

Comments Regarding Draft Common Standards and “Validation”

by

Paul E. Barton

Education Writer and Consultant

and Former Director of the ETS Policy Information Center

Draft October 18, 2009

Contents

Introduction – 2

Readiness for Careers - 4

The Knowledge Base on What Jobs Require - 8

Readiness For College - 11

A Broader View of International Benchmarking - 13

What Part of the Whole? - 15

Summary – 18

Postscript - 18

Introduction. The latest effort toward creating common education content standards has advanced more than any previous similar effort over the last quarter century. In its favor, besides the longtime yearning for a national approach, is that the initiative comes from the states, as represented by the Governors and Chief State School Officers. They have allied themselves with the College Board, ACT, and Achieve, which has already moved the ball forward with its collaboration on Algebra II standards and matching assessments. The effort has the full support of the new administration, and the available economic stimulus funds place plenty of money on the table, along with a requirement that to receive the money, the states must show evidence of collaborating with other states on standards.

This writer claims no experience or expertise in what should be in a set of content standards in mathematics or reading. The people who wrote them, and the feedback group that reviewed them, have that experience and expertise. My concern is both with some of the claims made in the draft as well as what constitutes “validation” in what seems to be a new approach in the field of content standards.

The standards-setting process being used is unique, to my knowledge—at least unique to this country. We have done much to set content standards by using a committee to set them, for example, on fourth grade reading. We have much experience with teaching fourth grade reading, producing textbooks for it, and capitalizing on university expertise on it. This was demonstrated in an evening seminar the late Al Shanker of AFT held on charter schools. One person asked a question and said she wanted to start one. “If you started a school, what would you teach in, say, the fourth grade?” asked Shanker.

“Well, fourth grade stuff,” she replied.

So we know about grade level content standards. But these new content standards address something quite different; they address what graduating students should know and be able to do when they leave high school. A big question for validation is whether this *single* standard serves both purposes of making students ready for college *and* careers.

When a test is validated, the intent is to show that the test did what it was intended to do. If it is to predict success in the first year of college, as with the SAT, then there

must be studies to see how well the SAT does that; this establishes the SAT's "predictive validity." With common standards intended to enable graduates to be successful in college or careers, I asked a half dozen people, well known in the standards field, what they thought such validation would address. I got answers such as, "I don't know what that assignment would be," and "I don't have a clue." I have seen no criteria about what the process/questions would be, although the committee appointed to do the validating may have received such information.

I am making these comments for three reasons. The first is to explore the question of what validation of these new standards means, for it seems to be uncharted territory. The second is that these standards address the education needed for entering college and careers, and I have spent a good share of my career on the education/work relationship and the transition from school to work.¹ The third is that my report, *National Education Standards: Getting Beneath the Surface*, was released in July 2008—on the same day the early draft common standards was leaked to the press and then officially released—and my report did not address this new effort.

Readiness for Careers. The "leaving high school" standards are intended to make students ready for college and careers. This omits the large proportion of students who do not enter careers with two- or four-year college diplomas (and just having "some college" credits does not help in the labor market)². College graduates tend to speak of their work as a "career." Cabinetmakers or hairdressers may consider themselves to have a "trade." Police officers or firefighters may consider themselves to have an "occupation." People who move around the labor market operating a register in a grocery store, or laboring at a construction site, or working on a landscaping crew, often talk about their "jobs"—and that includes a great many Americans. To a very considerable extent, those who graduate from college and those who have "careers" are the same people. Yet, these rigorous standards in math and reading are presented as being necessary for *all* high school graduates—those perhaps not with "careers" but also those with trades, occupations, or jobs.

¹ Part of my experience was as President of the National Institute for Work and Learning.

² See the results of the NCES analysis of longitudinal follow-up data, summarized in *High School Reform and Work: Facing Labor Market Realities*, ETS Policy Information Center, 2006, page 19.

