

The Road to Hell . . .

Contrarian commentary on education reform

THURSDAY, APRIL 15, 2010 A17

OTHER VIEWS

What schools need: I aim, I goal

By MARION BRADY
Making sense of much in
David Berliner

I would like to see all of our schools and universities do a little more of what we do in the classroom. I would like to see all of our schools and universities do a little more of what we do in the classroom. I would like to see all of our schools and universities do a little more of what we do in the classroom.

Helping kids make sense of life — that's a purpose

By MARION BRADY
David Berliner

One of my father's more striking traits was that I could not remember every Christmas Eve. I could remember the day after Christmas, the day after Christmas, the day after Christmas.

No students are alike — not in any respect

By MARION BRADY
David Berliner

A student who is high achieving in one subject is often low achieving in another. A student who is high achieving in one subject is often low achieving in another. A student who is high achieving in one subject is often low achieving in another.



You are not here for all the same reasons. You are not here for all the same reasons. You are not here for all the same reasons.

OTHER VIEWS

Sometimes it's wise to follow the crowd

By MARION BRADY
David Berliner

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How to raise test scores

By MARION BRADY
David Berliner

When Robert Pring's book *Zen and the Art of Motorcycle Maintenance* was published in 1957, over a period of several years I read it four or five times. I did the same with his 1981 *Life*. Both touch on many matters, but what interests me most are his thoughts on human values in general and on "quality" in particular.

OTHER VIEWS

High-stakes tests: The dog ate our common sense

By MARION BRADY
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OTHER VIEWS

Assumptions teach lesson about school reforms

By MARION BRADY
David Berliner

I have written a lot of articles about school reform. I have written a lot of articles about school reform. I have written a lot of articles about school reform.

Columns by Marion Brady from the *Orlando Sentinel* and other Knight-Ridder/Tribune newspapers

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Preface

Fact: America’s system of public education, imported from 18th Century Prussia, never gave professional educators a significant role in policymaking. However, a general public respect for the profession used to afford most teachers a measure of autonomy when their classroom doors closed. That autonomy allowed them to continuously adapt to the situation, contributing significantly to America’s historic edge in international competitions in technical, literary, and artistic fields.

Fact: That respect for teachers and the autonomy accompanying it began to disappear in the 1980s as leaders of business and industry, waving the “standards and accountability” banner, used their influence in state legislatures and Congress to take control of American education.

Many theories about their motives for taking control have been advanced. Here are a few:

Theory: True believers in the ability of market forces and privatization to improve education have deliberately engineered the takeover campaign. They’ve created “think tanks” and faux “grass roots” organizations to generate press releases, slanted research, cherry-picked statistics, and propaganda to discredit what they label “government” schools.

Theory: Corporate interests have convinced the public that significant innovation in regular public schools is impossible. Rather than attacking the bureaucratic constraints that lend credence to their claim, they are creating a parallel system of publicly funded charter schools they claim will foster innovation. In fact, the main reason charter schools are being promoted is to undermine teacher unions sufficiently to weaken or destroy their political influence.

Theory: The approximate half-trillion dollars a year America invests in education is seen by corporate interests as an easy, dependable, taxpayer-funded source of profit.

Theory: A determined push for “STEM”—science, technology, engineering, and math programs in schools—will flood the market with graduates. This will keep competition for jobs high, depress salaries, and assure comfortable profit margins.

Theory: “The soft bigotry of low expectations” has so permeated the teaching profession that only “tough,” non-educator leaders—mayors, CEOs, retired military officers—are capable of restoring American superiority and industrial preeminence.

Whether the education “reform” road we’ve taken since corporate interests took control is paved with good or ill intentions, it’s taking us to education hell.

And, sadly, the road to that hell has been smoothed by massive ignorance in the form of “the conventional wisdom.” The general public, politicians, policymakers, mainstream media, and even perhaps most educators, share that conventional wisdom. It’s taken for granted that educating—changing minds—is easy. If kids would just sit down, shut up, face front, and focus their attention on the book, the teacher, or the screen, schools could be staffed easily and cheaply by fresh young college graduates willing to devote a couple of years to public service before moving on to a genuinely intellectually challenging career.

The Road to Hell—a collection of newspaper columns I wrote for the *Orlando Sentinel* and other Knight-Ridder/Tribune papers—takes issue with the conventional wisdom.

The Knight-Ridder/Tribune columns that follow appeared first in the *Orlando Sentinel* newspaper. They were selected and assembled into an e-book by my brother, Howard Brady. It was entirely his idea, and it was hard work. Many of the columns were in a condition too poor to scan, and had to be keyed in word by word. I offered no help or encouragement because I didn't know he was doing it.

Howard is himself a writer. Most of his words are found in technical manuals related to satellite communication systems, but he has worked with me as co-author of American history and world cultures textbooks published by Prentice-Hall, Inc., a professional book for teachers published by the State of Florida that went through more re-printings than any other publication of Florida's Department of Education, and *Connections: Investigating Reality*, a course of study for adolescents and older students.

We believe *Connections* points the direction in which education must move if the incredible but largely unsuspected and unappreciated intellectual potential of the young is to be released.

Howard has done all this while serving for decades as a church organist and choir director, performing as a jazz pianist, and filling his house with fine furniture he's built. **Ω**

Education by recall cheats students' full mentality

Oct. 25, 1993

So, according to a survey of high school juniors and seniors, "cheating is pervasive."

That's discouraging. But it's much more discouraging that most academic work makes cheating so easy.

Look at the typical quiz and final examination. More often than not—even at the college level—the questions will require only that students remember a key word or two that they've read or been told. That makes it easy to "borrow" from a nearby student or copy from a crib note stuffed in a sleeve or sock.

How can cheating be stopped cold? By giving quizzes and exams that require students to move beyond the single, simple mental processes of recall and engage in a full range of mental processes. Questions that force students to think—questions that require them to categorize, hypothesize, generalize, synthesize, make value judgments, and use other real-world mental processes—don't lend themselves to cheating. When those kinds of questions are asked, the responses are invariably so distinctive teachers can easily tell if the responses came from a particular student.

The customary emphasis on memory work to the neglect of all other thinking skills assures that much instruction amounts to little more than ritual.

Want to plant a tiny bomb that will shake the entire educational establishment? Require that, beyond the middle elementary school years, every final exam include at least one question for each of the major mental processes;

Here are examples of those kinds of questions:

- Recall—What society is generally credited with developing the idea of monotheism?
- Categorize—Decide to which of Sheldon's four "body types" eight of your friends belong.
- Translate—With your textbook in front of you, describe as precisely as you can the graphic illustration on its cover.
- Hypothesize—What do you think is the most likely explanation of the shower curtain's tendency to move toward the shower stream when the shower is turned on?
- Value—What general principles do you think should be followed in the redistribution of property (such as farmland) formerly owned by the government, in countries that abandon communism?
- Synthesize—Which protective measures employed by plants and animals do you think could best be adapted to protect convenience store clerks against assault? Explain.
- Apply—We've identified stages usually marking the onset of social revolutions. How do events in Haiti correspond or differ from those stages?

Conventional education's preoccupation with the single mental process of recall to the neglect of all other thought processes probably stems from our metaphors for educating. We tend to see learning as quantitative. Knowledge is "absorbed." Student "cram" for exams. We're "loaded" with information." Our heads are "stuffed full." Teachers "cover the material."

When we move beyond the simplistic notion that educating has to do primarily with the quantitative storing of information and realize that it's mostly about the qualitative processing of information, we'll take a giant step toward our long-overdue educational revolution. **Ω**

So kids don't know much about history? Read this:

November 12, 1995

William Randall, chairman of the board that oversees the National Assessment of Educational Progress, is appalled. "The message of today's national assessment report is clear," he says. "Most American students—even high school seniors—have only a limited grasp of their country's past."

Throughout America, the NAEP's press release will trigger the shaking of heads and the clucking of tongues, and reinforce the view that public education is in a sorry state.

It's sad that our students know so little history. Santayana's observation that those who are ignorant of the past are doomed to repeat it is surely true. And, with the world's population expanding rapidly and technological change increasing the ease with which we kill each other, repetitions of the past are likely to get uglier and uglier.

But what's even sadder is that the press release will trigger a reactionary response that, in the long run, will make the situation worse. Driven by fuzzy, nostalgic memories of "how it used to be when I was in school," many community movers and shakers will demand that educators "get back to the basics."

I think I know something about those "basics." I taught my first American history class in 1952, and continued at secondary and college levels until very recently. I was the senior author of a secondary-level American history textbook published by Prentice-Hall, Inc. I regularly write articles for professional journals. For decades, I've done consultant work for publishers, educational organizations, and school systems all over America.

Out of that experience comes an opinion: If there's anything the NAEP's assessment calls for, it's not a return to the "good old days." Anybody who thinks that history instruction used to be better should administer the NAEP's test to representative members of high-school classes of 10, 20, 30, 40, 50 years ago.

"Well, we used to know it," those seniors may say, "but we've forgotten." If there's little or nothing to show for all the time, money, and effort that went into educating America's now-adult population, it's pretty hard to make a case for a return to past practice.

What's wrong with what we're now doing can't begin to be summarized in a "My Word" column, but here's a start:

- Most history instruction misses the point, which isn't to stuff students' heads with facts about the past, but to help them understand the dynamics of historical change.
- History can be studied as a story, or it can be searched systematically for patterns and regularities. Most history instructions mixes the two, and ends up doing a good job with neither.
- Students are inundated with thousands of bits of information tied to no powerful, important, organizing ideas. The human brain can't (and shouldn't) assimilate a clutter of disorganized information.

There are at least a dozen more reasons why Americans know so little about the past, and why what they know is of so little use. It's unfortunate that organizations such as the NAEP focus attention on symptoms rather than causes, thereby reinforcing simplistic notions that block real educational progress. [Ω](#)

'Back-to-basics' flunks with knee-jerk math reform

May 6, 1996

Regarding Friday's Page One article "Lawmakers pushing to raise high-school graduation standards":

Recently the *Sentinel* devoted three of its "Saturday special" pages to those interested in explaining what they would do if they were high-school principals.

