Moving Beyond Facts, Skills, and Right Answers

By Alfie Kohn

The trouble with the Tougher Standards movement isn’t limited to its failure to understand the costs of overemphasizing achievement. The movement is also vulnerable by virtue of the way it defines achievement. The vast majority of policy makers have accepted a dubious set of assumptions about what good teaching and learning are all about. Their pedagogy, in other words, is as faulty as their psychology.

In most states, to stand for educational excellence is to issue a list of sentences that begin “All students will be able to…” Even before we discuss the content of those expectations, two features of this whole enterprise are noteworthy. First, these standards are uniform. The premise is that all children can be expected to accomplish the same things at the same pace. Second, the standards are highly specific, often consisting of hundreds of detailed items.

Many of us, once we think about it, will be uncomfortable with the first premise – that is, the implicit assumption that all students need the same amount of time to reach a given goal. It’s one thing to say that everyone should be able to do such-and-such by the time he or she graduates from high school; it’s something else to dictate that every student must be able to do such-and-such by the end of second grade. The latter requirement is pretty clear evidence of a failure to understand that kids develop at different rates – and, moreover, that this is perfectly acceptable. The result of grade-b-grade standards, with their willful disregard of individual differences, is that some children will be branded as failures because they don’t learn as quickly as their peers.

As for the specificity of standards, it is widely assumed these days that rigor is equivalent to narrowness. We are living at a time when such objectives as wanting students to learn how to write persuasively or solve problems effectively are dismissed as “mushy.” Instead, the Tougher Standards contingent demands — and has often succeeded in backing with the force of law — long lists of particular facts and skills that students must acquire. In some places, these standards are listed explicitly; elsewhere, they can be inferred from the test questions that all students are supposed to be able to answer. Thus, all fourth graders may be required to be knowledgeable about “the increasing ethnic polarization of the Iberian peninsula circa 1350-1500,”[1] while high school biology students must know whether the tissue that conducts organic food throughout a vascular plant is composed of cambium, xylem, phloem, or epidermal cells.[2]

In the face of such a view of schooling, it is refreshing and a little startling to recall a recent comment by Harold Howe II, former U.S. commissioner of education. Asked what a set of national standards should be like if we had to adopt them, he summarized half a century of wisdom in one short sentence. “They should be as vague as possible,” Howe replied.[3] His point was that the more
precise the requirements are for what students have to know, the less responsive educators can be
to what distinguishes one circumstance from another, and your child from mine. In other words, the
specificity problem and the uniformity problem are related.

The real flaw of narrow standard-setting, however, runs even deeper than this. It concerns the basic
model of instruction that underlies most talk about achievement and accountability. That model
overlaps with what I have called the Old School of education, in which someone hands down lists of
definitions and dates, announces that this is what all kids ought to know, and specifies how much of
it they ought to know at each age. The premise here is that the more facts students have acquired,
the better educated they must be. The more single-mindedly this mission is pursued, the higher the
quality of the school.

Of course, this doctrine has been an integral part of traditional education long before it became
popular to include the word standards in every sentence on the subject. It is a doctrine that recalls
the motto of the fictional university featured in the movie Animal House: “Knowledge Is Good.” But
when we turn a parody into a philosophy, we beg several important questions: Knowledge about
how many different things? Knowledge acquired in what way, and for what purpose? Knowledge
acquisition at the expense of what other intellectual activities? The “bunch o’ facts” model of
education turns out to be connected to a series of other assumptions about teaching and learning.
Many of them are widely taken on faith. All of them are worth questioning....

“Emphasize the Basics”

Those who sermonize about the need to raise standards often proceed, in the very next breath, to
call for a return to the “basics.” Indeed, this term holds a certain appeal for most people. But the
question isn’t whether we’re for or against the basics; it’s how we define the term. If traditionalists
mean that a lot more time should be spent on reading, writing, and arithmetic than on other
subjects, plenty of people might object to neglecting art, science, social studies, and so on. If,
however, traditionalists mean that more attention should be paid to the foundations of each subject,
then the question becomes What constitutes the foundations? Are we to assume that “skills taught
directly by rote methods are basic while skills taught in other ways are not”?[4] Also, what is most
fundamental about learning to write: remembering how to spell words correctly, or developing a
feel for how certain words will affect a reader? What is at the heart of math: memorizing
procedures for computation, or getting a sense of how quantities are related to each other so that
one can estimate intelligently?

Traditionalists often use the basics to refer to little more than the mechanics of the “three R’s” (two
of which don’t even begin with r, incidentally), and they assume these are what kids primarily need
and lack. Indeed, everyone has an anecdote, intended either to horrify or entertain, about a store
clerk who couldn’t add, a teenager who thought Oregon was in Europe, or a writer who couldn’t
make his tenses agrees. But a group of scholars from the University of Illinois point out that when
you look at studies rather than just stories, “There is considerable converging evidence that by sixth
grade, children have some success at mastering basic skills of reading, writing, and arithmetic.”[5]

However, the same authors continue, “there are also disturbing signs that many students lack a firm
conceptual grasp of the goal of the activities in which they engage.”[6] And a good case can be
made that this deeper understanding is ultimately more important. A growing number of
educational theorists over the last couple of decades have made the point that facts come and go,
while what endures, what we really require, is the ability to look up facts, to interpret them, to
connect one with another, and to analyze their importance. Like the old adage “Give someone a fish,
he eats for a day; teach him how to fish, he eats for a lifetime,” it is the capacity to acquire and use
information that lasts longer and matters more than the information itself.
To this extent, parents ought to be concerned if a substantial part of their children’s education consists of learning the state capitals, the multiplication table, the names of the explorers of the New World, or the parts of speech. It’s not that those pieces of information are harmful in themselves; it’s that the time spent learning them is time not spent doing other things – like thinking.[7]

To this argument, the Old School rejoins that “learning how to learn” is an abstraction; you need to have stuff to work on, facts to analyze, a storehouse of knowledge on which to reflect. But no one argues that kids should be taught to think about nothing, that facts ought to be omitted from classes so that only higher level intellectual processes can be used. Frankly, it’s not clear how we would go about teaching that way even if it seemed like a good idea. Whenever we think, it’s about something. Indeed, as we’ll see later, the rebellion against the Old School is founded on the need for more context, more connection to real questions. The argument here is about how much time should be spent just on memorizing facts and practicing skills – and about whether these activities are to be treated as ends in themselves as opposed to means for understanding the world.