Are these assumptions of one-size-fits-all supported by the evidence? The draft common standards is generally thorough in its documentation of the evidence. However, in the area of data on the workplace, I see no evidence that these standards do that and *no* citations at all for mathematics standards. They are all for college readiness, international benchmarking, or comparisons with state standards (although I am not aware that states have high school “exit” standards, except as may be represented by the many high school exit tests that are for basics or something around a tenth grade education). I address these below. The standards documentation included:

The Ill-Prepared Workforce : Exploring the Challenges of Employer-Provided Workforce Readiness, Castner-Lotto et al, the Conference Board. This is listed under “works consulted.” This study was on readiness training provide by employers, which concluded that they had a low success rate. Further, they concluded that employers needed to work more closely with community colleges on workforce readiness and have partnerships on such matters as internships. The relevance is that the recruits employers are getting are not well prepared, but employers seem to be talking about community colleges, not high schools.

Ready or Not: Creating a High School Diploma That Counts, Achieve, Inc., 2004. Achieve made some careful case studies of what education was needed for college readiness, and had six “workforce task analyses.” Like common standards, Achieve’s American Diploma Project (partnered with Fordham Foundation and Education Trust) maintains that all high school graduates need the same rigorous curriculum for both college and work. Sometimes the “work” is qualified by reference to the “good or higher paying jobs” that do not require college, or for entering training programs provided by employers. For each workplace, Achieve reports what the education requirements are.

- Licensed Nurse. However, this requires an Associate’s degree or a Bachelor of Science degree.
- Actuary. However, this requires a Bachelor’s degree.
- Wafer Fabrication Technician and Manufacturing Technician. Requires an Associate degree for semiconductor processing jobs.
- Events Manager. However, this requires a Bachelor’s or Master’s degree.
- Loan Officer. However, this requires a Bachelor’s or Master’s degree

- Machine Operator at Eastman Chemical Company. This is the only one that requires only on-the-job training, but “employers prefer to hire applicants with good basic skills.” So there is *one* example of a well-paid job that does not require a college degree—but hardly a need for Algebra II.

Ready for College and Ready for Work: The Same or Different? ACT, 2006. The press release on this report states, “High school students who plan to enter workforce training programs after they graduate need academic skills similar to those needed by students planning to enter college, according to a new study conducted by the ACT.” ACT’s President said, “We can’t afford to have one expectation for students who plan to attend college and another for those who plan to enter the workforce or workforce training programs after high school.” This statement is considerably broader than the first, which just used the term “workforce training” to include all those who go to work immediately after high school. A look at all jobs where employers have a period of formal training of any length shows that they represent a very small proportion of the total employed. American employers much prefer to hire people who already have the skills they want—those who have prior experience. And the Bureau of Labor Statistics, where the requirements of all jobs are examined, says that three in ten jobs require some kind of postsecondary diploma or certificate, and all the rest require either short-term, medium-term, or long-term on-the-job training—working next to Nellie, as the process has long been called.³

The ACT study came to its conclusions with a very creative linking of different databases. A key one was the Department of Labor’s O*Net computerized system that lists the requirements of all jobs in the country in terms of education and skills, as well as a number of other qualities; to access O*Net, just type it into Google on your Internet browser. ACT combined this with its WorkKeys reading scores and data from regular ACT test scores. It used this to look at the requirements of the jobs in what O*Net calls Zone 3 jobs (the higher Zones all require advanced work in college)—where people went to work instead of to college—to show that the requirements were comparable. The

³ These BLS classifications and projections ten years out are discussed in an article I wrote for *Change Magazine*, titled “How Many College Graduates Does the Economy Need?” The percentage of jobs requiring a post secondary diploma was 29 percent in 2004, and projected to rise to 31 percent in 2014. There has been a gradual upward creep in the education requirements of jobs, but no rapid advance, as many have claimed.

problem is that Zone 3 jobs are defined by O*Net as follows: “Most occupations in this Zone require some training in vocational schools, related on-the-job training, or an Associate’s degree. Some may require a bachelor’s degree.” These are hardly jobs to slide into right out of high school, although some of them could be.

A better choice for the Act study, for jobs that students go directly to after high school, would have been Zone 2 jobs that “usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate’s or bachelor’s degree could be needed.” Still, many jobs require postsecondary education. O*Net is a very rich source of solid information that reports what jobs require based on job analyses. It could be tapped for purposes of information about what students who leave high school should know and be able to do. ACT did a useful service to use it for this purpose, and it could be used further. But this analysis does not by any means establish an identity between what is required for college and for work for those not going to college.

The American Diploma Project Workplace Study, by the National Alliance of Business, 2002. I could not find this and NAB now is out of business. However, an abstract is available on ERIC. In a total of 200 of the largest companies, the executives responsible for recruitment were interviewed for two minutes each.