Just about everybody, it seems, is an expert on what ails education. Unfortunately, most such expertise is nostalgia-driven and simplistic. Its prescription for every ailment? "Back to basics! If what's now being done isn't working, do it harder, longer, or both." Fundamental change—the kind of change real crises demand—is almost always viewed with suspicion by the amateur-experts and therefore opposed.

Consider, for example, school mathematics. According to the news media, math scores are too low. So, true to the "back-to-basics" response, a bill is introduced in Florida's Legislature to add algebra to the high-school graduation requirements.

It's a waste of taxpayer money. Tightening the screws may raise scores a few points, but it won't solve the problem. Fundamental change is in order—the kind of change that would almost certainly pack school-board meetings and trigger wails of protest about "dumbing down the curriculum."

Math, everybody agrees, is a basic subject. All students should come out of school able to make change, balance checkbooks, complete income-tax forms, check cash-register receipts, and know if they've been snookered by the vacuum-cleaner salesman.

This is what many think of when they think of school math. And, because this sort of "math" is obviously a good and necessary thing, and because it's hard to get too much of a good thing, the current math curriculum is, *ipso facto*, a good thing.

There is, in fact, relatively little of this kind of math in the school curriculum. School mathematics has been shaped (as one might expect) by mathematicians, and most mathematicians aren't much interested in balancing checkbooks and checking receipts. Most have been drawn to the field by its aesthetic appeal and make little effort to defend what they teach on the basis of its practicality.

Now, there's nothing wrong with math as art. But to make mandatory the particular kind of math now required is, it seems to me, a serious mistake, akin to making orchestra participation or oil portraiture or dance mandatory, and then getting all bent out of shape when some students don't perform well.

Math requirements should be changed, not to make math easier but to put the emphasis on statistical analysis—the primary tool for understanding the quantifiable aspects of our current situation, how we got where we now are as a society, and where we're probably headed.

American kids are as smart as any. But ours is a pragmatic society, and the “learn this because you're s'posed to” that still works in many traditional cultures rings pretty hollow here.

I'd bet a bundle that, if we'd forego knee-jerk, backward-looking “reforms” and make math a source of insight into the real world and the human condition, the scores wouldn't disappoint.

Ω

Later comment:

An outstanding and refreshing article on math education: “A Mathematician's Lament,” by Paul Lockhart: <http://www.maa.org/sites/default/files/pdf/devlin/LockhartsLament.pdf>

In education, sometimes less is more

May 27, 1997

I commend the *Sentinel* for its continuing concern for high-quality education. The articles may not be as exciting as local murder and mayhem, but they're more important. H. G. Wells was surely right when he said, “Civilization becomes, more and more, a race between education and catastrophe.”

I read with interest John C. Bersia's op-ed-page interview of Timothy Snyder. Bersia asked Snyder, “What's wrong with today's classrooms?” and Snyder answered that current technologies are “old and out of synch with the way students think.”

Now, I'll grant that technology has a role to play in instruction. But I certainly don't think technology deprivation ranks first as what's wrong with education, or that upgrading it will bring revolution. Technology has little to do with the quality of schooling.

When Bersia asked if educators might be “trying to teach young students too much,” he was much closer to a fundamental problem with most instruction. Snyder was right in answering that there's no known limit to what students can learn, but he ignored the real issue—the critical role played not by the *amount* of information taught but by its *organization*.

Our brains can't handle massive amounts of random data, and much of what students are now taught falls into that category. The educational establishment's historical theory of learning

is best captured by the old saying, “If you throw enough mud on the wall, some of it is bound to stick.” Each day, students are given a few minutes of this and a few minutes of that, with little concern for how the information fits together logically or for the mind’s need for order. That’s why we remember so little of what teachers and books once told us.

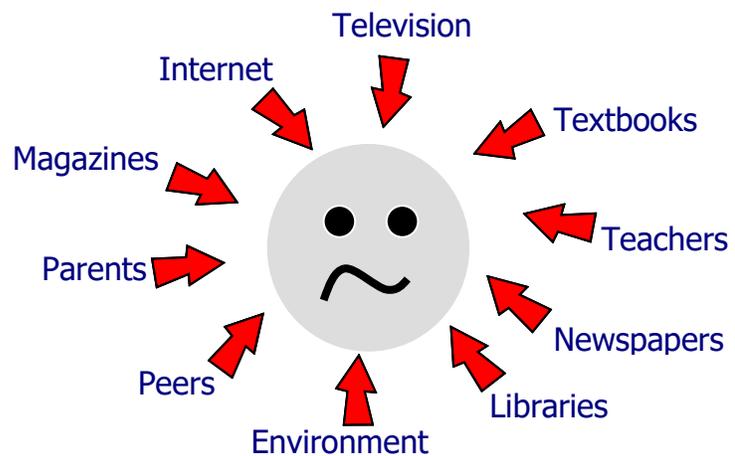
A hundred years ago, long before the news-media explosion and the Internet compounded the problem of information overload, British mathematician, teacher and philosopher Alfred North Whitehead was telling the educational establishment it was flooding students’ minds with too much miscellaneous stuff. “Let the main ideas which are introduced into a child’s education be few,” he said, “and let them be thrown into every combination possible.”

The educational establishment wasn’t listening then. And it isn’t listening now.

The world we’re trying to help the young understand is a single, systemically integrated whole. The curriculum we’re using to try to explain that whole to kids is a random, disjointed, fragmented, incoherent mess. We accept it because it’s what’s taught. And because we think we’re pretty smart, it must be OK.

It isn’t OK. Kids show up for kindergarten with a mental system for organizing and relating information already firmly in place in their minds, a system built into our language and culture. That system is far more sophisticated than the knowledge-organizing system adopted in the 1890s, the one that gave us the present, mass-production-inspired collection of narrow subjects and courses.

We need to make our implicitly known “natural” knowledge-organizing system explicit, base general education on it, and help students see the whole of which their specialized studies are a part. [Ω](#)



There's more to an education than getting job skills

(Date: 199?)

I read with great interest Monday's article in the *Orlando Sentinel*, "School plan fuels debate over focus." It reflected, of course, philosophical differences that have long pulled the educational establishment in many different directions.

In America, the weight of public opinion on this issue usually comes down on the side of "useful" education—meaning, ordinarily, an education that allows the young to move smoothly into the work force.

Our schools and colleges are full of students impatient to get their general education requirements out of the way so they can concentrate on 'what's important'—by which they mean the course work in their chosen field.

I'm in favor of specialized education. I served for a time as a member of the forerunner of the State of Florida's Vocational Arts and Technical Education Advisory Council. However, there's a lot more to a good education than acquiring job skills.

First, narrowly trained individuals frequently lack the breadth and depth of understanding and creativity demanded by satisfying work. Specialized training may get one off to a fast start, but it's of limited value over the long haul. Whatever the future holds, job success will almost certainly depend on far more than an individual's work skills. Because of the rapidity of technological change, just knowing how to *do* something is now almost never enough. One has to *be* somebody.

Second, those who allow themselves to be molded into just the right shape to fit instantly into a specific job sell themselves short. Every person's educational goal should be to become as human, as civilized, as complicated, as interesting as possible. Narrow training often means narrow interests, and narrow interests create bored and boring (and sometimes dangerous) people.

Finally, everyone should have some understanding of what the late sociologist C. Wright Mills called "the trends of era"—and should be able to stand back from his or her experience and put it into a reasonably accurate historical perspective.

Students need job skills. But they also need the kind of understanding of themselves and the human condition that a general education tries to give them. Unfortunately, traditional schooling tends to emphasize one or the other, and generally doesn't do a particularly good job with either.

The conventional wisdom is that there simply isn't enough time in the school day, so either general or specialized education must be slighted. In fact, there's plenty of time. The problem lies with traditional "general" curriculum. It's a hodgepodge of subjects and courses that have little or nothing to do with each other or with life as it's actually lived.

What's needed, and what we could have, is a single course of study welding together the hard and soft sciences, the humanities and the rest into a compact, logically integrated whole. After all, that's how our brains make sense of experience.

Students could get a vastly superior general education, in about a third of the time, and have the rest of the day to pursue studies consistent with their interests or aptitudes. [Ω](#)

Later Comment:

There's another, vastly important reason why focusing on too-specific job skills in school is a bad idea: Both the student and the world will change rapidly after graduation. Whole categories of jobs disappear, and statistics show that few people end up working in the fields for which they trained in school.

Rethinking schools: First of eight parts

Education reform: The long, hard road

March 6, 2000

Anyone who has ever tried to lose weight, squeeze out more miles per gallon, or attract customers to a business, knows about The Law of Diminishing Returns. The first few pounds usually come off fairly easily. A little more air in the tires will make an immediate difference in mileage. A half-page ad in the newspaper may bring in 50 new customers.

After that, it gets tougher. The closer a system gets to its peak performance, the harder it is to make a difference. After awhile the payoffs aren't worth the additional money, time or trouble. When that happens, a whole new approach may be necessary—exercise to go along with the diet, buying a different car, moving the business to a better location.

As it does in other dimensions of life, the Law of Diminishing Returns operates in education. Reformers push magnet schools, charters, vouchers, choice, new technology, flexible scheduling, tightened graduation requirements, school ranking, constant testing.

But not much happens. Even the schools we point to with pride—well-financed institutions in up-scale neighborhoods supported by caring parents and offering all possible Advanced Placement courses—aren't doing anything educationally spectacular. They're still loaded with kids who aren't even close to realizing their full potential, still turning out mostly Grade-C students, still sending out graduates who, in a few months or years, can't pass the exams they aced as students.

America's educational system has about peaked out. Most school districts have some kind of reform project under way, but it's usually only the reform committee members who reform. On a grander scale, the 1989 national education summit meeting convened by the [first] George Bush administration and attended by most state governors kicked off the current high-profile reform effort. It hasn't really made much difference. The main message from the annual meetings that followed has remained the same: Work harder.