I have no objection to teaching kids what the Magna Carta was, or even to having them know approximately when it was written. But if they don’t have a feeling for why it was written, how it was received, why it matters when it was written, if they don’t have an opinion about its contents, if it’s taught in such a way that they have no reason to care about any of this, then what’s the point? To prepare them for an appearance on “Jeopardy”? As the philosopher Alfred North Whitehead observed long ago, “A merely well-informed man is the most useless bore on God’s earth.” “Scraps of information,” he added, are only worth something if they are put to use or at least “thrown into fresh combinations.”[8]

“Thinking Comes Later”

If Old Schoolers are forced to acknowledge that understanding is ultimately more important than rote recall, they promptly fall back on a claim that appears to be a “no-brainer” (which, in fact, it turns out to be, but not in the sense they mean). One reason their specific method of teaching continues to be so prevalent in our schools is that it’s based on a proposition that seems hard to dispute: The basics must come first. You want kids to read for understanding? First they have to learn how to read. You want them to pursue interesting mathematical problems? First they’ve got to know how to add, subtract, multiply, and divide. One fifth grade math teacher speaks for millions of other Americans: “It’s important at the elementary level to stress the basics. I don’t have time for all the fancy stuff – problem solving and estimating. Kids have to first learn how to do computation. Even then, you have to keep pounding it into their heads. Later on, at the junior high level, it’ll start to make sense to them.”[9]

Of course, someone who has actually spent time in a junior high school might frown at that last sentence (a premise critical to the whole argument, incidentally) since for some odd reason the stuff still doesn’t make much sense to them, even after more years of pounding. But the teacher’s general premise seems no more controversial than the proposition that you’ve got to walk before you can run. Starting with the basics is an idea that everyone accepts as plain common sense.

Everyone, that is, except those individuals who have actually studied the subject.

The bottom line is that this formulation doesn’t reflect an immutable truth about learning. It reflects a particular model of learning, behaviorism, which has lost credibility among experts in the field even as it retains a stranglehold on the popular consciousness. Two facts about this doctrine should immediately give us pause. One is that, as the name suggests, it is all about predicting and producing behaviors. “Because there is no place in the model for understanding, it is not surprising that behaviorist training rarely produces it.”[10] Second, the objective is to produce the “correct”
behaviors: in the purest form of this approach, the teacher breaks “learning down into such small
steps that errors are not experienced.”[11] As I’ll argue shortly, no one can learn effectively,
particularly in a way that involves serious thinking, if her primary purpose is to avoid mistakes and
get the right answer.

But let’s forget about the baggage carried by behaviorism and just look at the contention that kids
must focus on the basics before they attempt all the “fancy stuff.” In the real world, the result of
this philosophy is that the fancy stuff is often put off forever. The traditional curriculum keeps
moving students from one isolated fact or skill to the next: the assignments get harder, but not
more meaningful. Thus, the claim that learning the basics is justified because it prepares kids for
what comes later turns out to be a kind of con: in senior year of high school, they’re still memorizing
and practicing the basics – just different basics.[12]

Even traditional educators who don’t intend this outcome are unwittingly selling their students
short. Just as there are real questions about the conventional sequence of courses – biology to
chemistry to physics, for example[13] – so there are good reasons to challenge the belief that within
a given course students must begin by covering basic skills and only later engage in more ambitious
kinds of learning that require thinking. Back in the 1920s, Whitehead declared that “it is not true
that the easier subjects should precede the harder. On the contrary, some of the hardest must come
first because nature so dictates, and because they are essential to life.”[14]

Cognitive and educational psychologists have gradually come to realize the truth of this apparently
paradoxical position. The consensus of these experts was summarized by Lauren Resnick at the
University of Pittsburgh, herself one of the leading authorities in the field, and she is worth quoting
at length:

The most important single message of modern research on the nature of thinking is that the kinds of
activities traditionally associated with thinking are not limited to advanced levels of development.
Instead, these activities are an intimate part of even elementary levels of reading, mathematics, and
other branches of learning - when learning is proceeding well. In fact, the term ‘higher order’ skills
is probably itself fundamentally misleading, for it suggests that another set of skills, presumably
called ‘lower order,’ needs to come first. This assumption - that there is a sequence from lower level
activities that do not require much independent thinking or judgment to higher level ones that do -
colors much educational theory and practice. Implicitly at least, it justifies long years of drill on the
‘basics’ before thinking and problem solving are demanded. Cognitive research on the nature of
basic skills such as reading and mathematics provides a fundamental challenge to this assumption.
Indeed, research suggests that failure to cultivate aspects of thinking [that are part of] . . . higher
order skills may be the source of major learning difficulties even in elementary school.[15]

Examples of how the best teachers act on this finding will be offered in a later chapter. For now I
just want to emphasize the limits of the traditional, behavioral prescription for teaching. Two
problems with that approach quickly become apparent if you’ll think for a minute about how you
learned to drive a car. First, the process wasn’t incremental. Your expertise didn’t develop in tiny,
evenly spaced steps. Rather, there were probably leaps of improvement such that everything came
together one day and you were suddenly driving more proficiently than you had the last time you got
behind the wheel. This is equally true of intellectual growth, which “does not take place in small,
linear increments but is better described as occurring in qualitative and uneven shifts in
understanding.”[16]

The second feature of learning to drive is that you mastered the activity as a whole; you didn’t work
on separate skills one at a time and then put them all together later. If someone asked you, you
could have named some of those skills — applying the right amount of pressure to the accelerator,
judging distances, knowing when to glance in the rearview mirror, and so on - but real driving can’t be reduced to those parts and it isn’t learned by concentrating on them in sequence. You practiced the individual skills in the context of the act of driving.