- About 36 percent rated their entry level employees as satisfactory
- Fifty percent were neutral
- Thirteen percent rated entry level employees as unsatisfactory

About 34 percent were not satisfied with the “training” entry level employees had, but only 8 percent believed that these employees could not be re-trained. One assumes that employers were talking about the training for job-specific skills in the firms where the employees had worked, and not what was expected of the schools from which they had graduated.

I see no particular application of this study to the matter of how much Math or Reading/Writing/Speaking/Listening levels of achievement are needed for high school graduates when they go directly to work.

The Knowledge Base on What Jobs Require. If the common standards effort wants to create standards for all the students, and investigates what employers want when

hiring young people with a high school diploma, a knowledge base is available to help. I will not try to summarize all of it because it is rather extensive, but will offer a short guide to what exists.

In a 2000 ETS Policy Information Center report, I merged several databases using the National Adult Literacy Study, a database of 2000 job analyses, and the BLS occupational projections to obtain the prose, document, and literacy requirements of more than 300 occupations. (See *What Jobs Require: Literacy, education, and Training, 1950-2006*.)

Also, the previously referenced report, *High School Reform and Work*, contains an analysis of half the 26 million *job openings* projected by the Bureau of Labor Statistics in 44 of the largest occupations. No occupation is in the bottom level (1) in requirements for quantitative literacy, and no occupation is in the top level (5). Only four are in Level 4, where quantitative literacy becomes substantial: tasks such as using an eligibility pamphlet to calculate how much money a couple would receive in Supplemental Security income for one year. Of the four occupations requiring Level 4 literacy, half of the 25- to 44-year-olds employed in 2001 had college educations, as did 74 and 92 percent of the people of that age in the other two occupations.

In this work, I found support for the conclusions of Richard Murnane and Frank Levy, as well as those of James Rosenbaum, that employers want *basic* academic skills, such as math skills attained by the ninth grade. I would add that it could be a *rigorous* ninth grade education. In NAEP, the nearest to this is its eighth grade assessments, where only 29 percent of eighth graders now reach the *proficient* level in math, *as do only half of twelfth graders*. If schools are to get every student up to even this level, it will be with much hard work.

A good guide to what some researchers have found about all this is found in an article in Education Week's *Diplomas Count: Ready for What?* titled "What Kind of Math Matters," by Sean Cavanaugh, June 12, 2007. After looking at what the research found, the author concluded, "In many well-paid in-demand jobs that required some math, the level needed rarely rises above ninth or tenth grade content, some observers contend. Fluency in advanced math is less crucial than skill in problem-solving and in applying math to different tasks, they say."

Cavanaugh's summary is based on the work and views of James Rosenbaum, Michael Handel, Anthony Carnevale, and Donna Desrochers, although they are not all saying exactly the same thing. The research of Carnevale and Desrochers found that "less than 5 percent make extensive use of Algebra 2, trigonometry, calculus, or even geometry on the job." In a study commissioned by Diplomas Count, Handel found that while some math was used by many, "only 22 percent said they used any math more advanced than adding, subtracting, multiplying, or dividing." All the researchers are quick to say that getting the advanced mathematics, however, will be of help in getting to college and into good careers, and they did not advocate any reduction in the amount of math taken in school. I agree with that.

There is, to be sure, much concern in the employing community. In the report *High School Reform and Work*, I summarized a half-dozen surveys of what employers, including the National Association of Manufacturers and the Chamber of Commerce, said about this. Typically, employers put at the top of the list of attributes they seek in entry workers, but which they don't find enough, such factors as attendance, timeliness, work ethic, attitudes, communication skills, previous work experience, and recommendations from previous employers. Academic achievement (grades, test scores, years of school completed) are there, but typically farther down the list. Even if not academic, these qualities are also encouraged and developed in the school environment. Often, many of these are referred to as "soft" skills.

After this report was published, The Conference Board in 2006 finished a major survey of employers titled *Are They Really Ready to Work?* This is the most recent survey, and in some respects, the most complete. The Board asked employers to rank "applied skills" and "basic knowledge" separately, and separately for new entrants with a high school diploma, a two-year college or technical school diploma, and a four-year degree. Then, they asked them to rank these together, without the differentiation. Below are the combined rankings for new entrants with a high school diploma, based on what the employers considered "very important."