If the world didn't change, maybe we could afford to coast along on the wisdom of our parents and grandparents. But it is changing, and at a rate unparalleled in human history.

Unfortunately, working harder is no longer the answer. We have to work a whole lot smarter. Working smarter means doing things differently, and doing things differently isn't easy. Ideas long held settle into grooves. Eventually the grooves turn into ruts so deep it's hard to see over their sides, much less climb out of them.

The beliefs and values that drive America's system of education have been in place for so long they've become articles of faith, and around articles of faith protective bureaucratic and emotional walls get built. It isn't just the educational establishment that resists change; it's everybody—parents, politicians, policy makers—even students.

But, as H.G. Wells reminded us, civilization is serious business—"a race between education and catastrophe." If we still hope to be around to celebrate the end of another millennium, we have to drag ideas we take for granted out into the open and begin to poke and prod them to see if they're up to the task of saving us from ourselves. Just one educational fallacy, tightly held, has the potential for doing us in. We hold tightly not just to one but to several, and we're not even aware of them, much less talking about how to break their hold.

When a society stops questioning why it's doing what it's doing in education, "reform" boils down to merely putting a higher polish on familiar rituals. If the world didn't change, maybe we could afford to coast along on the wisdom of our parents and grandparents. But it *is* changing, and at a rate unparalleled in human history. What we're doing isn't good enough. If every student in America was doing as well as the best students in the best schools are doing, it *still* wouldn't be good enough.

If we hope to survive as a society, kids have to be taught how to mentally sort out and make sense of a volume of raw information undreamed of a generation or two ago. They have to be taught how to use what they learn to track changes in the world around them, changes that are exceedingly complex and often beyond human ability to control. And then they have to be taught the enormous range of skills they need to control the changes that can be controlled, and adapt to the changes that can't be controlled.

That's doable, but we're not doing it. **Ω**

Rethinking schools: Second of eight parts

Starting from scratch to find a purpose

March 13, 2000

On June 17, 1744, commissioners from the English colonies of Maryland and Virginia negotiated a treaty with the Indians of the Six Nations at Lancaster, Pennsylvania. As part of that deal, the Indians were invited to send boys to William and Mary College.

The next day the Indians sent back an answer:

"We know that you highly esteem the kind of learning taught in those Colleges, and that the Maintenance of our young Men, while with you, would be very expensive to you. We are convinced that you mean to do us good by your proposal; and we thank you heartily. But you, who are wise, must know that different Nations have different Conceptions of things

and you will therefore not take it amiss, if our Ideas of this kind of Education happen not to be the same as yours. We have had some experience of it. Several of our young People were formerly brought up at the Colleges of the Northern Provinces; they were instructed in all your Sciences; but, when they came back to us, they were bad Runners, ignorant of every means of living in the woods...neither fit for Hunters, Warriors, nor Counsellors; they were totally good for nothing.

“We are, however, not the less oblig’d by your kind offer, tho’ we decline accepting it; and, to show our grateful Sense of it, if the Gentlemen of Virginia will send us a Dozen of their Sons, we will take care of their Education, instruct them in all we know, and make Men of them.”

A fair judge would have to say that the Indian’s proposal was the more thoughtful of the two. The colonists said “We’ll send your boys to school.” The Indians said “We’ll turn your boys into men.” What the colonists’ offer lacked that the Indian offer made clear was the purpose of education.

When it comes to aims and purposes, the present reform movement hasn’t moved much beyond the thinking of the Maryland and Virginia commissioners. Ask a dozen reformers the main purpose of schooling, and the response will be a dozen long pauses. Press the issue and pulled from distant memory may come, “To prepare students for democratic citizenship,” “Meet individual needs,” “Transmit societal values,” “Prepare students for useful, satisfying work,” “Teach students to think,” or any one of a dozen or so other answers.

Ask a dozen reformers what they think is the overarching purpose of schooling, and the response will be a dozen long pauses.

Given public education’s importance, its long history, the scrutiny it gets, and the vast amounts of money invested in it, it may be hard to believe that the question of purpose wasn’t settled long ago. Believe it. There’s general agreement that the young should be taught the 3 R’s, but that’s were consensus ends.

The consequences of a lack of purpose aren’t hard to find. A John Leo editorial in *U.S. News and World Report* titled “The new Trivial Pursuit” spells out one of them:

“U.S. News and World Report’s college guide is a fine bit of work, a useful tool for students and parents. But there is one thing it does not attempt to do: explain what is actually being taught on campuses...

“Colleges are unsure of their mission, buffeted by consumer pressures and ideological forces, and unwilling to say what a sound education might consist of. As a result of this confusion and drift, campuses are increasingly at the mercy of fads and trends.”

Leo then illustrates his point. The University of Wisconsin offers a course on soap operas. Students at Duke can sign up for “The Physics, History, and Techniques of Juggling.” Courses about vampires are available at several big-name universities. A hot craze is food studies. It’s popular with students who like to eat, talk about what they’re eating and assure themselves of a passing grade.

School committees write reform curricula; television productions examine education reform; books on education reform make best-seller lists; uncounted articles and editorials praise and criticize reform; candidates win elections with education-reform proposals; students take battery

after battery of standardized tests—high-stakes tests that have life-altering potential—and behind them all lies no clear philosophical position on the purpose of schooling.

Common sense says the reform journey should begin with a destination in mind. That's not happening. Ω

Rethinking schools: Third of eight parts

Standardized tests: The tail wagging education dog

March 20, 2000

The main blueprint for the current reform movement is “Goals 2000: National Standards and Measures.” The goals emerged from Congress during the 1990s at the urging of state governors and leaders of business and industry. By ignoring the whole question of the purpose of education, an official stamp of approval was put on the aimlessness that's plagued instruction since the Industrial Revolution. “Whatever it is you're doing,” the policymakers said, “the key to reform lies in doing it longer and harder.”

That simplistic message has frozen even more rigidly in place the worst aspects of American education. It has also triggered an orgy of testing that, unless it's stopped, will squeeze out what little creative life is left in the teaching profession.

Never before has so much ridden on the results of standardized tests. They serve as a basis for rating the quality of schools, for identifying good and poor teachers and awarding merit pay, for deciding who does and who doesn't get promoted or graduated, for giving money to high-performing schools and taking it away from poor ones, for deciding who's eligible for vouchers and so on. The old idea that the only good reason to test was to troubleshoot a kid's problem and decide what to do next has pretty much gone by the boards.

Behind the testing frenzy lies an assumption as damaging as the one that has given us education without purpose. The assumption: All learning can be measured.

In every society in every era, the elders roll their eyes in despair at what the young don't know. Before the 1990 National Governors Association education conference, and no doubt doing much to shape it, two think-tankers who knew their way around Washington, D.C., gave policymakers a lever for action. In 1988, Diane Ravitch and Chester E. Finn Jr. published a book called *What Do Our 17-Year-Olds Know?*

As might be expected, their answer to their own question was, “Not much!” Mixed in with the text, sometimes on every page, were bordered gray blocks. In each block was a multiple-choice question asked of a sample of 11th-graders, followed by their averaged scores.

When the book was published, newspapers throughout the country carried examples of the questions (“Who wrote *The Return of the Native?*”) and listed student scores. Emphasized, of course, were those questions that editors thought their readers could answer that were muffed by

lots of the high-school juniors. Public hand-wringing rose to a level that made politician involvement inevitable.

Prodded by all the news-media attention, the hand-wringing was predictable, but the consternation was an overreaction. Not in recent centuries have two generations shared a really broad spectrum of knowledge. Rapid social change sees to that. However, to think that this is altogether a bad thing is to fail to understand the adaptability that social change requires. If there's ever a generation that knows only what the generation before it knew, it can kiss its survival chances goodbye.

There isn't anything wrong with occasional small-scale testing of reading, spelling, computing and other relatively simple skills. But tests designed to find out which facts known by the elders aren't known by the kids are a curse. A school could turn out graduates who were thoughtful, responsible, creative, caring, interesting, courageous, trustworthy, perceptive, in love with learning and seekers after wisdom. But if not enough of them could remember who said "Speak softly and carry a big stick," or that Aesop was best known for having written fables, the kids and their school would be in big trouble with the general public.

On the other hand, the school across town where students spent the entire year drilling facts in preparation for the big standardized test would make the headlines. Praise would be heaped on the school when it should be penalized or closed down for wasting young minds.

The more worthwhile the educational aim, the less that's known about how to measure progress toward it. Albert Einstein put it this way: "Not everything that can be counted counts, and not everything that counts can be counted."

The testing tail is wagging the education dog, educators are being jerked every which way, and they can't let go because they'd be accused of not being willing to be held accountable for their work. [Ω](#)

Rethinking schools: Fourth of eight parts

To achieve school reform, clear the roadblocks

March 27, 2000

Of all the obstacles to education reform, none is greater than an inability to "think outside the box." Routines long followed and ideas long held eventually stop being examined and become unquestioned assumptions. When that happens, creativity stops because alternatives to the status quo literally can't be imagined.

That's where we are right now. The views of a few reactionaries notwithstanding, schooling in America has hardly changed at all in more than a century. Put today's kids into pre-World War I classrooms, give them a few minutes to get used to the styles of dress and the furnishings, and they'd feel so at home they'd raise their hands and ask if what the teacher was saying was going to be on the next test. We're doing what we've always done, and each passing decade reinforces the assumption that how things are is how they have to be.

Our failure to tackle the question of what should be the overarching purpose of education stems from our assumption that a purpose isn't necessary. Our vast confidence in and over-reliance on testing stems from our assumption that all important learning can be measured.

