

## **TWELFTH GRADERS and *All* Their Futures**

**Paul E. Barton**

It is a pleasure to be involved, even if from afar, in the celebration of the twentieth anniversary of the creation of the “new” NAEP and the National Assessment Governing Board. NAEP has made Adequate Yearly Progress in becoming the indispensable source of knowledge on the state of education, and its progress, in the US. The evidence includes extending the Twelfth Grade Assessment to the states.

In 2003, in testimony before the NAGB-created Commission on Twelfth Grade NAEP, I commented on the design and reporting of such a twelfth grade assessment. Inevitably, there will be some repetition here, but the focus will be on current plans and prospects for reporting the assessment already designed and becoming operational.

My 2003 paper, “Grading the Twelfth Graders: More Useful and Used NAEP Reporting,” started with a question: “What is different about twelfth graders?” People tend to think that students in the first eight grades have been exposed to about the same basic curriculum in any one school district, and more or less throughout the nation, and that students arrive at the high school doors with the same basic educations—or at least, that they have been exposed to the same subject matter content.

High school begins the transition period in which students prepare for a post-public education life. This is when considerable differentiation begins; when students begin to develop interests, aspirations, and motivations; and when students’ early views of the outside world begin to shape their interest in particular paths toward college, training, the military, and occupations. How far students go academically in high school is inevitably affected by how much of a base they had to build on when they entered. The history of secondary education has been one of recognizing and accommodating an emerging diversity of interests and goals—or of denying that diversity, which I think is the tendency in the current wave of advocacy of high school reform in which one highly rigorous curriculum prepares *all* high school students to qualify for credit courses in college.

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I have disagreed with this one-size-fits-all approach, and that has shaped my opinions on molding the Twelfth Grade NAEP Assessment into a measure of readiness for students to enter college and do credit work without first needing remedial courses. In the following remarks, I tend to talk about both—the one-size-fits-all approach and the shaping of NAEP as a measure of readiness for college course work—since they seem to be related.

Of course, students entering high school are not homogeneous, since they really have not all been exposed to the same content in the first eight grades, and they also vary hugely in academic achievement. An example of the variance in exposure to content is eighth grade math, in which students are being differentially prepared for increasingly rigorous math courses in the ninth grade. As for the varying levels of academic achievement, NAEP presents a telling measure. In NAEP eighth grade math and reading, the spread between the tenth and ninetieth percentiles *is as great as the difference between the average scores of fourth graders and twelfth graders*—a spread of about eight grade levels *within* the eighth grade. This renders the meaning of the term “being on grade level” hard to comprehend—although a recent Google search yielded about 20,000 entries for these four words. This is important when thinking about casting students in the same mold in a four-year period, and when thinking about the differing education and career objectives they develop within that period.

Two sets of facts are now up for consideration: 1) the emerging differences in life objectives of students in the transition period of high school, and 2) the measured differences in achievement levels of students entering high school. This is the reason for my subtitle, “*All Their Futures.*” And this is the reason I argue against the “one-size-fits-all” approach for high school students—an approach that over the last few years has been carried like a banner on the high school reform bandwagon.

If NAEP twelfth grade assessment is to be molded into a measure of readiness of what lies ahead for twelfth grade students, all of the above is relevant to how the assessment is conceived and reported.

Over my three decades of involvement with NAEP in one way or another, I have always accepted the formula put forth by the person who did the most to shape it: Ralph Tyler. The purpose of NAEP, as he put it, is to find out how much students learn from what teachers are teaching. If the goal is for students to learn *more* than the content of the curriculum now delivered, *the curriculum should be changed*—and measures then taken of how much students know as a result of these changes. This is, I think, a good principal to follow. In all standardized testing, I have held to a belief that students should not be given a test to show what they don’t know—because they have not been given the more rigorous courses that the test-givers desire—and the test results then used as leverage to change the curriculum.

I start here because the principal purpose of twelfth grade NAEP seems to flow from the combined propositions that all students should be given a beefed-up college prep curriculum that surpasses the current one, and that all students need this curriculum,

irrespective of their goal—postsecondary education in whatever type of institution, fulltime employment, or a pre-employment training program.<sup>1</sup> The purpose for 12th Grade NAEP, as set by NAGB, was to see if students are ready for college, careers, or the military—which pretty much encompasses economic life, if “jobs” are included in the category of “careers.” The majority of people who work think of having jobs.