Rank	Applied Skill or Basic Knowledge	Percent
1	Professionalism/ Work Ethic	80
2	Teamwork/collaboration	75
3	Oral Communication	70
4	Ethics/Social Responsibility	63
5	Reading Comprehension	63
6	English Language	62
7	Critical Thinking/Problem Solving	58
8	Information Technology Application	53
9	Written Communication	53
10	Diversity	52
11	Writing in English	49
12	Life Long Learning/Self Direction	43
13	Creativity/Innovation	36
14	Mathematics	30
15	Leadership	29
16	Foreign Language	11
17	Science	9
18	Government/Economics	8
19	History/Geography	2
20	Humanities/Arts	2

The shaping of a curriculum for the public schools must take account of the many aspects of life that will unfold for the high school graduate. If one of the objectives of public education is to prepare students for the work world in which they will exercise choice in an occupational structure that ranges from scientists to trash collectors, then it is necessary to understand what that occupational structure requires. A knowledge base is available to help.

There are hundreds of employer certification examinations. Industry certification programs are diverse, and recently the Southern Regional Education Board reviewed them for use in career and technical education programs in high schools. They studied 68 associations, institutions, boards, and registries that offer multiple examinations in nearly as many fields and specialties. Out of all the examinations available, 177 were recommended for approval, 86 of which were recommended without reservations and 91 of which were recommended on a provisional basis. (See *Measuring Technical and Academic Achievement: Employer/Certification Examinations' Roles in High School Assessment*, 2009.

A few examples are Painting and Refinishing Technician, EMT/Paramedic, Carpentry Level 1, Welding, Press Operation, and Pharmacy Technician.

These certification tests have a large range of preparation requirements, from one-year certificate programs to “vestibule” training by employers after hiring.

Readiness For College. The standards are to assure that high school graduates are ready for college. These are high standards. Although I will not address the framing of the standards in these terms, I will address the assumption that there is *one* level of accomplishment in math and one level in reading for all to be ready to enter college and pass placement tests to go into credit courses.

The above discussion of employment requirements leads me to reject the proposition that a one-size high school exit standard fits both those going to college and those going to work. The evidence I am aware of also leads me to reject the proposition that one size fits all for those going to postsecondary education, and given the different degrees of selectivity that different colleges have for student admissions, I doubt that institutions of higher education would think so, either.

For example, take the SAT and the ACT, the two tests looked to for predicting college success. The table below provides average scores on SAT and ACT for the middle 50 percent of students at some selected colleges and universities.

**Selected
Freshman Class SAT – ACT
Score Ranges
For the Middle 50 Percent of Students ***

	SAT	ACT
Harvard University	700-790	31-34
University of Pennsylvania	680-770	--
Georgetown University	650-740	27-32
Ohio University	490-600	21-26
Howard University	460-680	20-29
Mississippi State	--	20-27
Ohio State University	450-540	18-23
University of the District of Columbia	Open Admissions	
Community Colleges	Typically Open Admissions	

College Handbook, College Board, 2008 edition

The average SAT and ACT scores at Harvard are 700-790 and 31-34. The average scores at Ohio State are 450-540 and 18-23. The University of the District of Columbia has open admission. Community colleges typically have open admissions and many don't even require a high school diploma. High school graduates and their counselors relate to this vast array of college entry requirements. Increasingly, anyone can get into some postsecondary institution. Some one-year certificate programs also offer a route to good paying jobs. Postsecondary education institutions have a sign out: Y'all Come. A couple of years ago, Clifford Adelman wrote an article in *Change* magazine presenting a strong case that access is no longer much of a problem and the big problem is completion. Good prior preparation, of course, is a significant factor in completion.

The other aspect of adequate preparation in high school is passing college placement tests. These tests were in the shadows of higher education until Michael Kirst shined the spotlight on them in his Bridge project and follow-up activities. But there are still a lot of unknowns. There are many different tests, ranging from the standardized test such as the College Board's Accuplacer to a test written for a specific college by the chair of a college mathematics department. I know of no inventory of these tests, no description of their levels of difficulty, and of no evidence of their validity in terms of how well they forecast readiness for success in the course for which they are used. It is an area crying for illumination, particularly if secondary school policy is to be based on them.