Those two assumptions are major roadblocks in the way of reform, but there are plenty of others buried at various depths in our thinking. Some of the more obvious ones:

Things were better in the good old days. Common sense is a surer guide to sound education policy than research. Politicians and business leaders know more about educating than educators. Schools are ideal support systems for interscholastic sports. Teaching is mostly a matter of telling kids what they ought to know. Tougher discipline, ending social promotion, posting the Ten Commandments, permitting official prayer, adopting zero-tolerance policies and other simple strategies will raise the quality of education and have no counterproductive consequences. Someone is to blame for the present situation in education—teacher unions, John Dewey, liberals, conservatives, the feds—someone. “Raising the standards bar” will enable everyone to jump higher. Schools should just “get back to the basics.” Today's or tomorrow's technology will come riding to our rescue. It's more productive to focus attention on minimum collective performance than on maximum individual performance. On balance, grades and standardized tests do more good than harm, and schools couldn't function effectively without them. Before the “standards” fad, teachers didn't have standards. “Learning” means studying and remembering secondhand information in books, lectures and on the Internet. Art, music and other “frills” play no significant part in intellectual development. If all students performed at the level of the best students in the best schools, we would be in great shape.

These assumptions have been around for years, deadlocking school boards and filling letters-to-the-editor columns. More recently, however, one particular assumption has so dominated the reform dialogue it deserves special mention. This is the belief that market-based strategies—competition, vouchers, merit pay, pitting schools against each other, assigning them letter grades, publicizing test scores and so on—will cure what ails education.

True believers in the power of free-market principles need to think more deeply about the matter. Superficially applied to education reform, market forces not only don't do what their supporters say, they're counterproductive. Because they substitute extrinsic for intrinsic satisfaction, they undermine the firmest of all possible foundations of learning.

Learning, like love, is its own reward. It meets one of the strongest of all human needs and therefore pays off in deeply satisfying ways. Substitute extrinsic for intrinsic satisfaction—threaten the teachers and the kids with humiliation if they fail, promise them adulation if they succeed—and love of learning for its own sake dies. Dead.

Love of learning. That's what the education establishment should be selling—not grades, honor rolls, certificates, or getting one's name in the newspaper, not avoiding embarrassment or escaping being grounded because of a low grade. It's human nature to seek answers to questions, human nature to try to satisfy curiosity, human nature to expand awareness, human nature to learn. If kids have to be bribed or threatened to get them to buy what the school is selling, true believers in market principles should begin to realize that the problem lies with the product, not the customer or the salesperson. [Ω](#)

Rethinking schools: Fifth of eight parts

A struggle for schools to think outside the box

April 3, 2000

For more than a thousand years after the second century, the Ptolemaic system “worked.” Ptolemy’s theory—that the Earth was the center of the universe—explained to the satisfaction of all who cared why the sun and moon rose and set and why the stars appeared and disappeared.

But the knowledge returns on Ptolemy’s theory diminished. That the theory couldn’t answer certain questions increasingly bothered those interested in the heavens. Early in the 16th century, the Polish astronomer Copernicus said that Ptolemy was wrong, that the sun wasn’t going around the Earth, that the Earth was going around the sun, and that the reason there was night and day was that the earth was turning on its axis. This single theory gave birth to modern astronomy.

In the 18th century, Sir Isaac Newton formulated the laws of gravity and motion. He described to the satisfaction of all who cared why apples dropped to the ground, why what went up came down, and why objects of different weight fell at the same rate.

But the knowledge returns on Newton’s theory, great as they were, diminished. Its inability to answer certain questions increasingly bothered those interested in such matters. In the 20th century, Albert Einstein advanced the theory of relativity. Modern physics was born.

What Copernicus did for astronomy, and what Newton and then Einstein did for physics, Antoine Lavoisier did for chemistry and Sir Charles Lyell did for geology. They didn’t build on someone else’s ideas; they advanced theories that zipped off in totally different directions.

It’s far past time for that to happen in education. The present theory has maxed out. Its design limitations have been reached. Even heroic investments of effort, time and money will produce only marginal improvements in student performance. A new theory is needed.

Because education, finally, is about what’s taught and learned, a new curriculum theory is the logical place for reform to start. Respected educators have been talking about the need for such a theory for more than a century. Unfortunately, policymakers haven’t been paying attention.

- **Harlan Cleveland:** “It is a well-known scandal that our whole educational system is geared more to categorizing and analyzing patches of knowledge than to threading them together.”
- **Neil Postman:** There is no longer any principle that unifies the school curriculum and furnishes it with meaning, ...”
- **James C. Coomer:** “Our educational systems...are now primarily designed to teach people specialized knowledge—to enable students to divide and dissect knowledge. At the heart of this pattern of teaching is a...view of the world that is quite simply false.”
- **Buckminster Fuller:** “American education has evolved in such a way it will be the undoing of the society.”

In the real world, the world we’re trying to help the young understand, everything connects to everything. We want a pair of socks. Those available have been knitted in a Third World country. Power to run the knitting machines is supplied by burning fossil fuels. Burning fossil

fuels contributes to global warming. Global warming alters weather patterns. Altered weather patterns trigger environmental catastrophes. Environmental catastrophes destroy infrastructure. Money spent for infrastructure replacement isn't available for health care. Declines in the quality of health care affect mortality rates. Mortality is a matter of life and death. Buying socks, then, is a matter of life and death.

Making sense of this simple cause-effect sequence requires not only some understanding of marketing, physics, chemistry, meteorology, economics, engineering, psychology, sociology, political science and a couple of other fields not usually taught in school, it requires an understanding of how all the fields fit together.

Preparing to put a jigsaw puzzle together, we study the picture on the lid of the box. It's the grasp of the big picture—the whole—that helps us make sense of the individual pieces. Formal education doesn't give kids the big picture. It gives them instead a little biology, a little poetry, a little history, a little of this, a little of that, but nothing about how the bits and pieces are connected and reinforce each other. [Ω](#)

Rethinking schools: Sixth of eight parts

The place to begin: Study of beliefs and values

April 10, 2000

The outside-of-the-box thinking that will move education reform beyond tradition, beyond non-existent or superficial aims, beyond fragmented instruction, beyond simplistic assessment, starts with a single idea.

This is that idea: Everything we do, everything we think, stems from our core beliefs and values. Everything the members of other societies think, everything they do, stems from their core beliefs and values.

Trying to make sense of ourselves, each other and the world around us, nothing sheds more light than study of the values and beliefs that shape thought and action. Behind all governments, behind all economies, behind all religions, all social institutions, all industry, all commerce, constructions, art, science, dreams, emotions and histories, lie a few basic societal assumptions. Nothing about which students can know is more important.

A society's basic beliefs and values are its “picture on the lid of the jigsaw-puzzle box,” the “glue” that holds the society together.

Studying the ideas that cause us to think and act as we do might seem to be a subject that's too abstract and philosophical for kids to handle. We like to think we're a practical people, and studying what we now take for granted about ourselves, others, time, place, the “good life,” the supernatural, causation, and a few other matters, doesn't sound very practical.

Don't jump too quickly to that conclusion. What could be more practical for middle-school students than studying, say, the beliefs and values that cause them to pressure their parents to lay out startling amounts of money for shoes or jackets carrying one particular designer label?

Those students have ahead of them a lifetime of high-powered attempts by advertisers to pry chunks out of their paychecks using their beliefs and values as levers. Resisting manipulation and hanging on to paychecks surely ranks fairly high on the practicality scale.

Again: What could be more practical than a study of the differing time orientations of the world's middle classes and the longtime poor?

The middle classes' future-time orientation and the long-time-poor's present-time orientation are major obstacles to mutual understanding and effective policymaking.

Or what could be more practical than a study of beliefs about the rights and responsibilities of ownership?

Differing views of those matters underlie everything from family fights to centuries of conflict between political parties, social classes and nations.

The first step in real reform is to accept that the ancient Greeks knew what they were talking about when they said, "Know thyself." That's the beginning of wisdom. It's also the overarching aim of education, the key to the successful pursuit of every other acceptable aim of education.

Making the study of beliefs and values the main point of general education isn't by any means the whole of reform, but it's the place to begin. Values and beliefs have origins in experience, and those experiences need to be identified and analyzed. That's history. Values and beliefs shape the things humans create. That's the humanities. Values and beliefs determine the course of curiosity, the nature and direction of research and what's considered evidence. That's the basis for the physical and social sciences. Values and beliefs drive every human interaction, smoothing relationships and triggering conflict. That's life.

None of this means that the subjects and courses now offered in schools should be replaced. We've created a way of life that requires specialized expertise. In fact, schools should offer students far more options than they now do. But specialized studies can't be made to add up to what we most need. They've helped us create a nation in which it's relatively easy to make a living, but they've shown us very little about how to make a life.

And the kids know it and show it. They can't put their fingers on what's wrong with schooling, but their actions speak plainly. Laws are necessary to get them inside the walls. Many have to be bribed with grades or threatened with bleak futures or legal action to keep them there. An appalling number drop out at the first opportunity. Learning—the most natural and satisfying of all human activity—loses its inherent appeal for most students sometime during the middle years of elementary school.

Rarely is that appeal regained.

Obviously, what we're doing isn't cutting it. **Ω**

Rethinking schools: Seventh of eight parts

New theory would tap undreamed-of potential

April 17, 2000

Making fundamental changes in education is really hard. Someone once said that it's about like trying to move a Jell-O elephant. Maybe it can't be done. If it can be done, it'll start when those who design curricula scrap the theory that says fields of knowledge are unrelated, the theory that has them believing that an acceptable general education can be assembled from disorganized odds and ends of knowledge.

If, that done, they then think it's logical to replace the discarded theory with one based on our simple, natural approach to learning, they'll come up with something that reads like this:

All the knowledge shared by the members of a society is part of a single framework of knowledge. This framework has five main "parts." These are 1. values and beliefs, 2. the individuals who hold the values and beliefs, 3. the actions that stem from the values and beliefs, 4. the place where the value-and-belief-driven action takes place, and 5. the action's time dimensions. These five are parts of an integrated system that encompasses and organizes all knowledge. Knowledge expands as relationships among the five are discovered.