Another example speaks to this last point. With the exception of trained musicians, few of us could sing a note followed immediately by the fourth tone of its scale (say, a C and then an F). Or can we? The skill in isolation is impossibly hard, but the skill embedded in a meaningful context is remarkably easy: Just sing the first two notes of the song “Tonight” from West Side Story.[17] In academics, too, we learn most readily, most naturally, most effectively when we start with the big picture — which is to say, precisely when the basics don’t come first.[18]

This is what underlies the approach known as “Whole Language” (discussed in chapter 9): it’s not that children shouldn’t learn phonics, but that phonics shouldn’t be the point of departure. The point of departure is the story. Kids master the reading and writing skills necessary to follow or tell that story. It’s just not true that one must learn to read before being able to read for understanding; it makes a lot more sense to learn to read by reading for understanding. Precisely the same thing may be said of math: wise educators don’t teach addition and subtraction as prerequisites for pursuing interesting problems; they teach these skills through interesting problems. They don’t start with the basics and make students practice them on rows of numbers; they start with the need to figure out how many grapes each child can take so there will be enough for everyone. “Students can do more advanced concepts even if they don’t have all the basic skills”[19] – and they can most effectively learn those skills if they’re invited from the beginning to think in a sophisticated way about the underlying concepts.

I remember having a conversation with a woman at a reading conference who sounded a lot like that fifth-grade math teacher quoted earlier. When I disputed her contention that the basics had to come first, she said, “Well, you need facts in life.” I asked for examples of where knowing facts off the top of your head is more important than knowing how to think (or knowing which facts were most relevant), and her answer was, “College.” That would be true only at a pretty poor college, I replied, to which she played her discussion-ending trump card: “Well, that’s life!”

That - or a comparable invocation of the “real world” - is frequently the Old School’s last refuge, its way of dismissing reform and reformers. A history professor recalled that her own education was “rote learning, boring details, tedious routines, to be sure, but school - and life - is like that.”[20] (Maybe Santayana was wrong: it is those who are ignorant of the fact that the past could be otherwise who are condemned to repeat it. Or make their children repeat it.) The reasonable reply, it seems to me, is that nothing could be less “realistic” than the staples of a traditional education,[21] including having to learn skills outside of a practical context.

“Facts Must Be Memorized”

The Old School not only emphasizes what it regards as basic facts but often requires students to learn many of them “by heart.” One justification for doing so is that memorizing is a useful activity in its own right, a way of training the mind. To the best of my knowledge, no evidence has ever shown this to be true. Committing things to memory may train you to be a better memorizer, but there is absolutely no reason to think that it provides any real cognitive benefits. Stuffing facts into your head doesn’t help you think better; indeed, the time spent stuffing is time not spent analyzing or inventing or communicating, making distinctions or drawing connections.

The other justification for memorizing a bunch of information is that this information has to be inside your head to be useful. Yet as a rule, observes William Glasser, “the world says look it up, don’t rely on your memory.” He adds, “I would hate to drive over a bridge, work in a building, or fly in an
airplane designed by engineers who depended only upon memory.”[22] In most situations, information doesn’t have to be locked in cranial storage – and most information simply can’t be, just because there’s so much of it.

But let’s acknowledge that there are situations where facts must be ready-to-hand, where there isn’t time to look them up. Even so, just because some things need to be inside your head doesn’t mean the best way of getting them there is to sit down and learn them by rote. That, as psychologist Ellen Langer points out, is basically “a strategy for taking in material that has no personal meaning.”[23] The very fact that you have to make an effort to memorize it suggests there is something artificial about the whole business. More to the point, deliberately committing things to memory usually doesn’t work very well — at least not for long. After decades of studying the question, Joseph Novak, professor of science education at Cornell University, has concluded, “Knowledge acquired by rote learning will not be assimilated . . . into a cognitive structure.”[24]

Think about it: how much of what you had to commit to memory in school do you still remember? (What’s a gerund? What’s the capital of North Dakota? What’s the formula for finding the volume of a sphere?) Typically, the anxiety of preparing for the test stays with us a lot longer than whatever was on the test. But if a certain fact or skill is so important that we want students to carry it inside their heads for a long time, then we ought to forget the methods of traditional education and listen to what experts on learning like David Perkins have to say: “Over and over again, studies have demonstrated that we memorize best when we analyze what we are learning, find patterns in it, and relate it to knowledge we already have. In other words, when we think about it.”[25]

And, one might add, when we use it. The word processing commands I use whenever I type are burned into my memory simply because I call upon them almost every day, not because I sat down and tried to memorize them. The latter is like pushing a boulder uphill: it rolls back down because it doesn’t need to be there.

“Skills Require Drills”

Closely related to memorizing facts is practicing skills. Driven by a theory of learning no more sophisticated than the old saw “practice makes perfect,” children are made to do something over and over and over, to “attain efficiency in outward doing without the use of intelligence,” in John Dewey’s words.[26] Clearly, this factory-like approach is so unappealing to many students that they come to hate school, so there had better be a compelling pedagogical justification for it.

There isn’t. In the Old School classroom, six-year-olds are handed worksheets and told to fill in the missing letters in one word after another (as in: w_ste of t_me). Sixteen-year-olds are shown a two-variable equation on the blackboard and then given umpteen more just like it to do on their own. Such instruction requires very little of the instructor – which is why it’s most common “in places where teachers are poorly trained”[27] – and it offers very little to students. Indeed, the completed assignments reflect very little of students. Even proud parents who collect every memento of their children’s school-age years have no reason to save these sterile worksheets.

Kids who are variously called “at-risk,” “low-achievers,” or “slow learners” usually “suffer most from a proficiency-driven curriculum because they are consigned indefinitely to dull and repetitive skills instruction that does not enable them to grasp underlying concepts.”[28] Drilling isn’t teaching. If I don’t understand how to do something, making me do it repeatedly isn’t going to help; it’s just going to make me feel dumber or angrier. Yet students who are already struggling are those most likely to be forced to do this kind of stuff.[29]

Even when students already have the skill in question, drills are of dubious value. “Thinking does
not develop and cannot be perfected through mere practice," as Constance Kamii, a leading mathematics educator, has written.[30] The Old School method isn’t about developing understanding but merely about producing the right answer – perhaps with a standardized test in mind. If it turns out that the technique known wryly as “drill ‘n kill” does raise test scores, that’s an invitation to reevaluate the superficiality of those tests, not a reason to continue using this technique.[31]

As with knowing certain facts by memory, there are times when it can be useful for a skill to become automatic – looking at the squiggles on a page and understanding the words they represent, for example. But that, again, isn’t an argument for a particular method of teaching. Just as deliberate memorization of facts isn’t the best way to learn something by heart, so worksheets don’t offer the best way of acquiring a skill. Moreover, practicing some things until you can almost do them in your sleep often interferes with flexibility and innovation. What can be done without thinking usually is done without thinking, and that locks us into patterns and procedures that are less than ideal.[32]

“The Point Is to Get the Right Answer”