When schools use a standardized placement test like Accuplacer, this does not mean they have the same requirements to enter a first-year math course. The guide for using Accuplacer is very specific about this, and gives a procedure to determine the cut point on the test that matches the requirements of the specific course for which it is used. The cut point is sure to much higher for a first-year credit math course at MIT than for one at the local community college. One size does not fit all to prepare for entering credit courses.

The one size we seem to be heading for is a very rigorous curriculum—one modeled, it seems, on preparation for selected four-year colleges—even though NAEP data informs us that a fourth of high school seniors do no better in math and reading than do the top tenth of fourth graders. That is *huge* variation to contend with. And we have a

long way to go even to keep students in high school. Only 70 to 75 percent graduate, and this rate has not improved over the last 40 years. Among minorities, the graduation rate is more like 60 percent, and the research of James Heckman established that the gap between majority and minority graduation rates is wider now than 35 years ago. At the summit conference of Governors in Charlottesville in 1989, the goal they set for the year 2000 recognized such facts. The goal was to raise achievement in all four quartiles and narrow the gap on the basis of race/ethnicity and income.

As these comments were entering the last draft stage, I came across *The College Puzzle*, a blog downloaded October 14, 2009, in which Stanford's Michael Kirst, who has put more work into examining the bridge from high school to college than anyone else I know about, says:

My concern is the assertion in the draft that the standards for college an career readiness are essentially the same. This implies the answer is *yes* to the question of whether the same standards are appropriate for 4-year universities, 2-year colleges, and technical colleges. The burden for this assertion rests with CCSSO/NGA, and the case is not proven from the evidence presented in the draft.

A Broader View of International Benchmarking. One of the strongest aspects of the common core standards is the way it has drawn upon international experience in identifying strong curricula. The case for this is a desire to catch up to a half-dozen or so countries whose students do better than US students in math and science. The work of William Schmidt over a number of years has provided a solid basis for identifying such exemplars in curriculum as compared to the greater breadth but shallowness of the US curriculum, and the teaching of the same thing in more than one grade.

But in the search for such exemplars, I think there should be more than looking at countries with average test scores better than ours on international assessments. We should not jump to the conclusion that the difference in curriculum content accounts for the difference in test scores, as much as that may seem logical on its face. The truth is that these countries differ from the US in other important respects that affect achievement scores.

One is that among the top 15 scoring countries in eighth grade math in TIMMS 2007, the income inequality index for the United States (gini score) is higher by a little or a lot for all these countries except Hong Kong.⁴ How much does that inequality contribute to our lower average scores? We certainly know of the correlations in this country between income and student performance in school, and NCLB targeted the problem.

If we pick Singapore to benchmark to because it has a higher average score, do we assume that it also has more homogeneity in student achievement? This also bears looking at. Singapore has a 243-point score spread in eighth grade math between students in the tenth and ninetieth percentile, compared to a score spread of 199 in the US. Japan, which is considered to have considerable uniformity in school quality, has a higher score spread of 217.⁵

As we move down a path of a one-size-fits-all curriculum for success in college, we might look at the performance of countries that have various kind of occupational education in their secondary systems—something the US has been moving away from. Twenty-four percent of Japan’s secondary students are in vocational programs, as are 29 percent in Korea, and a whopping 72 percent in the United Kingdom. All of these countries had higher average scores than the US had.⁶ A recent article in *Education Week* described how Singapore is upgrading its vocational education program.

We also have to look at culture with regard to hard work and persistence. In *Outliers*, Malcolm Gladwell writes about the inter-relationships among opportunity, hard work, culture, and success. One example where he goes into in great detail is the development of a culture of hard work in Asian rice-growing countries, where it took the whole family working all the time in a “rice paddy culture.” It took a developed ability to keep the clay bottom perfectly level, the water level right and constant, and it took choosing among 500 different seeds to get the one right for the climate and conditions for their particular paddy. In the West, the crop was planted and people waited until late summer or fall to harvest it. Gladwell referenced the work of Erling Boe, et al, at the

⁴ “List of Countries by Income Inequality,” Wikipedia, accessed 9/24/2009. In Gini scores, 0 is perfect equality and 100 is perfect inequality.