Accepting a new theory requires what's sometimes called a "paradigm shift." Paradigm shifts are tough, not so much because new ideas are complicated, but because the old ideas they would replace are so taken for granted that it's hard to examine them. New theories are also hard to take seriously because their down-the-road consequences are never immediately apparent. When Copernicus told his neighbors that the movement of the Earth and not the movement of the sun explained night and day, they probably told him that they couldn't see that it made any difference. When Newton told the people in his village that he had discovered gravity, they no doubt told him they already knew that apples fell off trees, and he should go home and take a nap. Many readers of the integrated-knowledge theory will say, "Hmmm. That's just a fancy way of saying that to understand something you need to find out who, what, when, where and why. That's not new. And it's too simple and obvious to be important."

Paradigm shifts are tough, not so much because new ideas are complicated, but because the old ideas they would replace are so taken for granted that it's hard to examine them.

They'll be right on the first count. It is a more elaborate way of saying that "who, what, when, where and why" are important. They'll be right on the second count. It isn't new. It's a "master knowledge filing system" as ancient as language; it underlies all communication, all descriptions and all analyses; and it probably has been passed along to students by teachers for millennia.

But simple-minded it isn't. There's nothing simple about humans, time, place, human action or causation. And there's certainly nothing simple about the interactions and relationships among them. The complexities of those interactions and relationships will challenge the best minds as

long as there are minds to be challenged. Within those interactions and relationships lie all the subjects and courses now taught, and all the subjects and courses that will ever be taught.

The depth and breadth of a general education that begins by deliberately surfacing and examining the beliefs and values that organize our thoughts and actions aren't going to be immediately apparent. Eventually, however, what students will be able to do with a system for organizing and manipulating knowledge that respects the true nature of knowledge and the way their brains handle information will make it obvious that a great deal of what's now happening in our schools is an incredible waste of time.

We don't know what the future holds. We're in the earliest stages of knowing how the brain works. We don't appreciate the part the emotions play in learning. We don't know why different students learn in different ways. We don't know how to adjust for cultural differences. We don't know what role art and music and other “frills” play in intellectual development.

But of this we can be certain: If, in the name of reform, we climb on the simplistic Standards 2000-tell-them-and-test-them bandwagon, we'll lock in rigid place the very problems that brought us to crisis in the first place.

We're only an idea away from creating a general education capable of releasing undreamed-of student potential. The opportunity shouldn't be squandered. [Ω](#)

Rethinking schools: Eighth of eight parts

Education reform: Getting a foot in the door

April 24, 2000

No matter how lofty the goals of bureaucracies, their first priorities aren't high-quality service but self-preservation. This makes them timid and resistant to change. They dread the telephone call, the unexpected appearance of a newspaper reporter or camera crew from the television station. They like keeping a low profile, and defend themselves against criticism by insisting that they were just following the rules.

If there's going to be significant educational change, then, those outside the bureaucracy will have to get involved. Teachers and administrators will need encouragement, support and protection from reactionaries.

Reform begins with a belief that there are serious problems, problems not just in some far-off ghetto school, but in the smoothly functioning school down the street.

That this is the case is surely apparent. America's schools have no agreed-upon purpose. They're preoccupied with memory work to the neglect of all else. They have the testing tiger by the tail and can't let go. They have simplistic conceptions of the meaning of quality. They're ignoring solid research and allowing important shots to be called by politicians and other education amateurs. They have no criteria against which to measure the relative importance of subjects and courses. The nature of knowledge is ignored, as is the brain's need for order and system in learning.

These problems can be addressed by creating a new course of study, one that integrates knowledge in a way we all began learning to integrate it when we were born. For those who want to have a real impact on the quality of education, this is the place to begin. With a clear aim and a sharp focus, it just might be possible to set education on a new course.

The least threatening place to get a foot into reform's door is probably at the middle-school level. Many middle schools already use teacher teams in an attempt to integrate knowledge. Unfortunately, because they're trying to patch together customary fields of study that weren't designed to mesh, the work is hard and success is minimal. At least some teams might welcome the news that every kid already has a sophisticated mental system for organizing and integrating knowledge and just needs to be helped to surface and refine it and begin using it deliberately.

It shouldn't take long to demonstrate that what's now taking all day to do poorly can be done better in two or three hours.

With a big chunk of the school day left over after the general-education requirement has been met, educators could do what they've always said they ought to do: individualize instruction. Students would have worthwhile amounts of time to spend in one or two specialized studies related to their abilities and interests. And because those specialized classes didn't have to be geared down to accommodate kids who should be somewhere else, doing something different, they could move along through math or music, communication or computer programming, philosophy or fashion design, much faster and farther.

It's a start.

Eventually, teachers in elementary schools, trying to increase their students' likelihood of success in middle school, would begin to pay more attention to ways to integrate knowledge. High schools, colleges and universities, faced with a new kind of student, would be pressured to examine their disorganized curricula and offer a coherent general-education program to accompany specialized study. Testing agencies either would have to develop more sophisticated tests or admit that they knew how to measure only relatively simple skills. The whole of formal education would speak so directly to individual and societal needs that growing public understanding and support would be inevitable.

Reform doesn't require new money. This is fortunate because, in education, America doesn't put its money where its mouth is. Neither does reform require changes in facilities, equipment, staffing or laws. Real reform, reform that makes a significant difference in what goes on in kids' heads, starts with abandonment of long-held assumptions about the nature of knowledge.

Discarding old assumptions is, of course, emotionally wrenching. Change---even the *prospect* of change---can challenge and excite. More often, however, it triggers fear, anger, frustration, defensiveness, paralysis.

Confronting and overcoming those emotions and taking individual and collective action is hard. But if we value our way of life, we've no alternative. **Ω**

In schools, how it was isn't how it's supposed to be

Sept. 28, 2000

The school principal is 20 minutes into the phone call from an irate parent. She has just “Yes, but’ed” for the seventh time.

Obviously, the caller hears her “Yes,” but is deaf to the “but.”

She has been at the school for three weeks, long enough to suspect that leaving the principalship of her old school was a mistake.

That school had problems. The building was 60 years old. The retrofitted air-conditioning system blew either too hot or too cold. Faculty had to park on the street, and every year two or three cars were stolen. Worn-out equipment from other schools tended to find its way into her inventory. The most discouraging thing, however, was parent apathy. She often wondered if a free steak dinner and Broadway show would bring them out to a back-to-school night.

The new position was a reward (?) for her accomplishments at the old school. Despite the obstacles, she had steadily raised the respect accorded it. Average daily attendance was above the system average. Teacher turnover was next to lowest. Most important, with the help of two hand-picked counselors, in just six years she had doubled the number of graduates going on to colleges and universities and to the local technical institute.

In recognition, she had been offered and had accepted the principalship of the system's newest high school, a beautiful, incredibly well-equipped structure in the city's most-exclusive suburb.

The caller (the eighth so far protesting the faculty's decision to integrate the school's math and science programs) was telling her that he was no dummy, that he had a master's degree in physics from one of the best engineering schools in the country, that he gave much credit for his success to schooling “organized as it was supposed to be organized,” and that he doubted that he would ever have become vice president of his company if he had attended a school that picked up on every half-baked idea that came down the education road.

It's a problem.

Parental involvement is almost certainly the single most-important factor affecting student performance. Research says so. The grades of the children of immigrants who value education say so. The performance of students whose parents have had to jump through various hoops to get them accepted in a school they've chosen says so.

But as many educators will testify, parental involvement can cut both ways.

Parents who point to their own success as evidence of the superiority of a particular approach to schooling can be a problem.

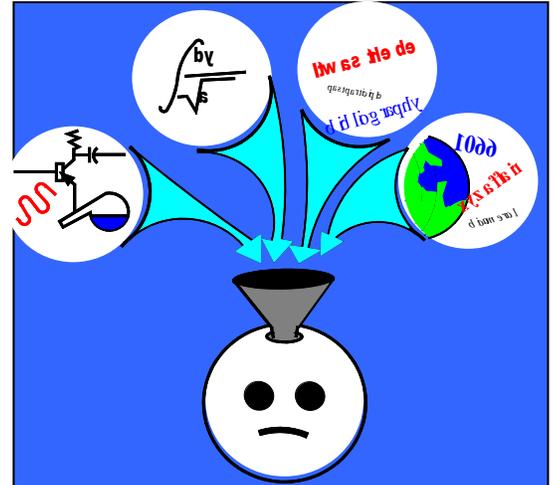
In the words of one teacher, “Some parents treat me the way I suspect they treat their domestic help.”

The challenge isn't to absorb information but to learn how to select, organize and manipulate it.

No doubt about it, education is in crisis, a crisis affecting public, private, charter, parochial and home schools alike.

At its deepest level, the crisis is probably a consequence of our continuing failure to grasp the implications of the scientific era that began in the 17th century. We still harbor the notion that knowledge is handed down by the elders, not something that must be constructed by the individual student. What the young should know, too many continue to believe, is in the textbook, in the teacher's head, in the reference section of the library or on the Internet, and must be moved into the mind of the student. This process, of course, mainly requires the student to shut up, face front, pay attention and take lots of notes.

The assumption is wildly out of sync both with the age in which we live and with what's known about how kids learn. The main challenge isn't to absorb information but to learn how to select, organize and manipulate it. The challenge isn't to store old, secondhand knowledge but to generate new knowledge. The challenge isn't to reinforce the walls around the familiar fields of study but to help students understand and use the fact that all knowledge is part of a single, integrated, mutually supportive framework.



Moving education into the modern era is the most important challenge America faces, and we're not meeting it. Those in leadership positions are either ignoring the challenge, are attempting to shore up the status quo with strident demands for standards and accountability, or are advocating market-based “solutions” that misdiagnose the cause of the problem.

Convincing the successful that how it was isn't how it's supposed to be isn't easy. It may be impossible.

How ironic that the people best equipped to lead, to understand the dynamics of change and to explain the necessity for it are often the most adamant and vocal in their opposition to it. Ω

Good, old days in school? We're mired in the past.

Oct. 19, 2000

In matters educational, a great many people consider themselves expert. It follows, then, that anyone who says publicly that “back to basics” isn't the solution to education's problems is likely to catch a lot of flak.