Memorizing facts and practicing skills are predicated on the idea that answers and strategies are either correct or incorrect – and, more important, that schooling is mostly about training students to produce the correct ones. Once again, Dewey got to the heart of the issue: “The zeal for ‘answers’ is the explanation of much of the zeal for rigid and mechanical methods.”[33]

Here we have another example of how thoroughly the traditionalists in American education have triumphed: we’ve been conditioned to accept as an obvious truth – rather than one particular model of schooling – the idea that learning is a process of getting things right, and thus that the “good” students get more right than the “bad” ones. A child produces the right answer and everyone is happy: on to the next problem, the next topic, the next grade. A child gets the wrong answer and whether the adult’s response is harsh or friendly, the goal will be to get her to produce the right answer tomorrow. (Although we may try to soften the blow by saying, “No, but you’re very close!”), the clear message remains: all that matters is proximity to the correct response.][34]

Teacher-led discussions are often fishing expeditions: they’re not invitations to reflect deeply on complicated issues but attempts to elicit the right answer. Even in English or social studies classes, where the questions appear to be more open-ended, students inspect the teacher’s face to see how nearly their responses approximate what she’s looking for. I see this in classrooms all over the country. In a Chicago public school, a second grade teacher asks about the concept of tolerance; she pleasantly acknowledges a variety of answers until she hears the one she wants, at which point she nods vigorously, exclaims, “Say that again!”, and writes only that comment on the board. In a Seattle private school, the atmosphere is informal and the level is advanced, but the approach isn’t all that different: the high school history teacher asks what makes a society “civilized” and then gently tries to pull the right answers from students rather than inviting a real exchange of ideas. In a Minneapolis kindergarten class, the art projects pasted to the wall are virtually identical, suggesting that there is one right answer even to the question “How do you make a pumpkin?”

Some students – only some – will figure out how to say what the teacher wants to hear, how to fill in the bubbles that the standardized test-scoring machines will count as correct. These students will receive colorful stickers and trophies and A’s; their papers will be proudly push-pinned to the bulletin boards and they will eventually be admitted to expensive colleges. But all the kids will learn that school is like a factory where the point is to produce error-free widgets, to perform well, to play the game. “Knowing the right answer requires no decisions, carries no risks, and makes no demands,” says Eleanor Duckworth of Harvard University. “It is automatic. It is thoughtless.” And when children’s ideas, rather than being taken seriously, are “simply scanned for correspondence to
what the teacher want[s],” well, then it isn’t too hard to figure out “what happens to children’s
curiosity and resourcefulness later in their childhood.”[35]

That rumbling you hear in the distance is the right wing readying its invocation of the dreaded
charge of relativism. “What?! Are you saying there aren’t any right answers? That eight plus three
can be ten if you say so? That one scientific or historical theory is as valid as the next?” No, no, and
again, no. What I am saying is if we want kids to be thinkers, we have to encourage them (and help
them) to think – and that means spending most of their time in most subject areas on controversial
issues. From the earliest grades, students should be grappling with questions that don’t lend
themselves to single-word answers that are either right or wrong. There should be fewer questions
like “What was the name of the town where the characters in this story lived?” and more questions
like “Why do you think the characters in this story never left the town where they lived?” There
should be less time defining words like nationalism and more time arguing about what the world
would be like if there were no countries.

Notice two things about this recommendation. First, it’s not relativistic because there are better
and worse ways of answering these questions (and students get a much richer education,
incidentally, if they participate in devising those criteria). Second, to answer these questions well,
you need to have some facts and skills. But the facts and skills are acquired in the context of
answering meaningful, engaging questions. They are not acquired purely for the purpose of
coughing up the right answers to dull, testlike questions. It’s the same pattern we saw with
remembering facts, and again with acquiring skills: even to the extent we want kids to have the
correct information, we don’t do it by making them seek out correct information all day.

“Knowing is a process, not a product,” said the distinguished educator Jerome Bruner,[36] and when
we get that backward – when teachers or parents lead students to believe their task is to produce
right answers – those students are less inclined to talk with each other, to try out possibilities, to
play with ideas. They may get the answer because they’ve memorized a fact or a formula – but with
no understanding of why it’s true, or under what conditions it’s true. Plenty of students score well
on standardized tests because they can come up with the correct responses even though they have
only the dimmest sense of what they’re doing, or why.

The limits of focusing on right answers are apparent even in math, where right answers
unquestionably exist. Having received a decent elementary school education, for example, I can tell
you how to divide one fraction by another: flip the second fraction over and then multiply them
together. But don’t ask me why it’s done that way. I have no idea. I was given a bunch of tricks
whose purpose was to yield the right answers – not to help me understand. The two are completely
different in theory, different in practice, and often different in results. My test scores were super,
but my grasp of mathematical principles was superficial.

What it comes down to is that not all right answers are equal: some reflect mindless, short-term
memorization and others reflect something more. Not all wrong answers are equal either: some
reflect sloppiness and others reflect a complete lack of understanding. (Thus the response, “No, but
you’re very close!” is also pretty silly: a child may be off by only one digit but have no idea what
she’s doing.) These distinctions, critical to learning, are lost if the only criterion is whether your
child’s answer matches the one at the back of the book (or in the teacher’s head).

In a right-answer environment, moreover, such as a classroom where teachers are under pressure to
raise standards (read: test scores), there is less openness to responses that are thoughtful but
unconventional. There is less concern with how students arrived at the answer they did, whether
right or wrong. “Posing narrow questions for which one seeks a singular answer denies teachers the
opportunity to peer into students’ minds”[37] and thus to help them learn most effectively. Indeed,
Jean Piaget’s vital contribution to our understanding of how children learn was based on studying the qualitatively different errors they make at different stages of their development.[38]

Any of these reasons may explain why there is less of a right-answer focus in the schools of other countries, such as Japan.[39] It’s always instructive, and often quite surprising, to find that the things we take for granted – the foundations of traditional American education, for example — aren’t necessarily present in other parts of the world. It’s also illuminating to realize that, even to the extent we regard schooling as preparation for adult life (or, more narrowly, for work), the traditional methods and assumptions may not make much sense. While we adults often need to find the right answer, there are more occasions in a given week when we will wrestle with questions such as “What might be a better way to do this?” “Which of the possible explanations for this problem seems to be most relevant?” “How do I cope with my child’s latest crisis?” and “What does it mean to lead a good life?” Not only are there no cut-and-dried answers to these queries, but 12 or more years of being trained to look for cut-and-dried answers may well put us at a disadvantage.

