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**What Students Need to Learn** Pages 28-33

## A Diploma Worth Having

Grant Wiggins

**There's only one valid measure of the high school curriculum: How well does it prepare students for their adult lives?**

I have a proposal to make: It's time we abolished the high school diploma as we know it. In a modern, unpredictable, and pluralistic world, it makes no sense to demand that every 18-year-old pass the same collection of traditional courses to graduate.

Instead, we should do away with most course requirements, make *all* courses rigorous, and simply report what students have accomplished from year to year. Students should prepare for adult life by studying subjects that suit their talents, passions, and aspirations as well as needs. They should leave when they are judged to be ready for whatever next challenge they take on—whether it be college, trade school, the military, or playing in a band. Let's therefore abolish the diploma, if by *diploma* we mean that all students must graduate as though they were heading for the same 20th-century future.

This plan would enable us to finally deal with the key weakness of high school, summarized in that term virtually all students and adults use to describe it: *bor-ing*. High school is boring in part because diploma requirements crowd out personalized and engaged learning. It is also boring because our graduation requirements have been produced the way our worst laws are; they are crude compromises, based on inadequate debate. Because of arbitrary policies that define preparation in terms of content instead of useful abilities, schools focus on "coverage," not meaningful learning.

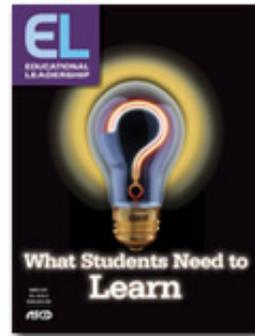
## A Historical Perspective

Our belief in lockstep adherence to rigid curriculum requirements appears especially myopic and misguided if we look through the lens of the fundamental question, How well does the high school curriculum prepare all students for their adult lives? The Commission on the Reorganization of Secondary Education thought that asking this question was not only sensible but sorely needed—in 1918! Its report, *Cardinal Principles of Secondary Education*, yielded a sound set of criteria by which to rationally judge the high school curriculum. The commission underscored that these criteria must flow from the mission of schooling:

Education in a democracy, both within and without the school, should develop in each individual the knowledge, interests, ideals, habits, and powers whereby he will find his place and use that place to shape both himself and society toward ever nobler ends. (p. 9)

The Cardinal Principles were a deliberate counterbalance to the policies that had arisen from the work of the Committee of Ten in 1892. That group had famously argued that a college-prep education, including multiple years of Latin and Greek, was appropriate for all students—even though fewer than 10 percent of high school students went to college. Chaired by the president of Harvard, the Committee of Ten was organized into subject-area groups and staffed by professors and teachers of those subjects. (Our current system, with its attention to a narrow collection of "traditional" academic subjects, still embodies the worst consequences of the work of this group.)

The Cardinal Principles, in contrast, were intentionally external to the traditional subjects and were based on an understanding of the broad mission of schooling as enabling individuals to better themselves and society. They proposed the following "main objectives of education": (1) health; (2) command of



fundamental processes (reading, writing, arithmetical computations, and the elements of oral and written expression); (3) worthy home membership; (4) vocation; (5) citizenship; (6) worthy use of leisure; and (7) ethical character.

It's a bit startling to see health first in the list, ahead of "readin', writin', and 'rithmetic," isn't it? But that shock is also a helpful reminder of how much schools have lost their way. What could be more important in moving into adulthood than learning how to lead a healthy life, in the broadest sense?

This idea actually has much older roots. Herbert Spencer arguably wrote the first modern critique of out-of-touch college-prep education in his famous essay, "What Knowledge Is of Most Worth?" Spencer (1861) asserts that school exists to help us answer the essential question of how to live. Under this vision of education, health as an area of study rises to the top. Spencer writes that

as vigorous health and its accompanying high spirits are larger elements of happiness than any other things whatever, then teaching how to maintain them is a teaching that yields in moment to no other whatever. (p. 13)

Spencer anticipates the protests with rapier wit:

Strange that the assertion should need making! Stranger still that it should need defending! Yet are there not a few by whom such a proposition will be received with something approaching to derision. Men who would blush if caught saying Iphigénia instead of Iphigenía ... show not the slightest shame in confessing that they do not know where the Eustachian tubes are, what are the actions of the spinal cord, what is the normal rate of pulsation, or how the lungs are inflated. ... So overwhelming is the influence of established routine! So terribly in our education does the ornamental over-ride the useful! (p. 14)

But Spencer saves his greatest scorn for the failure to make child-rearing a core subject:

If by some strange chance not a vestige of us descended to the remote future save a pile of our school-books or some college examination papers, we may imagine how puzzled an antiquary of the period would be on finding in them no sign that the learners were ever likely to be parents. "This must have been the curriculum for their celibates," we may fancy him concluding. (p. 20)

Spencer wisely notes that every subject will, of course, make a plea for its importance. Therefore, a curriculum can only be fairly justified using criteria about the purpose of schooling that are *outside* all "content."

In other words, we need to decide to include or exclude, emphasize or deemphasize any subject based on criteria related to school mission—a mission centered on improving the behavior and lives of students. Otherwise, our curricular decisions are arbitrary and school is aimless. Indeed, when we fail to seriously question the inclusion of algebra or the exclusion of ethics from graduation requirements, we can only fall back on custom: "We've always done it this way." But if that were the only real argument, we would still be requiring Greek of all graduates, as the Committee of Ten recommended.

## The Unwitting Harm of the Standards Movement

Our current situation is no better than when the Committee of Ten did its work. Think about it: We are on the verge of requiring every student in the United States to learn two years of algebra that they will likely never use, but no one is required to learn wellness or parenting.

The current standards movement, for all its good intentions, is perilously narrowing our definition of education, to the great harm of not only students but also entire fields of study: the arts, the technical arts and trades, and the social sciences. Gone are excellent vocational programs—as powerfully described by Matthew Crawford in *Shop Class as Soul Craft* (Penguin, 2010), arguably the best book on education in

the last five years. (See the review on page 92 of this issue of *Educational Leadership*.) Threatened are visual arts, theater, music, and dance programs despite their obvious value. Indeed, there are more musicians in this country than mathematicians, but you would never know it from the work of standards committees.

### Not Which Standards, but Whose Standards

At a meeting many years ago, I heard Ted Sizer respond to a proponent of national standards, "It's not *which* standards, it's *whose* standards!" In other words, don't make this sound so objective. It's a political determination, made by whoever has a seat at the table.

And who sits at the table? Representatives of all the traditional academic subjects. When have standards committees included working artists, journalists, web designers, or doctors who could critique the usefulness or uselessness of traditional content standards? When have professors of bioethics, anthropology, or law been invited to critique content standards? Rather, the people who care most about their little corner of the traditional content world dictate that it is required.

True story: When I did a workshop as part of a standards-writing project in a large eastern state, I mentioned the problem of arcane elements in the history standards, in particular a mention of an obscure Chinese dynasty. A gentleman cried out, "But that was my dissertation topic, and it is important for students to know!" Worse: The speaker was the social studies coordinator for the state and had made sure to put this topic in the previous version of the standards.

Having worked with three different states on their standards writing and revision process, I can say with confidence that the way we organize standards-based work at the state and national levels dooms it from the start. The committees reflect typical people with typical backgrounds in education, charged to tinker with, but not radically overhaul, typical schooling; no criteria for choices are ever put forward to weed the document of pet topics. In short, these committees merely rearrange the furniture of the traditional core content areas; they replicate the past that they feel comfortable with rather than face the future that is on its annoying but inexorable way.

### A Case in Point: Mathematics

For proof of the lack of forward thinking, look at the Common Core math standards. The recommended high school mathematics is unchanged from when I was a kid in prep school 45 years ago: four years of conventional topics in algebra, geometry, trigonometry, and calculus. The only improvement is greater emphasis on modeling and statistics. But the laying out of the standards in isolated lists of content (as opposed to summarizing the kinds of performance standards student work must meet) undercuts the likelihood of vital reform to make mathematics more engaging and useful to the majority of students.