⁵ “Highlights From TIMMS 2007” table 9

⁶ OECD Education At A Glance Indicators, Table C1.1, 2005

University of Pennsylvania, in a paper titled *Student Task Persistence in the Third International Mathematics and Science Study: A Major Source of Achievement Differences at the National, Classroom, and Student Level* (December 2002 revision). Boe created a measure of task persistence from the background questions asked of each 120 students. The measure of persistence was how many of the questions the student answered completely. Using multilevel analysis, he concluded that this persistence variable explained about 53 percent of the variation in scores among nations, 22 percent of scores between classrooms within nations, and 7 percent of variability within classrooms. (p iv)

This study revealed a large cause of difference in student achievement—another reason it cannot be just assumed that some particular curriculum variations are responsible for the higher achievement scores in other nations. (It would be interesting to look at NAEP to see the percent of background questions US students complete.)

Beyond these factors, the length of instructional time during the year, and the ranking of relative remuneration of teachers in different countries, needs to be considered. Recently, Linda Darling Hammond pointed out that “other nations underwrite a strong supply of well-prepared teachers and leaders, which allows all of the other reforms they try to put into place to succeed.”⁷ We need to look at the variety of factors in countries that have higher average scores rather than fixing on just one.

What Part of the Whole? The common standards effort has taken major steps to get agreement among the states and collaborative leadership in the production of what I will call “end-of-school” standards. There must be a beginning, of course, and math and reading were chosen as the starting point. It would be much easier to make judgments about this start if we knew the plan for the whole. After nearing a decade of a test-based accountability system, there is much concern that this new effort has been focused on the same two curriculum areas. With full recognition of the importance of these two subjects, the worry is the effect this has on the whole of the curriculum—what has been slighted, and where has time been carved out of the rest of the curriculum—from art to social studies to physical education to recess.

⁷ *Education Week*, October 1, 2009, p. 4

Many would wonder what assumptions were made about relating these standards to the current variation in student bodies—and starting with a set of high school exit standards puts the focus on the high school curriculum, where there is great variation in student goals and aspirations. In K through 8, where there is much experience with content standards and test-based accountability, there is much less student variation within a grade in a particular school. Although reading classes may still have redbirds and bluebirds, there is a movement toward differentiated instruction and dealing in the classroom with students of mixed abilities and prior preparation.

The student variations in secondary schools have much to do with students beginning to become differentiated in interests, ambitions, motivations, and concepts of what they “want to be.” This has been accommodated, to varying degrees, by the creation of the comprehensive high school. Math courses in high school include “regular” math, honors math, AP math, IB math, and college math in dual enrollment programs. In CTE programs, applied math may be integrated in occupational education courses. Do the draft common standards contemplate knowledge gained in a single math course in each of the four years of high school as producing a mastery of the specifications laid out in the common standards? That would seem to be the case.

Diversity in the different high schools—comprehensive high schools, magnet schools, career academies, regional occupational schools, a variety of types of charter schools, and likely more—also is a large factor. The US has been moving toward greater diversity in high schools—and that is what we now have in the many shapes of postsecondary education. Does the common standards collaboration envision a single template? It seems so.

Another worry is the narrow view of the objectives set forth for preparation for life after high school, framed largely in terms of financial success in the returns of going to college and from going to work. Yes, a college education is broader than just preparation for work, even if liberal arts colleges have cut back to make time for such things as computer science, business administration, and other avenues for competing for jobs after college. However that may be, we must look at what a K-12 education entirely paid for by the public should do in equipping high school graduates—all of them—for the future, irrespective of what they do in further education. Also, a high priority must be

given to finally reducing the dropout rate, and particularly for minorities. And we need to equip, as best we can, those who leave high school early.

We must not forget the broader purposes of a public education paid for by the public. This is a democracy with increasingly complex issues to decide. The civility of political discourse is declining. Ordinary life is increasing complex in health care coverage that is hard to negotiate and understand, complex mortgages that allow people to take on risks not comprehended, complex issues of global warming that defy understanding, a mode of living that is producing obesity and high health costs. People who give this thought will have different lists of the purposes of public education. I will settle for what Diane Ravitch said in her book, *Left Back: A Century of Failed School Reforms*, published in 2000.