Most work to date has been done by The Technical Panel on “Twelfth Grade Preparedness Research.” Specifically, I refer to the pre-publication edition of the final report, which states its purpose: to enable NAEP “to report on the preparedness of twelfth graders for postsecondary education and job training after they graduate from high school.” I want to go into the ramifications of the report in some detail, but first, I again refer to my subtitle: “*All Their Futures*.” Given what it says it set out to do—to establish *predictive validity* of NAEP with respect to student readiness to pass college placement tests so as to enter credit work without taking remedial courses—I do not question its work. It is authoritative, as one would expect, given the impeccable credentials of its chair and members.

High school is the last stage of public-provided free education. As such, it should work to prepare students for the future, whatever is available and whatever they choose from what is available. Yes, high school should prepare students for going to college, and it should do its best to assure that they take advantage of the available opportunities, if they so choose—even if it means taking remedial courses in college. It also should prepare them for going directly to work or to enter the military. Or to be intelligent consumers—to understand the fine print of an insurance policy or a mortgage (Can anyone today question that?), or to be able to calculate how much change they should get back at a restaurant if they give a waiter a \$20 dollar bill (a large percentage cannot, as shown by the National Adult Literacy Survey). And high school should prepare them to be citizens in a democracy, to be contributing members of a community, and to be parents who can give babies and children the start they need for cognitive development.

Yes, getting a college degree provides the best chance to land a good-paying and stable job. However, according to the Bureau of Labor Statistics (BLS), only approximately three out of ten jobs require some type of postsecondary credential, and the percentage rises by one or two points every decade. The BLS has over six decades of experience examining each occupation in the nation and reporting which ones require some type of postsecondary credential. According to them, the other seven out of ten jobs require either short-, medium-, or long-term on-the-job training after hiring. I went into this in detail in my 2007 report, *High School Reform and Work: Facing Labor Market Realities*<sup>2</sup>.

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<sup>1</sup> In terms of quantity, I think the percentage of employers who offer much pre-employment formal training is low. Almost all training is done on the job, so the concern is the qualifications for being hired for a particular job.

<sup>2</sup> The statement is frequently made that educational requirements of jobs in this economy are rapidly increasing. The basis cited is the rising level of education among those employed in those jobs, not the *requirements* BLS establishes for becoming qualified for those jobs. Each decade, college educated people take jobs filled by high school graduates in the prior decade, and for which college preparation is not

Are employers satisfied with the preparation of the job candidates coming to them as entry-level workers? No, they are *not*: Employers are in wide agreement that many high school graduates are not ready for the workplace. Employer associations and research organizations have conducted many surveys over the years to learn what employers find when they hire new entrants or hourly-wage workers. A typical poll was that of the National Association of Manufacturers, which surveyed the “most common reasons companies reject applicants as hourly production workers.” At the top of the list were basic employability skills such as timeliness, attendance, and work ethics (things that can be instilled in schools as well as in other contexts), followed by insufficient work experience, followed by inadequate reading/writing skills—which applied to about a third of those rejected. The list includes inadequate math skills, at about one in five—and employers were not talking about Algebra II. Also on the list is inadequate oral communication skills. The whole list is worth looking at.

High school is as far as a great many youth will go, and they need to be equipped to “make it” in the economy.<sup>3</sup> At the same time, they need to have as good a base as schools can provide to pursue the option of getting postsecondary education and training.

The increased focus on avoidance of remedial courses in college results in an increased emphasis on math and science—and at higher levels than in current college preparatory tracks. Citizenship requires more than that. Serious deficiencies have been identified in knowledge of US and world history, and government. The accountability provisions of NCLB have pushed curriculum away from subjects not tested.

The February 4, 2009, issue of *Education Week* included “A Stirring Speech, Lost on Many Students,” by Robert Pondiscio of the Common Core Knowledge Foundation. Referencing President Obama’s Inaugural Address, Pondiscio lamented, “If you do not know what happened at Concord, Gettysburg, Normandy, and the Kne Sanh, the sacrifices of those who ‘fought and died’ for us in those places is lost on you.” What evidence do we have that students are leaving the twelfth grade with a readiness to be a citizen? Perhaps since NAEP reaches beyond reading, science, and math only occasionally, it could have a few questions each time in either history, government, or geography, with a small set in each assessment.