Consider this dreary summary of a high school strand from the Common Core:

#### Trigonometric Functions

- Extend the domain of trigonometric functions using the unit circle.
- Model periodic phenomena with trigonometric functions.
- Prove and apply trigonometric identities.

This is a standard? With what justification? It almost goes without saying (but in the current myopia, it needs to be said): *Few people need to know this.*

Today, algebra is the new Greek that "all educated persons" supposedly need. This is clear from the work of the American Diploma Project (2004), launched a few years ago by Achieve, a group created by governors and corporate leaders. Achieve deserves credit for taking the idea of "backward design" of high school requirements from college and workplace readiness seriously, buttressed by research and analysis. But we should be cautious about accepting its narrow view of the high school curriculum,

especially its claim that advanced algebra should be a universal requirement (Achieve, 2008). The data Achieve cites to justify this claim include the following:

- Completing advanced math courses in high school has a greater influence on whether students will graduate from college than any other factor—including family background. Students who take math beyond Algebra II double their chances of earning a bachelor's degree.
- Through 2016, professional occupations are expected to add more new jobs—at least 5 million—than any other sector; within that category, computer and mathematical occupations will grow the fastest.
- Simply taking advanced math has a direct impact on future earnings, apart from any other factors. Students who take advanced math have higher incomes 10 years after graduating— regardless of family background, grades, and college degrees.

But hold on: All that this really says is that people who take advanced math courses are more likely to do well in college and be prepared for jobs that involve advanced math. But that doesn't mean that broad success in life depends on those courses. I have no doubt, for example, that most students who study Greek or astrophysics also end up in satisfying careers. Algebra is not the cause of adult success any more than Greek is. It is most likely the reverse: Those who take advanced courses are smart, motivated students who will succeed in any career they choose. As a recent study pointed out, only about 5 percent of the population actually need algebra in their work (Handel, 2007).

Much the same criticism was made by the Partnership for 21st Century Skills (2010), whose critique of the draft Common Core math standards asserted that the standards should include more emphasis on practical mathematical application (for example, analyzing financial data); include statistics and probability in the elementary grades and emphasize these areas more in the secondary grades; and focus less on factual content mastery in favor of better integrating higher-order thinking skills throughout the curriculum.

Lerman and Packer (2010) remind us that employers tend to call for something far more general and useful than advanced algebra skills:

Every study of employer needs made over the past 20 years ... has come up with the same answers. Successful workers communicate effectively, orally and in writing, and have social and behavioral skills that make them responsible and good at teamwork. They are creative and techno-savvy, have a good command of fractions and basic statistics, and can apply relatively simple math to real-world problems such as those concerning financial or health literacy. Employers never mention polynomial factoring. (p. 31)

For a more enlightened approach to mathematics instruction, there is a fine body of work developed over the past 15 years under the heading of Quantitative Literacy (or Quantitative Reasoning). The *Quantitative Literacy Manifesto* (National Council on Education and the Disciplines, 2001) shares the concern of organizations like Achieve that most U.S. students leave high school without the math skills they need to succeed in either college or employment. But this report proposes a different solution—one better suited to the goal of universal education in a modern society:

Common responses to this well-known problem are either to demand more years of high school mathematics or more rigorous standards for graduation. Yet even individuals who have studied trigonometry and calculus often remain largely ignorant of common abuses of data and all too often find themselves unable to comprehend (much less to articulate) the nuances of quantitative inferences. As it turns out, it is not calculus but numeracy that is the key to understanding our data-drenched society. (p. 2)

The *Quantitative Literacy Manifesto* calls for developing in students

a predisposition to look at the world through mathematical eyes, to see the benefits (and risks) of thinking quantitatively about commonplace issues, and to approach complex problems with confidence in the value of careful reasoning. (p. 22)

Alas, the Quantitative Literacy movement simply has less political clout than Achieve does. Again we see: It's not *which* standards, but *whose* standards.