Perhaps not surprisingly, the flak got pretty thick after publication of my column about the better-educated among us frequently being the most resistant to educational change. Notwithstanding my half-century as a classroom teacher, I seem to have come across to many as “an ivory tower theoretician,” an “elitist,” a “socialist,” an advocate of “unworkable, hare-brained ideas,” a “defender of the progressive education fiasco,” and other “pigs that will not fly.”

Convinced, as we all are, that we're really pretty smart and have turned out rather well, we're predisposed to credit the particular kind of education we happen to have received.

Well, how good was it back then?

I have no first-hand knowledge of education before I entered the picture as a student in the early 1930s. However, this is a matter about which there's considerable research. That research, and materials passed along to me by a school-teaching uncle who covered the first third of the 20th century that I missed, suggest that, nationwide, instruction has changed relatively little during the past century.

Although it's true that educational fads appear every three or four years, people concerned about those fads' negative effects needn't worry much. Rarely do new ideas do more than ripple the surface of the status quo. The "progressive education" movement of the 1920s that many continue to blame for what they see as the sorry state of education was mostly a proposal. "New Math," "New Social Studies" and the other "news" of the 1960s hardly made a dent in classroom instruction. Few teachers were interested, and even fewer were trained to implement the programs.

Meaningful comparisons of quality in an earlier era and now are, of course, impossible. Circulating on the Internet is a copy of an exam given to eighth-graders in Salinas, Kansas, in 1895. Here are the first five questions from the grammar section:

1. *Give nine rules for the use of Capital Letters.*
2. *Name the Parts of Speech and define those that have no modifications.*
3. *Define Verse, Stanza and Paragraph.*
4. *What are the Principal Parts of a verb? Give Principal Parts of do, lie, lay and run.*
5. *Define Case, Illustrate each Case.*

Critics like to ask how many of today's college students could answer those questions satisfactorily. But what can really be inferred from the test?

We don't know what percentage of kids who could have been in the eighth grade in Salinas in 1895 were actually in school. We don't know anything about the kinds of homes and families they came from. We don't know how well those who took the exam actually did. Most important, we don't know whether those who got the best marks were just parroting words they had learned by rote or if they understood the rules well enough to write good letters to newspaper editors, protesting the decline of educational standards.

There are too many variables to allow hard conclusions to be drawn about what works and what doesn't work in education. The curriculum is just one variable of many in schooling, and schooling is just one variable of many in the life of the young. Considering that in any given year most kids spend only a few hundred hours actively being taught, schooling may not even be a very important factor in student development.

My father had stories useful for illustrating general principles. One was about an elderly woman in a mental institution who, every few minutes, picked up her cane and brought it down with a loud "thwack" on the table at which she was sitting.

"Agnes, why do you keep doing that?" a new attendant asked.

She replied, "It keeps the elephants away, dear."

The attendant said, “Agnes, except in captivity, the nearest elephants are thousands of miles from here.”

Agnes smiled and nodded agreement. “Works good, doesn't it?”

Cause-effect relationships are exceedingly complex, even mysterious. In pointing fingers of blame, in presenting our theories about why Johnny can't read or the young cashier has difficulty counting out correct change, a certain humility and tentativeness are surely appropriate. It's possible that abandoning yesterday's educational practices got us into trouble. However, it's far more likely that, because those practices have really changed very little while society has changed a great deal, we're in trouble because we haven't abandoned those practices.

This isn't a very popular position to take. It tends to trigger responses from those who agree with Mark Twain when he said, “I'm all for progress; it's change I don't like.” Ω

The main thing: Trying to decide what's worth teaching

November 8, 2000

Knowledge, it's estimated, now doubles about every five years. Soon, it'll double every four. Then three. Then two...

You might think that thoughtful people would find this explosion of knowledge troubling. Schools are in the knowledge business, which means that decisions have to be made about what is and what isn't important. If knowledge is increasing at an ever-accelerating rate, it follows that decisions about what new knowledge to teach and what old knowledge to dump to make room for the new have to be made with ever-increasing frequency.

So, what procedures are in place for dealing with the dynamic nature of knowledge? How well do the procedures work? Who's in charge? Who put them in charge? Upon what criteria are they basing their decisions? Are their opinions acceptable to the larger society? Are their conclusions filtering down to students in classrooms? How efficiently? Who says so?

If you think there are carefully thought-out answers to questions such as these, the facts will come as a disappointment. There are no procedures—at least no standard, broadly accepted ones—and no one is demanding that any be put into place.

Why?

Because there's time to teach only the tiniest fraction of all there is to know, shouldn't there be mechanisms to assure that the relatively brief time available for instruction is used to maximum advantage?

The problem is obvious. The solution is not. To get a feel for the difficulties, imagine a team of teachers sitting at a conference table, arguing the relative merits of specific topics in their respective fields. Is Mendel's Law more important than Gresham's Law? Should they have their students explore the structure of the novel or the structure of the atom? Is it more important to know how to balance quadratic equations or to know who won and who lost at the Battle of Hastings?

Don't think it all can be taught. That's absolutely out of the question. The team would have to make thousands of similar judgments. If a school's faculty actually met to decide what to teach, the meeting would grind along forever with little or nothing to show for the effort, or else spin so far out of control the participants would be at each other's throats.

It doesn't have to be a problem. What makes an elaborate content-selection process necessary is a mistaken view of education. We've come to think it's about algebra, economics, chemistry, history, biology, civics and so on. It isn't. Or at least it shouldn't be. Education is supposed to be about life—about

understanding one's self and the trends of one's era, about how best to live with each other, about the purpose of quality, about probing the mysteries of our minds and of the universe. Algebra, economics, chemistry, history, biology, civics and all the rest are mere tools, their worth determined by their contribution to understanding life.

What gets taught isn't determined by how much it helps us in our effort to make more sense of life.

We've forgotten that. And because we've forgotten it, we're all over the map. What gets taught isn't determined by how much it helps us in our efforts to make more sense of life. What finally gets taught is either just this year's version of what was taught last year, or else it's a product of political or budgetary competition between academic departments.

Deciding what's important by asking how much it contributes to making more sense of life may seem as difficult as refereeing the competition between different branches of knowledge. It isn't. In the past half century, in many different fields of study, there has been a rapidly increasing appreciation of the importance and broad applicability of the idea of "system." When the idea is applied to human affairs, a way of deciding what's more and what's less important clicks into place: Importance is determined by systemic consequences. What should be taught is what, if it were different, would cause much else to be different.

Trying to decide what's worth teaching, it's hard to imagine a more important or useful idea. Families are systems. Classrooms are systems. Religious congregations, neighborhoods, ethnic groups, ecologies, economies, values and beliefs—all are systems.

The ultimate system is "a way of life."

If we'll accept that understanding our own way of life and the ways of life of others is what matters most, if we'll think of subjects and courses as studies of working parts of these "master" systems, and if we'll base our judgments of the importance of those parts on their contribution to our understanding of ways of life, we'll get our instructional priorities in order. **Ω**

Assumptions teach lesson about school reforms

December 22, 2000

In human affairs, nothing is more powerful than assumptions. Thirty years ago, in an orange grove on what was then the south edge of Orlando, I was given a vivid example of this fact.

In the late 1960s, a vice president and a couple of editors from a major publisher of school textbooks came down to Florida to talk to me about writing a world-cultures textbook and an

American history textbook for adolescents. They wanted, they said, books that were “cutting edge,” books they could market to “the most knowledgeable and thoughtful five to ten percent of educators.”

That meant that the books had to be pretty unconventional. Ordinarily, when students read textbooks, it’s assumed that they’ll use just one mental process--recall. These new books would have to require them to engage in all thought processes—to infer, generalize, classify, relate, synthesize and so on.

In an orange grove on what was then the south edge of Orlando, I was given a vivid example of this fact.

Ordinarily, textbooks deal with matters seen by students as having little or nothing to do with their everyday lives. These new books would have to leave no doubt about the immediate usefulness and practicality of what was being learned.

Ordinarily, textbooks inundate students with thousands of “equal sized” facts, touching on each one briefly and then moving on. These new books would have to focus on a relatively few, very powerful ideas of permanent usefulness that organized and made sense of many seemingly random facts. And they would have to hammer on those ideas from so many angles with so many different kinds of activities there could be no doubt they had become a natural part of the students’ way of looking at the world.

I told executives I’d need some help, and they agreed to put my younger brother on the contract.

The first task was to choose the “big” ideas that would organize the two books. Some of those that made the final cut were patterns, polarization, motivation, autonomy, habitat, social control, system change, and values.

It was in pursuit of instructional materials for the big idea of values and belief systems that took us into a little farmhouse in the orange grove south of Orlando.

We had written to several dozen anthropologists in various parts of the world describing the kinds of materials we had in mind. One of those letters went to an anthropologist in Korea, a Jesuit brother who was teaching mathematics in a small rural school. He told us he thought he might be able to help, that it just happened that his parents lived near Orlando, and that he was coming home in a few weeks for the Christmas holidays. We could, he said, sit and talk directly.

We wrote back, thanking him for his offer and telling him to set the place, day, and time, and we’d be there.

Out of a Christmas holiday evening came his detailed description of an elaborate, three day funeral ceremony for a village elder in rural Korea. The description appeared pretty much verbatim in our world-cultures textbook. Tacked on to the end of his account was a short, two-sentence paragraph: “If a child dies, no funeral is held. The father simply puts the body in a straw bag and, possibly accompanied by one or two male relatives or other men, buries it in some isolated place with no ceremony.”

“How could this be?!” startled students would exclaim when they read the sentences. “These are terrible, insensitive people!”

With that, dialogue among the students about differing belief systems would begin in earnest. Eventually, they'd see that underlying what to them was an unacceptable way of behaving was a deep-seated Korean assumption, an assumption that humanness isn't a given but a learned and earned quality, that babies are born only with the potential to *become* human. Because infants have barely started on the journey toward humanness, the sorrow accompanying their loss, in the traditional Korean view, was much less than it would later be.