The disciplines taught in school are uniquely valuable, both for individuals and society. A society that does not teach science to the general public fosters the proliferation of irrational claims and antiscientific belief systems. A society that turns its back on the teaching of history encourages mass amnesia, leaving the public ignorant of the important events and ideas of the human past and encoding the civic intelligence needed for the future. A democratic society that fails to teach the younger generation its principles of self-government puts these principles at risk. A society that does not teach youngsters to appreciate great works of literature and art permits a coarsening and degradation of its popular culture. A society that is racially and ethnically diverse requires, more than other societies, a conscious effort to build shared values and ideals among its citizenry. A society that tolerates anti-intellectualism in its schools can expect to have a dumbed-down culture that honors celebrity and sensation rather than knowledge and wisdom.

Then there is the example of the late Stephen K. Bailey. “I get an education so that later in life when I knock on me,” he said, rapping his knuckles on his forehead, “somebody answers.”

In short, there is need to know where this is going and if we are to accept in this first step what appears to be a constrained view of the purposes of public education.

Summary. Although the draft standards represent a very large step toward developing an understanding and agreement about what should be taught in public education,

- The case is not made that succeeding in college and succeeding in work, whether one goes to college or not, requires the same high school curriculum—that one size fits all.
- The case is not made that one size fits all even for going to college.
- There is a knowledge base on what work requires that can be exploited to inform curriculum decisions and to advise students about opportunities and what it requires to prepare for them.
- Benchmarking efforts that examine the international experience need to broaden their look to include not just the differences in curriculum and an assumption that those differences account for the better performance of some countries.
- The standards need to be considered in the light of how they relate to and impact the great diversity existing in the different levels of math and English courses in high school, and the diversity in existing types of secondary schools, not to mention the variations in the interests and aspirations of individual students.
- The standards need to be placed within a vision of the whole of a complete curriculum that fulfills the purposes of the free public education provided through 12 years—a purpose much broader than college and career readiness.
- Standards need to take their place along side a concern about reducing school dropout rates as well as a concern about taking those who graduate to higher levels of achievement.

Postscript. The above addresses the draft common standards from the standpoint of what might constitute “validation.” I extend the remarks to address the approach of setting an end-point to high school education in terms of a very high set of academic

knowledge and abilities that all students should acquire over the 12 years. Much consideration was given, I am sure, to how the process would start and how it would roll out to completion. That decision seems to be an extension of the current conventional wisdom seen in a number of arenas that there is a one-size-fits-all approach to public education, particularly at the high school level, and that all students need to acquire the same kind and level of knowledge for life after high school. I have argued that this approach is deaf to the differentiation of student interests, motivations, learning styles, and the greatly differentiated labor market they will enter, as well as the differentiated structure of postsecondary education, and the need to make a start on cutting the dropout rate.

We have much experience with writing content standards for each of the first eight grades of school. Although there is an undeniable range of differences in educational perspectives about what should be taught in the first grade, the range of differences is hugely greater for what should be taught in high school. Even though the heights of the platform of achievement and cognitive development from which children are launched into the first grade are very different, the growing agendas in early childhood education and efforts begun in the 1960s with Head Start have led in the direction of more equal heights of these platforms. This effort to get more equality at the starting gate could permit more uniformity in expected outcomes in the first grade, and then the second, and on up.

Although getting more equality in the pre-school period is only starting, getting a common curriculum for reading and math in the first grade seems to me to be much more feasible than starting with what all students should know, at a high level of academic

accomplishment, when they exit high school and working backwards down to the grades. That is an effort to bring uniformity to a wildly differentiated secondary school system, and much of it for good reason.

It is possible to have common standards for high school without having a standardization of curriculum driven by a standardized set of high school exit requirements. To me, that is a more feasible goal and more desirable. We have been going in this direction in the state collaboration on Algebra 2, brought about by Achieve, Fordham, and Education Trust. That does not mean standardization in terms of all high school students taking Algebra 2. Achieve has this under way in a considerable portion of the states collaborating on common standards. I can see diversity in the choices available as students advance through high school, but with an effort to agree on a rigorous approach to the course content. If a CTE course employs applied approaches to math taught in connection with an occupational skill, and if effectiveness is claimed, standards can apply to checking whether those expectations are being met.

In my view, some rethinking is needed for how to start this venture and defining what the expectations are, particularly for high school. The common standards draft, I think, has conflated two separate matters. One is common standards in what is taught in a subject matter course. The other is a single set of courses that define a high school curriculum. We can have choice in the courses that constitute a path to high school completion *and* common standards for those courses.