“Get to the Civil War by Thanksgiving”

One of the most distinctive features of American education is the expectation that a great many things will be “covered” as quickly as possible so as to maximize the number of topics about which students will presumably be knowledgeable. Teaching sometimes resembles a caricature of American tourists in Europe: there are only x days to see y countries, so the rental car screeches to a stop in front of a famous ruin, the family jumps out and snaps pictures, and the children are herded back into the car. Those who protest that they didn’t really see anything are told not to worry: “You’ll see it when we get home.”[40] It’s like checking off entries on a list: we can say we set foot in all these places even if we don’t really know what any of them are like. Likewise with school: if it’s Tuesday, this must be a preposition.

What drives such teaching is the imposition of a long list of standards along with demands that students and teachers be held accountable for covering all of them, however superficially. Linda Darling-Hammond, a researcher and teacher educator who has studied this topic extensively, observed that many existing standards documents do not encourage teaching for understanding. . . . They outline hundreds of bits of information for students to acquire at various grade levels in each subject area, creating expectations for content coverage that render impossible the in-depth study students need to understand and apply ideas.[41]

The more such expectations are created, the greater the probability that teachers will rely on textbooks, which invariably include a little bit of everything and a truly thoughtful treatment of nothing. (It can safely be said that any course whose curriculum consists mostly of reading a textbook, chapter by chapter, is a course worth avoiding.)[42] In turn, the teacher’s use of textbooks and the state’s lists of standards reflect a certain philosophy of learning – namely, the view that education consists of accumulating a bunch o’ facts.[43]

The problem with doing many things, not surprisingly, is that you can only scratch the surface of each. It takes time to write a decent story or essay; you need to invent and polish and then let it sit for a while and come back to it later. It takes time for a young child to figure out why only some objects float, for an older student to figure out why only some countries got involved in World War I, for a reader of any age to savor the sweetness of fine prose. Some kids can get the right answer to a math problem quickly, but it takes time to understand how someone else managed to get the same answer using a radically different method. It takes time to design, set up, and carry out a clever experiment that will really tell you what you want to know. It takes time to learn.
That’s why parents who would like to see school move beyond the realm of the superficial should get very nervous if too much territory is being covered over the course of a year (or a week) in their children’s classrooms. Experts in cognitive psychology overwhelmingly oppose — and even crusade against — the tendency to march double-time through a set curriculum. Howard Gardner and his colleagues refer to coverage as the single greatest enemy of understanding. Fred Newmann, at the University of Wisconsin, contends that real thinking is “persistently undermined by the effort to transmit information on countless topics to ensure that children possess basic (cultural, scientific, mathematical, economic, and civic) ‘literacy’” — which is a reasonably good summary of the traditional model of education. An emphasis on “basic literacy” is death to depth.

The piquant irony, though, is that exposing students to fact after fact after fact after fact doesn’t just prevent them from doing quality thinking: it also gets in the way of learning the facts. Traditional education fails even on its own terms. “Most of the time,” Newmann continues, “students receive only superficial exposure to countless items of knowledge that low-achieving students rarely learn and that high-achieving students remember only long enough to succeed on tests.” Instead of seeing the pattern here, instead of realizing how our system of teaching (and our demands for Tougher Standards) are to blame, we accuse the slow kids of not trying hard enough and congratulate the quick kids for doing so well on those tests.

As though it were not a sufficient indictment to say that understanding is undermined and even the facts are not retained, consider that this style of teaching also trains students to value doing lots of stuff even if they don’t get much out of it, a mindset that may linger throughout their lives. (Could the American-style tour of Europe reflect the American style of education that preceded it?) Moreover, it views as dispensable the students who need more time to understand something since the pressure to move on to the next topic is too strong. (Apart from the fact that schooling is conceived of as a competitive event, it’s interesting that that race is to the swift, not to the reflective.) Finally, it discourages active student involvement in learning. In her study of American high schools, Linda McNeil of Rice University found that teachers believed “the pace of the lecture was critical to covering the course [material] adequately. To maintain that pace, student talk had to be kept to a minimum.” As we’ll see later, student talk is critical to learning, which offers yet another explanation for why learning suffers in traditional classrooms and in districts obsessed with standards.

“Bring Your Own Containers”

“I want you to teach my kid the basics even if you have to pound them into her head,” a sixth grade teacher in Washington was commanded by a student’s father not long ago. Whatever we may think of his preference for “the basics,” it is the metaphor of pounding (which, you may recall, was also used by the math teacher quoted above) that is ultimately more pervasive and pernicious. It suggests that we can make students learn by the sheer force of didactic instruction, by having the teacher stand at the front of the room, perhaps writing on the blackboard while disgorging information that everyone else in the room is supposed to lap up and copy down.

The teacher tells; the students listen. And when they aren’t listening, they’re reading things like textbooks in such a way as to absorb information. Then come the quizzes, compulsory recitations, and other ways of proving that they remember what they were told. All of this adds up to a system, an approach to teaching, that lends itself to a variety of colorful labels. Critics in the field of education call it “chalk ’n talk” or “stand and deliver” or “the sage on the stage” (or, from the student’s point of view, “sit ’n git”). Dewey said these methods reflect a “static, cold-storage ideal of knowledge.” The great Brazilian teacher Paulo Freire called it the “banking” concept of education: facts are deposited in students’ heads and then withdrawn on demand. It’s also been referred to as the “jug and mug” model, meaning that stuff is poured from the big container into the
little ones.

Remarkably similar metaphors are used by people who are not at all critical of this approach and sometimes aren’t even aware they’re using metaphors. Education has been described as the “delivery of instruction” or the “transfer of information.” More testing of students has been demanded (in this case by the governor of Wisconsin) on the grounds that otherwise “we don’t know what went into their heads.”[51] Perhaps the most memorable illustration of this model appeared in one of those bottom-of-the-page tidbits in the Reader’s Digest that are designed to induce mild chuckles. The item described a sign found on a high school bulletin board: “FREE. Every Monday through Friday. Knowledge. Bring your own containers.”[52]

If you think of education as transferring or transmitting a bunch o’ facts, then it also makes sense to think of children as little more than empty vessels into which that knowledge is poured. This is the premise of all the Old School methods discussed in this chapter. The “transmission” model is found in first grade classrooms devoted to the systematic teaching of phonics and in high school honors classes where teachers slap transparencies on the overhead projector and lecture endlessly about Romantic poets or genetic codes. As a rule, the more that standardized tests are used (and their results emphasized), the more we would expect schools to adopt this approach to teaching students of all ages.