In human affairs, nothing is more powerful than assumptions. In the drive to reform education, the most devastating assumption is that education's problems—problems with student discipline, student apathy, teacher burnout, soft public support and high dropout rates—can be solved without major, fundamental changes in the curriculum. Ω

Student brains: Libraries, supermarkets, or junkyards?

January 26, 2001

A system of organization—the alphabetizing of names—makes it possible to find, in a matter of seconds, a phone number in a phone book.

A system of organization—the periodic table of the elements—made it possible to predict the existence of the element germanium before it actually was discovered.

A system of organization—an organization chart—makes it possible to grasp quickly a company's approach to the distribution of human resources.

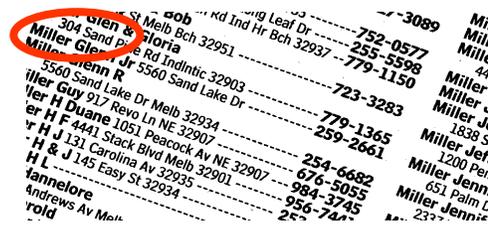
Systems of organization make it possible to find a particular book in the library, a particular kind of cereal in the supermarket, a particular automobile taillight in a junkyard, a particular departure gate for an airplane flight.

We take our systems of organization for granted, but it's no exaggeration to say that it's systems of organization that make civilization possible. For everything from the most mundane action, such as getting a cup from a kitchen cabinet, to the most esoteric research in biology or physics, it's awareness of a system of organization that guides action. The better the system, the more efficient or effective the action will be.

From this it follows that, if we want to improve something, taking a long, hard look at its system of organization is a good place to start.

We want to improve our schools. We should, then, be examining carefully the organizing systems that shape them.

There are plenty of systems to examine. Systems of organization sort students, assign them teachers, set schedules, lay out instructional programs, check on individual and collective



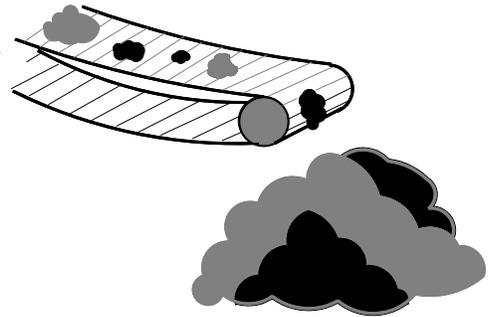
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	48	49	50	51	52	53	54
	Cd	In	Sn	Sb	Te	I	Xe
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performance, establish consequences for success and failure—in short, systems of organization control the educating process from start to finish.

Educators, worried about system effectiveness and under the gun from politicians, policymakers and the general public, constantly fiddle with these systems, experimenting with different ways of sorting students, differing staffing arrangements, different schedules, different ways to measure performance, different strategies for controlling and motivating behavior.

Unfortunately, the one system of organization that gets the least educator attention is the one that's far and away the most important: the student's mental system for organizing knowledge.

Think of the student's brain as library, as supermarket, as junkyard. Then follow the student through the school day, watching and listening, as into that library, into that supermarket, into that junkyard, a conveyor feeds a constant stream of information and dumps it in an unorganized heap. That which we see as essential in every other dimension of daily life—a system of organization—is routinely ignored in the one place where it matters most: in the mind of the student.



In earlier times, when the volume of information was far less, when there was more agreement about what the young needed to know, when there was little awareness of the importance of teaching people to think for themselves, the need for a system for organizing knowledge was less apparent. Then, rote learning worked reasonably well. But we're deep into an information explosion; there's no consensus on the aim of education; and, as several Asian countries have found, an emphasis on rote learning may pay off in high standardized-test scores, but it may do so at the cost of creativity, innovative thinking and undue dependence on authority.

Rote learning, learning in which a system for organizing knowledge is either unnecessary or else is imposed on the student, no longer comes even close to meeting the challenge of educating. What students need now but aren't getting is a comprehensive system for organizing knowledge, a system they understand, a system that allows them to store information and then, days, weeks, months or years later, find it. What makes that possible is a knowledge-organizing system that depends not on memory but on logic. As is evident from how little most adults can recall of what they once learned in school, unaided memory simply isn't up to the task.

For most people, even for far too many educators, this is unfamiliar territory. It's assumed that the main point of schooling is to pass along thousands of answers to thousands of questions.

Wrong assumption. Yes, it's an ancient assumption. Yes, it's the assumption driving much education "reform" legislation. Yes, it's the mainstay of the textbook industry. Yes, it's the assumption that keeps test-makers in business. But it's wrong.

What students need most, what we all need most, is the clearest-possible understanding of the system we used for storing and retrieving what we know. Ignoring that need assures that most of our academic "stars" will continue to be simply those students who happen to have the best short-term memories. [Ω](#)

How do kids really learn?

March 6, 2001

“What did you learn in school today, Johnny?”

“I learned that Mount Everest is the tallest mountain in the world, that Shakespeare wrote Julius Caesar, and that Thomas Jefferson wrote the Emancipation Proclamation.”

“Hmmm. Two out of three. Better pay closer attention tomorrow.”

For those concerned about education in America, these aren't the kinds of questions we need to ask. The big question, the question we should be asking ourselves, is, “How do kids learn, really learn, learn in ways so powerful that what's learned becomes permanently fixed in the mind and ready for a lifetime of use?” Is it mostly a matter of listening and reading, then remembering what has been said or read, or is another, less-obvious process at work?

We lay in a crib, and nothing much happened. We made a lot of noise, and someone picked us up, changed our diaper and gave us something to eat. We had discovered a relationship between a noise and a reaction, and we were smarter.

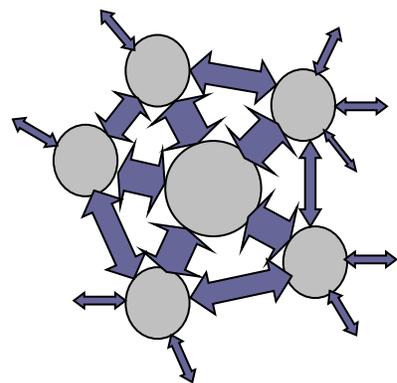
We grew and discovered a relationship between the time of day, our father's mood and the likelihood that we'd get a “yes” if we asked to borrow the car. We were smarter.

We become adults, go into various fields and discover relationships between urban design and crime rates, between age and susceptibility to advertising, between certain additives and cleanness of a fuel burn, between emotions and physical health, between religious belief and reaction to social change, between climatic change and insurance rates, between technology and family instability. We're smarter.

Yes, we learn a little from sitting still and listening. Yes, we learn a little from reading textbooks. Yes, we learn a little from running down a reference or searching the Internet. But most of the insights that guide us through our daily lives don't come from books, lectures, reference libraries or the Internet. They come from variations on that early experience of crying and getting attention—discovering relationships between things we didn't previously think were related.

This relationship-discovering process should be the primary emphasis of classroom instruction. Ordinarily, it's not. In most classrooms, the emphasis is on the comparatively minor, passive, knowledge-absorbing way kids learn. Far less attention is paid to the major, dynamic, knowledge-constructing way they learn.

The costs of this misplaced emphasis are far greater than we think. The costs won't show up on standardized test scores, won't show up on report cards, won't show up in education statistics that politicians are likely to cite to promote their political agendas, but they're a major reason students tune out and turn off. More than anything else, it's standard education's neglect of how kids really learn that leads so many of them to conclude that schooling is mostly a hoop through which they have to jump rather than a life-shaping experience of incalculable value.



Unfortunately, teachers who agree that students learn more from exploring relationships than from having information thrown at them don't get much support. Textbooks and other standard instructional materials aren't designed to encourage the study of relationships between seemingly unrelated aspects of reality. State and local education standards generally emphasize what's already known. Standardized tests reward students who remember what they're told rather than those who have active, knowledge-constructing abilities. Most academic classes ask kids to use just one intellectual ability—the one required to manipulate symbols—and neglect the myriad thinking processes that relationship exploration requires.

Fortunately, instructional resources for the study of relationships are readily available. They're everywhere, and they're free. All it takes to begin to make use of them are teachers who're interested in the complexities of the everyday world, have an ability to ask probing questions, and respect their student's intellectual abilities.

Here are a few examples of kinds of relationship questions: What's the relationship between various arrangements of classroom furniture and discipline problems? Between school design and average energy consumption? Between student television-viewing preferences and reading patterns? Between age distribution and crime rates? Between house design and intra-family interaction? Between favorite games and personality traits? Between school size and dropout rates?

Start students with one or two such questions, and they'll soon be flexing their intellectual muscles, generating their own new questions and extending the horizons of their interests in unexpected directions.

There's an adage: "Give a man a fish and you feed him for a day. Teach him to fish and you feed him for a lifetime."

The adage has a parallel in education: "Give students answers and you'll teach them something. (Maybe.) Teach them how to explore relationships and you'll show them how to teach themselves for the rest of their lives. [Ω](#)

Two very different views about what it means to learn

April 9, 2001

Every Florida public school is required by law to have a School Advisory Council. These councils (SACs) are teams of people representing various segments of the community—parents, teachers, students, administrators, business people and other community members—interested in school improvement.

I'm a community member interested in school improvement, so I subscribe to an Internet "SAC listserv" that allows me and other interested citizens to communicate by e-mail. Because our e-mails go to all subscribers simultaneously, the on-line atmosphere is rather like a continuous public meeting.

Most but not all of the participants in our on-line dialogue are parents. Some, like me, no longer have kids in school but continue to care about the quality of public education. A few participants are connected in one way or another with state government in Tallahassee.

Not surprisingly, a hot topic lately has been the FCAT (the Florida Comprehensive Assessment Test).

One might hope that, as the pro and con e-mails zip back and forth, common ground would be found. In fact, Tallahassee and I have gotten farther apart. To oversimplify just a bit for the sake of brevity:

Tallahassee thinks FCAT-driven accountability was long overdue and a good thing. I think FCAT is a simplistic approach to accountability that shortchanges kids and inevitably will leave Florida's schools in worse shape.