If the effort is to convey in understandable terms what NAEP assessments of twelfth graders reveal about their readiness for life after high school, the assessment needs to include all these spheres. My suggestion is to find ways to “benchmark” the NAEP scale to convey where students are in preparing for the world beyond high school.

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required. The increase in actual job requirements has been steady over the decades, but small. There has been no escalation. A review of such developments since World War II can be found in a report by this author titled *What Jobs Require: Literacy, Education, and Training, 1940-2000*, Educational Testing Service, 2000.

<sup>3</sup> According to a national study by the National Center for Education Statistics, those who obtain “some college,” but not a degree, do no better than those with a high school diploma, after considering all the qualities employers look for.

The Technical Panel laid out a plan for a “multi-method approach,” and made a very important recommendation: a “Survey of Postsecondary Education and Job Training Institutions.” The survey would identify the assessment instrument that a college uses to select students for remedial courses and the level of the “cut-score” for sorting entering students in this way. Although much attention is given to the phenomenon of many students needing remedial education in college, concern about how that reflects badly on the high schools students came from, and unease that higher education resources are being wasted to bring students up to par, little is known about the process used to assign college students to remedial courses. I heard little about these placement tests until Michael Kirst brought it to national attention in his Bridge Project. Getting a knowledge base of this process would be a very good place to start, and information is needed about this process and its dynamics before remolding NAEP in such an important way.

The other recommendation is about establishing the “predictive validity” of NAEP findings to establish readiness for entering credit courses in college. These involve “equating” the NAEP assessment with SAT and ACT college admissions tests, college placement tests, and employer tests used to establish qualifications for entering a training program. The Panel recognizes that in such work, the rigorous standards for what constitutes “equating” may not be met, and they may need to settle for the next step down: finding “concordance” between these tests and NAEP.

Carrying out the Panel’s approach would lead, I am sure, to the best job possible in establishing comparability among these assessments, although how comparable they are will not be known until the work is done. The first problem is the degree of imprecision present in the reality that “equating” is likely not possible and it will be necessary to use the second best alternative. The second problem is that if comparability *is* established with the admissions tests colleges use, along with high school grades and other student accomplishments and characteristics, to grant student admission—and this is how testing companies recommend the tests be used—they predict only 15-20 percent of variation in Freshman college grades (this increases a lot as grades are added). By themselves, admission tests do not establish readiness for taking credit work; in fact, colleges use them as part of the admission decision, and then require many admitted students to take remedial courses.

After finding that there is concordance with a placement test, actual student readiness to perform in college credit courses is still unknown. The placement test itself, in effect, is a *predictor* of readiness to do credit work. To my knowledge, nothing is known about how well these tests do in predicting how many of those ushered into remedial classes could have succeeded in credit courses, nor is it known how many of those who went directly to credit courses were capable of succeeding in them. I don’t know how much the colleges know about this, or whether their tests are subjected to the kinds of studies that establish predictive validity. Some well-established placement tests, such as Acuplacer, are much used, and some tests have been developed in different states. Some tests also are designed in the office of the Chair of a department. What

would happen is the equating of NAEP with placement tests of unknown qualities in terms of identifying readiness to perform credit work.

Another question involves where colleges set the cut-point on their placement tests, how often they change it, and why. What are the dynamics at work here? Is the setting of the cut-point related in any way to how many students are admitted, and does it relate to the size of the faculty to be supported by the colleges in the two areas of remedial courses and regular courses? Are overall college finances involved in such decisions, and the fluctuating supply of students available?

I see an important additional limitation. In my 2003 paper done for the Twelfth Grade NAEP Commission, I focused on credit course readiness in terms of the different tiers of postsecondary institutions. I am quite sure that being ready to take an entry level mathematics course in a typical local community college is not the same degree of readiness required at Stanford or MIT. Schools of higher education vary by type—community colleges, open universities, selective liberal arts colleges, research universities, and postsecondary proprietary vocational and technical schools. I cannot imagine that a single point on a NAEP scale could be a reliable indicator of readiness to do credit work at all institutions. My own suggestion for benchmarking was a modest effort to find out, for one or two colleges in each category, what the NAEP scores were of those who passed the placement tests by having the students take both NAEP and the placement test.