Here we have one more example of how a defining doctrine of traditional education not only persists in American classrooms but has come to be confused with education itself. Why this should be the case isn’t all that hard to understand, however. First of all, most of us have sat and listened to teachers lecture at us year after year, so we naturally think that’s what teaching is all about. Second, there’s a kind of common-sense plausibility to this model: if we’ve never had the opportunity to think about how learning happens, it’s reasonable to assume that a teacher, who presumably is more knowledgeable than his students, would simply tell them what he knows.

When I was teaching, it never dawned on me to question this view. There was a stretch of seven years, for example, during which I took great pleasure in teaching an intensive course on existentialism to high school students. In between terms, I fine-tuned the reading list and perfected the lectures, looking forward to the next year when I could teach it again — rather as one might tinker with a new car in the garage before proudly driving it around. It wasn’t until years later that I began to realize just how little I understood of education. The idea of a teacher with a ready-made course just waiting to be taught to students makes about as much sense as a young, single person with a ready-made marriage who needs nothing more than a partner to have it with.

Eventually I came to understand that a course is created for and with a particular group of students. “Teaching is not essentially performance,” as Bill Ayers remarked. “It is not the delivery of the goods. Teaching is an interactive practice that begins and ends with ‘seeing’ the student.”[53] I didn’t know that, so I ended up seeing only my reading list and lecture notes. Because I was trying to find the most efficient way of giving students the knowledge and skills that I already had, I was treating them as interchangeable receptacles.

That isn’t what human beings are, however, and it isn’t how they learn. As a later chapter will elaborate, even infants are active meaning-makers. By the time a child toddles into a classroom, he is already buzzing with beliefs and ideas and questions. He encounters new facts and theories in light of what (and how) he already thinks. If he is just given new facts — without an opportunity to assimilate them, think them through, and use them — he’ll probably forget them. If he is just told about new theories, he probably won’t really understand them and will just shake them off and continue thinking the way he did before.
I used to assume I was a good teacher because I knew what I was talking about, because I enjoyed what I was talking about, and because I was a good talker. The problem was that I thought teaching was about talking and so I did way too much of it. I wasn’t familiar with cognitive research demonstrating that “knowledge cannot be given directly to students.” Precisely because I was successful in conventional terms, I had no reason to question those terms. It would have been deeply disconcerting to realize that I hadn’t the foggiest understanding of how learning takes place. That recognition would have forced me to consider the possibility that I wasn’t nearly as good as I thought I was, that my skill at organizing and presenting information didn’t mean that I was a qualified teacher.

Had someone asked me at the time, I would have conceded, and perhaps made a wry joke about, the fact that my students would probably forget most of what they had learned in class. I might have rationalized this as a fact of life, or a sign of deficiency in the students. But one very good book on the subject observes that it’s not really accurate to complain that students forget what they learned. Why? Because they never really “learned” it in the first place. They were just taught it.

Such statements, of course, are so much red meat to Old School partisans, who vociferously defend the transmission model and attack anything offered in its place (often by reducing all alternatives to cartoon-like versions of touchy-feely experiences). The possibility that children could bring their minds to school, rather than their “own containers,” provokes traditionalists to such fury that it makes you wonder about the source of their visceral attachment to the idea that learning is just a transfer of information.

In fairness, though, calling the transmission model into question can make a lot of people uncomfortable. It challenges the cynical teacher who insists he “taught a good lesson even if the kids didn’t learn it” – as if this weren’t a contradiction in terms. It challenges the compassionate teacher who wants to make things easier for a struggling student and so just says, “Here, this is how you do it.” It challenges the principal who comes in to observe a teacher and, seeing that she’s not “standing up in front of the room giving a lecture,” offers to come back on a day when she’s “really teaching.”

And it challenges parents. If we want our kids to be superb learners, then we’ll have to take the customary assumptions about what makes a “good teacher” and turn them upside-down. We will be less excited about having our children assigned to someone who is a charismatic lecturer, someone who makes information interesting as he pours it in. A great teacher isn’t necessarily more patient or proficient at getting information across; he is more likely to understand that getting information across isn’t his primary job. What matters isn’t how well he holds students’ attention so much as whether he knows enough to stop being the center of attention. Thus, the common parental question, “Yes, but is my child really learning anything?” ought to be asked mostly about classrooms characterized by lectures and textbooks and quizzes and worksheets – and an implicit model of teaching as transmission.

* * *

When we take a step back and look at the traditional model as a whole – the fragmentation and enforced passivity, the reliance on basics and postponement of thinking, the memorization of facts and rehearsal of skills and the emphasis on transmitting right answers – the effects on the quality of student learning aren’t encouraging. But beyond bottom-line achievement, we also have to consider the effects on how kids come to regard what they’re doing, the impact on their continuing motivation to learn. Of course, not all students will react the same way to anything. But as a rule, it’s hard to deny that students’ excitement about learning is almost visibly drained away when they’re subjected to the Old School approach.
“Hooked on phonics” is a joke. Who gets hooked on the cr sound? Likewise, “we’ve discouraged so many kids from science that there is hardly anyone left. The attitude has been ‘Let them eat facts.’ It’s no wonder they lose interest.”[60] Overall, enough memorization of vocabulary words, enough dittos filled with naked numbers, and pretty soon rooms full of curious children are turned into so many antsy clockwatchers, turned off to English, to science, to school, to learning. But rather than identifying the source of the problem, many adults have adopted an annoying habit of blaming the student. As Dewey put it, if a child was “engaged in physical truancy, or in the mental truancy of mind-wandering and finally built up an emotional revulsion against the subject, he was held to be at fault. No question was raised as to whether the trouble might lie in the subject-matter or in the way in which it was offered.”[61]

Traditional teachers have a tendency to see “minimal student efforts as evidence of limits of student abilities”[62] — or simply of a paucity of motivation — according to one study of high schools. As a teacher complained to another researcher, “The kids here are where the problem is today. There’s nothing wrong with the curriculum. If I could just get people who wanted to learn, I would teach and everything would be wonderful.”[63] Teachers with this attitude quickly find themselves relying on artificial inducements, bribing students with A’s or threatening them with F’s in a desperate effort to “motivate” them to do what they understandably have little interest in doing. (Sadly, these carrots and sticks then further reduce students’ interest in the learning itself.)