## Revisiting High School Requirements

Mindful of the mission of schooling to prepare students to prosper in and contribute to a pluralistic and everchanging democracy, I humbly offer my own update of Spencer's proposal and the work of the Cardinal Principles group. I think that if we consider future usefulness in a changing world as the key criterion, the following subjects represent more plausible candidates for key high school courses in the 21st century than those on the Achieve list:

- Philosophy, including critical thinking and ethics.
- Psychology, with special emphasis on mental health, child development, and family relations.
- Economics and business, with an emphasis on market forces, entrepreneurship, saving, borrowing and investing, and business start-ups.
- Woodworking or its equivalent; you should have to make something to graduate.
- Mathematics, focusing primarily on probability and statistics and math modeling.
- Language arts, with a major focus on oral proficiency (as well as the reading and writing of nonfiction).
- Multimedia, including game and web design.
- Science: human biology, anatomy, physiology (health-related content), and earth science (ecology).
- Civics, with an emphasis on civic action and how a bill *really* becomes law; lobbying.
- Modern U.S. and world history, taught backward chronologically from the most pressing current issues.

Instead of designing backward from the traditions of college admission or the technical demands of currently "hot" jobs, this list designs backward from the vital human capacities needed for a successful adulthood regardless of school or job. How odd, for example, that our current requirements do not include oral proficiency when all graduates will need this ability in their personal, civic, social, and professional lives. How unfortunate for us personally, professionally, and socially that all high school and college students are not required to study ethics.

The financial meltdown of recent years underscores a related point: Understanding our economic system is far more important than learning textbook chemistry. In science, how sad that physics is viewed as more important than psychology and human development, as parents struggle to raise children wisely and families work hard to understand one another. (The principle of inertia from physics may explain it!)

Do not misunderstand my complaints as somehow too utilitarian or opposed to the liberal arts and higher math. I was educated in the classic tradition at St. John's College. I learned physics and calculus through Newton's *Principia* and geometry through Euclid and Lobachevski—in a college program with *no* electives—all based on the Great Books. I had arguably the best undergraduate education in the United States, if the aim is intellectual power. But would I mandate that all colleges look like St. John's? Absolutely not,

any more than I would mandate that all schools adopt my proposed course list as graduation requirements. On the contrary, my advocacy for injecting philosophy, economics, and human development into the terribly narrow conventional curriculum is a call to bring a richer array of options to students.

Everyone agrees that high school needs to be more rigorous. No one wants to perpetuate inequity of opportunity. But can't there be greater student choice that opens up rather than closes off opportunities? Can't vocational courses and courses in the arts be as demanding as upper-level courses in math or chemistry?

Setting standards in the way we do—mandating requirements for all by looking at our own generation's academic experience rather than forward to the developmental needs of all students— impedes progress rather than advancing it. Then, we add insult to injury: a one-size-fits-all diploma. In sum, it seems to me that we still do not have a clue about how to make education *modern*: forward-looking, client-centered, and flexible; adapted to an era where the future, not the past, determines the curriculum.

## What Do Our Students Need from School?

I am not arguing for throwing out the Common Core Standards. At least they will impose reason on the current absurd patchwork of state standards and finally make it possible for authors, software designers, test makers, and textbook publishers to provide the most resources at the least expense. But let's not treat these standards as anything more than a timid rearrangement of previous state standards, promulgated by people familiar only with traditional courses and requirements.

Instead, let us face the future by pausing to consider anew the wisdom of Herbert Spencer and the authors of the Cardinal Principles. Let us begin a serious national conversation (all of us, not just the policy wonks, selected employers, and college admissions officers) about the questions, What is the point of high school? What do our society and our students need from school, regardless of hidebound tradition or current policy fads?

Then we might finally have a diploma worth giving and receiving in the modern age.

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**Grant Wiggins** is the coauthor with Jay McTighe of *Understanding by Design* (ASCD, 2005) and *Schooling by Design: Mission, Action, and Achievement* (ASCD, 2007). He is president of Authentic Education in Hopewell, New Jersey; [grant@authenticeducation.org](mailto:grant@authenticeducation.org).

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