. http://www.dol.gov/odep/pubs/ep/index2.htm

Improving Educational Outcomes for Students with Disabilities

The National Council on Disability (NCD), a non-partisan independent federal agency that makes recommendations to the President and Congress on issues affecting Americans with disabilities, recently released a report looking at the impact of the No Child Left Behind Act on postsecondary opportunities for students with disabilities. The report, written by the American Youth Policy Forum and the Educational Policy Institute, was commissioned by NCD to assist policy leaders and stakeholders in identifying, disseminating, and aligning evidence-based outcome producing practices consistent with the Federal government's commitment to leaving no child behind in the attainment of a free appropriate public education. http://www.educationalpolicy.org/pdf/NCD.pdf