As to the long-term impact of traditional teaching and the push for Tougher Standards, then, we are finally left with Dewey’s timeless and troubling question:

What avail is it to win prescribed amounts of information about geography and history, to win ability to read and write, if in the process the individual loses his own soul: loses his appreciation of things worth while, of the values to which these things are relative; if he loses desire to apply what he has learned and, above all, loses the ability to extract meaning from his future experiences as they occur?[64]

NOTES

For full citations, please see the Reference section of The Schools Our Children Deserve.

Darling-Hammond (1997, p. 228) quotes from 1993 draft standards for history at the fourth grade level. Ibid., p. 60. The question is taken from the study guide for the 1995 New York State Regents test. Howe, 1995, p. 376. He added that standards are misconceived not only when they are too specific but also when they are developed “narrowly within particular disciplines” (p. 377). Most of what we’d like students to be able to do consists of ideas and capabilities each of which embraces many different fields. To that extent, distinguishing science standards from social studies standards from language arts standards is not just artificial but counterproductive. House et al., 1978, p. 137. Campione et al., 1988, p. 95. Ibid. Similarly, the “basics” approach to teaching younger children has resulted in their achieving some mastery of “the rules of reading and writing, even as they are learning their addition and multiplication tables,” writes Howard Gardner. “What [they are] missing are not the decoding skills, but two other facets: the capacity to read for understanding and the desire to read at all” (1991, p. 186). Thus, there is real truth to Paul Simon’s flippant critique: “When I think back on all the crap I learned in high school, / It’s a wonder I can think at all.” Whitehead, 1929/1967, p. 1. This teacher is quoted in Prawat, 1989, p. 317. The same position is defended by E. D. Hirsch, Jr. (1996, p. 150): “Higher-level skills critically depend upon the automatic mastery of repeated lower-level activities.” Yager, 1991, p. 54. Emphasis added. Labinowicz, 1987, p. 2. This is analogous to claims one sometimes hears in favor of the Old School model of discipline or classroom management: at the beginning of the school year, the teacher has to get “control of the classroom” and impose his or her expectations, rules, and punishments on
students because an orderly environment today is a prerequisite for helping kids to take responsibility and become empowered tomorrow. In reality, though, teachers who start that way rarely give up control and create a democratic environment later on (see Kohn, 1996a). This may be related to the argument that children can’t participate in making decisions about how to act and learn and solve problems because they’re not old enough to be given responsibility. Until they’ve developed sufficient maturity, they have to just do what they’re told. Unfortunately, the kind of treatment that follows from that assumption means they may never get to that point. The National Science Teachers Association has been pushing for a reform effort, known as “Scope, Sequence and Coordination of Secondary School Science,” in which all these different branches of science would be integrated into the curriculum taught every year from seventh to twelfth grade. Whitehead, p. 16. He added: “The uncritical application of the principle of the antecedence of some subjects to others has, in the hands of dull people with a turn for organisation, produced in education the dryness of the Sahara” (pp. 16-17). Resnick, 1987, p. 8. Wolf et al., 1991, p. 51. Piaget, whose work provides a powerful empirical refutation of behaviorist theories of learning, helped us to understand that there are several distinct stages in children’s mental development. The way they think after each of those cognitive reorganizations is different in kind, not merely in degree, from the way they thought before. Jerome Bruner (1966, p. 27), who was greatly influenced by Piaget’s findings, explained that “mental growth is not a gradual accretion” but “more like a staircase with rather sharp risers, more a matter of spurts and rests.” This example is adapted from one offered by Phil Daro, as quoted in Mitchell, 1992, p. 178. This is true regardless of age and regardless of whether we are quick or slow to understand things. On the latter point, Perkins (1992, p. 14) declared that “thoughtful learning is just as important for slow learners as anyone else.” Joy Donlin is quoted in Willis and Checkley, 1996, p. 6. From another source: “It is contrary to what we know about the way children think to begin with contentless computation and only afterwards move on to applications of that know-how in the real world” (Kamii, 1985b, p. 120). Gluck, 1995, p. 40. Other aspects of the Old School (discussed elsewhere in this book) are similarly hard to square with the “real world”: spending the day with people of one’s own age, being evaluated largely on the basis of performance at timed, multiple-choice exams, and the typical high school schedule. On the last point, one writer wonders “how many adults would do well at dealing with different job requirements and a different boss every 47 minutes” (Ohanian, 1996b, p. 281). Glasser, 1969, p. 72. In response to this point, E. D. Hirsch (p. 156) says that maybe we could look up the facts rather than memorizing them, “but few of us will” actually do so. Perhaps this is true; I don’t know how many people actually own almanacs, visit libraries, or use the Internet to do research. But what interests me is why it may be true, why some people lack the proficiency or the propensity to go find out what they need to know. My hunch is that it is precisely the traditional style of fact-based education that often leaves people either unable or unwilling to acquire information after they’ve graduated. If I’m right, it takes a lot of nerve to turn around and use this outcome to argue for that very style of education. Langer, 1997, p. 69. Novak, 1993, p. 52. Perkins, p. 8. Dewey, 1916, p. 137. Darling-Hammond, p. 272. And no wonder: “It is easier to organize drill and practice in decontextualized skills to mastery, or to manage 164 behavioral objectives, then it is to create and sustain environments that foster thought, thought about powerful ideas” (Brown, 1994, p. 11). Shepard, 1989, p. 6. See, for example, Campione et al., 1988, p. 96. Kamii, p. 60. After “intensive drilling on all the kinds of problems they will have to do on the test . . . the children are conditioned, like Pavlov’s dog; when they see a certain arrangement of numerals and symbols before them, lights begin to flash, wheels begin to turn, and like robots they go through the answer-getting process, or enough of them [do] to get a halfway decent score. . . . But is this a sensible way to carry out the education of our children?” (Holt, 1982, p. 260). Langer makes a particularly strong argument along these lines, drawing from research to show that “when we drill ourselves in a certain skill so that it becomes second nature,” we may come to perform that skill “mindlessly.” “Learning the basics in a rote, unthinking manner almost ensures mediocrity” (pp. 13-14). Dewey, 1916, p. 175. Even “Close!” rankles the really reactionary, who firmly insist that close just isn’t good enough, that the answer is