I wish to suggest consideration of another approach to identify readiness for college, at least in mathematics. I quote from the Executive Summary of *Interpreting 12<sup>th</sup> Grader's NAEP-Scaled Mathematics Performance Using High School Predictors and Postsecondary Outcomes From the National Education Longitudinal Study of 1988 (NELS:88)*, National Center for Education Statistics, 2007:

The National Assessment of Educational Progress (NAEP)—the Nation's Report—is the best known measure of student achievement in the country. Yet interpreting in practical terms what attaining a particular score or achievement level on NAEP means can be difficult, if not controversial.

The document goes on to quote Fredric Mosher, who wrote in 2004: “In some ways, the history of NAEP could be written as a struggle to find a way to report the assessment's results so that people could understand them and form some judgment of their significance.” This NCES report interprets twelfth grade NAEP-scaled mathematics performance using data from NELS, making it possible to relate NAEP mathematics scores to postsecondary and labor market outcomes in the follow-up reports from 1992 to 2000, when the students were about 26 years old.

As a result, below is a sample of what is known from marrying NAEP scores of 1992 high school seniors after being equated with the NELS assessment to the NAEP

assessment (what they found was “concordance”). In the following table, percentages are for the seniors who attended postsecondary education institutions.

**Percentage Taking Remedial Math Course**

12 <sup>th</sup> Grade NAEP-Scaled Proficiency Score	Num Remedial Math Courses			
	0	1	2	3 or more
All Students	73	16	7	5
Below basic	45	25	16	14
Basic	79	15	4	2
Proficient	98	2	#	#
Advanced	99	1	#	#

Source: Page 40 # = Not available

The highest degree obtained at these different NAEP achievement levels is also known. For example, of seniors who attended college and scored below basic on NAEP, 62 percent got no degree, 10 percent got a certificate, 11 percent got an associate degree, and 18 percent got a bachelor degree or higher. So 38 percent got a postsecondary degree of some kind.

As for success in the labor market, NELS collected extensive data in its follow-up studies. It knows the occupations at some level of classification, the extent of unemployment, and the wages. There also is some information about training in employer establishments before or after hiring.

As regards the relationship between NAEP, SAT, and ACT scores in mathematics, such information is available. For example, of those who scored at the advanced level on NAEP, 59 percent had SAT scores between 710 and 800, and 46 percent scored between 31 and 36 on the ACT. Much more is in the report, and much more can be known with additional analysis. If such relationships were not stable, there would be no point in linking NAEP to college placement tests.

These relationships between NAEP scores and outcomes in taking remedial courses could be expected to be reasonably stable. However, the same thing is possible by marrying the NAEP scale with the scale or scales of ELS, the successor to NELS that began with sophomores in 2002. The ELS test-takers would have been in the follow-up two years out of high school in 2006, and those data are available. According to the present plan and financing, the next follow-up is not scheduled until 2014 or 2016, when college transcripts will be collected. That could be speeded up, I assume, with additional financing. Of course, it takes time to get the data before the public. The survey two years out in 2006 would cover the period when remedial courses are taken. Data on course-taking is self-reported by the students, since transcripts for that period would not be available until after four years of school. However, it is my understanding that the self-reported data is relatively reliable. A considerable amount of data about college and work experience would be available from student questionnaires after two years of enrollment. A transcript study could be done after two years in college, but it would take several million dollars to do it.

It is my view that the future for giving meaning to NAEP-measured school achievement, in terms of future outcomes, lies in linking it to longitudinal studies done over the last several decades—NELS 88 and ELS beginning in 2002. And a successor to ELS is already in the planning stage. NAEP is critical to learning, on a broad basis, what students have achieved at a point in time. Once there is an established equivalency between the tests used in the longitudinal programs and NAEP, there will be a basis for observing years out what happens to students. That information can give meaning to high school achievement in terms of how it shapes post-high school opportunity in postsecondary education, entering the military, and entering the labor market. It also may tell us other things about how their lives are unfolding.

Tracking the futures of *all* of our high school students is important in recognition that diversity exists in prior preparation, life interests, employment goals, and education goals of the high school student body—*as it exists in the society and economy that students will enter*. The US has, after all, the largest degree of inequality in income and educational achievement of any developed country—and perhaps also the largest degree of opportunity to move up the ladder in the education system and the economy. The quality of the schools is a very large factor in the opportunity for young people to make the most of their chances for upward mobility in a churning economy and society.

NAEP plays a very important role in informing the nation about the educational progress of all of its students, and an opportunity exists with twelfth grade NAEP to show the nation how high school achievement plays out in helping students negotiate a future in such a diverse society and economy.