either right or wrong. This is just the hard-ass version of the more general phenomenon I'm describing here; my point is that the kinder, gentler version is similarly misguided. Whether we welcome approximations of the right answer or accept nothing short of the real thing, we're still guided by the same problematic pedagogy that stifles thinking. Duckworth, 1987, pp. 64, 131, 6. Bruner, p. 72. Brooks and Brooks, 1993, p. 86. Apart from Piaget himself, other people whose work I have cited here, notably Bruner, Kamii, and Duckworth, might be considered his proteges. Thus it is intriguing to consider the possibility that even Piaget didn't go far enough in challenging the preoccupation with right answers. While children make different kinds of errors, Piaget’s main point was that their thinking was erroneous, argued John Nicholls. Young children can’t see, for example, that a taller, thinner container doesn’t necessarily hold more liquid than a shorter, fatter one. “Applied to the classroom, this approach is easily assimilated into the ethic that students must discover the correct answers that are known to their teachers.” While conceding that “this is not a necessary consequence of Piaget’s perspective,” Nicholls went on to say that the model “has no obvious place for dialogue about what question should be asked or what paradigm, in the Kuhnian sense of world view, one should try out. Piaget’s is a psychology of puzzle-solving rather than of paradigm-choosing. The later Piaget, if not the early one, always knew what question he wanted to put to children and framed his questions to ensure that they answered his questions rather than others they might have been more disposed to ask. Here lies the key to the power of his work as well as to its limitations” (Nicholls and Hazzard, 1993, pp. 130, 202). James Beane (1997, p. 63) is similarly critical of the versions of constructivist teaching “that simply involve young people in finding their own way to predefined answers within one or another subject area.” For example, see Stigler and Stevenson, 1991; Lewis, 1995. The analogy isn’t perfect because at least these tourists over the course of a week or two will have tasted the food, met a few people, heard snatches of the language. To be more like traditional education, they would simply stay home and memorize the chief exports of each country. Darling-Hammond, p. 228. This reminds me of a story told by David Hawkins (1990, p. 138) about another elementary science teacher who was told she must use some fill-in-the-blank workbooks. “‘So,’ she said, ‘We used them. We weighed them singly and by twos and by threes. We weighed them dry and we weighed them wet.’” Theoretically one could hold such a view while being selective about the facts to be covered, but the reality is that once learning is seen in that way, the sheer number of facts out there creates pressure to cover as many of them as possible. Gardner et al. are quoted in Darling-Hammond, p. 113. Likewise, Lauren Resnick (1987, p. 48) has remarked that “thinking skills tend to be driven out of the curriculum by ever-growing demands for teaching larger and larger bodies of knowledge.” Newmann, 1992b, p. 84. This is even more true if, as one study suggests, the tendency to cover things rapidly, so that students are merely “exposed” to them, is most in evidence with “topics having to do with conceptual understanding and application,” whereas more time is spent with skill-building exercises (Porter, 1989, p. 12). Of course, it’s possible to imagine a style of teaching that errs in the direction of too much depth – graduate education in many fields comes to mind, where students are expected to know everything there is to know about one tiny area and nothing about anything else – but elementary and secondary education now lean so far over in the direction of breadth that we have a long way to go before this becomes a real worry. Newmann, p. 84. Beyond the question of how long these facts are remembered, we might ask an even more telling question: “How much of all that content is an important part of who [we] are today” (Wolk, 1998, p. 35). “Teaching for exposure also may communicate to students that knowing a very little about a lot of different things is more valuable than a deep understanding of a few key concepts” (Porter, p. 12). McNeil, 1986, p. 174. Also, “most teachers felt they could cover more material more efficiently if controversial topics were omitted.” Dewey, 1916, p. 158. Freire, 1970, p. 53. Wisconsin governor Tommy Thompson is quoted in Harp, 1996. The beauty of the Reader’s Digest is that you can’t really tell whether any given item appeared last month or in 1935. This one was published in October 1969, and was quoted in Silberman, 1970, p. 148. Ayers, 1991, p. 128. Resnick and Klopfer, 1989, p. 5. No matter how many times it proves fruitless simply to tell, Deborah Meier points out (1995, pp. 138, 144), “we keep feeling sure that if
we could but ‘tell it right . . .’” Moreover, “we worry whenever we’re not doing the talking . . . Teachers who were good at the old style . . . miss being star performers.” Brooks and Brooks, pp. 39-40. Perhaps it is because the overwhelmingly conservative constituency that supports traditional education can sense that there are political implications to vesting all knowledge and authority in the leader (of the classroom) as opposed to inviting students to play a more vital role in their own education. “The more students work at storing the deposits entrusted to them, the less they develop the critical consciousness which would result from their intervention in the world as transformers of that world. The more completely they accept the passive role imposed on them, the more they tend simply to adapt to the world as it is and to the fragmented view of reality deposited in them” (Freire, p. 54). There’s no contradiction for E.D. Hirsch, Jr. (p. 22), however, who sympathizes with such a sentiment and holds that if only students had been given more facts beforehand, they would have learned what the teacher had just taught them. Needless to say, this view is a lot more convenient for teachers, which may help to explain why the transmission approach to teaching remains so widespread. The quotation is from Darling-Hammond, p. 114. For a good discussion of this dilemma, see Searfoss and Enz, 1996. David Zahren, an instructional specialist in Maryland, is quoted in Welsh, 1990, B1. Dewey 1938/1963, p. 46. McNeil, p. 79. This veteran high school math teacher is described as maintaining “standards with a vengeance, regularly ejecting students from his classes and awarding a preponderance of Ds and Fs. This teacher’s talk, like that of other teachers who shared his view of students as the problem, was filled with military metaphors – combat pay, frontline, kick butt, line of fire – which reflect his general view of the classroom as a battlefield” (McLaughlin, 1992, p. 91). Dewey 1938/1963, p. 49. Copyright © 1999 by Alfie Kohn. This article may be downloaded, reproduced, and distributed without permission as long as each copy includes this notice along with citation information (i.e., name of the periodical in which it originally appeared, date of publication, and author’s name). Permission must be obtained in order to reprint this article in a published work or in order to offer it for sale in any form. Please write to the address indicated on the Contact Us page. www.alfiekohn.org — © Alfie Kohn