Tallahassee believes that the FCAT test items are fair to all students. I believe there's no way to string words together that treats kids from various social and cultural backgrounds equally.

Tallahassee is convinced that FCAT tells us much that it's important to know about how kids are doing. I'm convinced its narrow emphasis contributes to the neglect of other important and complex intellectual skills.

Tallahassee assures me that committees of teachers and other educators have approved all test items. I argue that those people are products of the same system they're trying to reform and are, therefore, poor judges of what is and what isn't important.

Tallahassee tells me that few teachers are neglecting their subjects in order to concentrate on teaching test-taking skills. I tell Tallahassee that I know better; that, in fact, in some schools big chunks of the curriculum are being set aside to make time for test drills.

Tallahassee thinks it's acceptable to base big decisions about education in Florida on one-shot, high-stakes tests. I oppose big decisions, preferring instead to base policy on the results of local initiatives and experiments that have proven themselves and are then adopted more widely.

Tallahassee is certain that gains in test scores prove that present efforts are working. I'm just as certain that the hype, the tension, the pep rallies and the attention accompanying FCAT have pumped the scores up a bit, but that the gains are superficial and temporary.

I suspect that underlying our disagreements, at the deepest level, are two very different views about what it means to learn. Tallahassee seems to think of kids' heads (as I once did) are rather like big houses with lots of nearly empty rooms. Signs on the room doors state what kind of mental furniture—biology, history, math, and so on—belongs inside the rooms. Kids take their empty houses to school and the teachers and textbooks haul stuff in and try, with varying success, to furnish the rooms.

I don't think that comes even close to describing the process of learning. I think of kids' heads as more like warehouses crammed full of equipment piled to the walls and ceiling in a confused mess. Most kids don't even know what they know, much less how to make the best use of it. And, to complicate enormously the sorting-out-and-using task, they don't yet have names for much of the equipment.

It seems to me that Tallahassee and most people accept the houses-with-empty-rooms theory of educating. Relatively few of us accept the warehouse-jammed-full-of-equipment theory. But if most people are wrong and those of us who are warehouse people are right, then nearly all

present efforts at school reform (including the FCAT) are far off the mark. They're designed to do something better that can hardly be done at all.

The mental-furniture van backs up to the warehouse door and the kid says, "Just leave it out there on the loading dock." For that, we blame the kid.

Wrong culprit. It's the system, folks.

When really good teachers and administrators shake their heads in despair at the notion that the FCAT is an appropriate tool for making them "accountable," understand why.

When they begin checking their retirement status or alternative employment options, understand why. When FCAT time rolls around again and a lot of them are gone, understand why. Ω

Value of history as a subject has been vastly oversold

May 6, 2001

Florida's Legislature has mandated that American history instruction include study of the Declaration of Independence, the Holocaust and the contribution to America of Hispanics and African-Americans.

State Sen. Les Miller doesn't think the last of these is getting the attention it deserves. He wants a separate African-American history course added to the requirements.

Bad idea. State legislatures shouldn't be in the business of mandating the content of history courses.

I appreciate where Miller is coming from. The conventional wisdom is that history is a peculiarly weighty school subject, almost mysterious in its power to mold thought and character. It can, it's believed, provide a "sense of the past," give students powerful role models, contribute to feelings of personal worth and ethnic pride, raise awareness of old wrongs (and prod people to make them right), stimulate patriotism and love of country, and instill a general appreciation of the human condition.

As a longtime teacher of history, a teacher and supervisor of history teachers, a writer of history textbooks, a contributor to history journals, and an ex-member of the nine-member Curriculum Committee of the National Council for the Social Studies, I think the value of history as a school subject—at least history as it's usually taught—has been vastly oversold. If most history instruction has a significant long-term impact on students, I've never seen much evidence of it.

Students in the first high-school history classes I taught are now eligible to draw Social Security benefits. Some are personal friends. I think they'd agree that I was a demanding teacher. I know they remember (because they remind me) that at the beginning of every class I gave a written five-question quiz on the previous night's homework.

But could many of them now pass those quizzes?

Not a chance. (Neither could I.) And if they remember little of the history they once knew, it's hard to make the case that historical study has lasting benefits.

Is it my fault or theirs that they now have so little to show for our effort?

Neither. The typical human brain just isn't capable of retaining for long periods of time the kind of information found in most history textbooks. If I could have those students in class again, I'd accept that fact, and I'd abandon the notion that mere familiarity with long ago events could accomplish the kinds of things that Miller wants to accomplish.

I think I'd say something like this:

"Ignore the old claim that history repeats itself. It doesn't. No event in the present is going to be dependably like any event in the past. So unless you enjoy remembering trivia of the sort that usually appears on quiz shows and standardized tests, don't bother trying to remember the events we'll study. Think of them only as temporarily useful, as things to be carefully examined and then put back in storage in textbooks and encyclopedias.

"Forget the action. Your main task is to try to figure out what values and beliefs caused it. That's far and away the most useful outcome of historical study. Past actions are mere water under the bridge. Systems of values and beliefs are what make humans human, and an understanding of differing systems will serve you well for the rest of your lives. There's no better tool for coping with the kinds of issues lying behind Senator Miler's proposed legislation. In fact, there's no better tool for coping with life.

"That done, we can get to what makes history unlike any of your other school subjects, and what makes its study more important than the study of math or science or anything else. We can begin to explore the most complex question of all, a question central to human survival: What makes beliefs and values endure and what makes them change?

"The question is central to survival because beliefs and values push us to act—to save and to spend, to tear down and build up, to pave and plant, to love and hate, to make war and peace. And then, every one of those value- and belief-driven actions turns right around and changes the world in ways that force a re-evaluation of values and beliefs. Consider, for example, the fact that the values-driven consumerism that makes the American economy the envy of much of the world is rapidly creating an Earth that will make American-style consumerism impossible.

"History, yes, Senator Miller, but a different sort of history, one that directs student attention to the formal study of values and beliefs and their consequences. Would you need a course in African-American history if Americans believed, really believed, what we say we believe, that all people are of equal worth? [Ω](#)

Students' brains: Another road-building project

May 29, 2001

In an earlier op-ed column [Jan. 26, 2001—ed.], I wrote about how dependent we all are on systems of organization. Without them, ordinary matters such as locating a name in the phone book, finding a cup in the kitchen, buying socks in a department store, using the controls on a car's dashboard, would be far more difficult.

The one place where we seem least concerned with a system of organization, I argued, is where it matters most if our schools are to be effective—in students’ minds. In the years it takes to move from kindergarten through high school, total human knowledge, by some estimates, more than doubles. We meet this information-explosion challenge by making textbooks thicker and seat-time longer.

Piling on more information, of course, simply makes the problem worse. It increases confusion, encourages superficiality of thought, and forces students to rely on short term memory. Many, unable to cope, stop trying. Most who stick with it have relatively little to show for their effort a few months or years after the graduation.

I intended to follow the column about the need for mental organization with one about how our brains actually systematize information, but trying to stuff a difficult idea into just a few paragraphs left me struggling.

I’m still struggling. However, here’s a stab at it:

Imagine the brain as a highway system, with ideas as roads. Every student, with the help of parents, friends and school, is engaged in a massive road-building and map-drawing project. Everything the kid knows—really knows—will appear on the map. And everything he or she does, from filling in the bubbles on a standardized test to trying to promote world peace, will be directed by that map, right down to the last detail.

Imagine the brain as a highway system, with ideas as roads.

Good mental maps have certain characteristics.

First, the “idea-roads” crisscrossing the brain will differ greatly in size and traffic load. Big, general ideas like “pattern” and “system” will be superhighways. Small, specific ideas such as “haircut” and “broccoli” will be country lanes. The map will make the differences clear.

Second, the road system will be organized. In biology, for example, the road called “species” leads to the bigger road “genus,” then on to “family,” then “class” and so on, all the way to the superhighway idea called “environment.”

Third, the road system will be integrated. Everything will connect to everything. Disconnected roads can be built, but they soon disintegrate. For example, students can be taught that in Japan, *ha zu ka shi* is part of the *enyro* syndrome. However, because for most of them this idea doesn’t connect to anything already known, it will be forgotten.

Fourth, for healthy people, the road building never stops. As new and old roads crisscross—when ideas intersect—knowledge expands. “Moon” and “tides” are ideas. When someone realized that they intersected, knowledge grew. When a child connects temper tantrums with “timeouts,” knowledge grows.

The learning-as-road-building-and-map-making metaphor suggests certain teaching strategies (and raises, I think, important questions about education in America):

First, it says that big ideas carrying a lot of traffic—ideas that cut across many or all fields of study—need to be identified early and continuously emphasized. We’re not doing that.

Second, it says that new knowledge must connect to something already known. What’s already known is far more likely to come from first-hand experience than from a textbook or lecture.

Third, it says that for a general education, the artificial barriers separating subjects should be removed.

Fourth, it says that the more ideas that intersect, the greater the insight. The question most frequently asked of students shouldn't be, "What do you remember?" but, "What might A have to do with B?"

Finally, it says that the most useful thing kids can be taught is how their knowledge is organized. They can't make use of maps they don't know they have.

The current crop of reformers—those in Washington and in state legislatures pushing simplistic "standards" and high-stakes testing—don't understand the problem. They just want to impose on the young the mental maps they consider superior—their own.

That's an agenda driven either by naïveté or politics. Neither is educationally acceptable. Like the rest of us, kids only trust and use the maps of reality they themselves have drawn.

Reform should concentrate on helping the young surface and refine their mental maps. Nothing else they can study—not reading, writing, arithmetic, not physics, philosophy, nor anything else—will trigger a more powerful explosion of intellect and academic performance. [Ω](#)

Students caught cheating, but who is really to blame?

July 16, 2001

"Gotcha!"

Professor Louis Bloomberg of the University of Virginia probably didn't write that word across the top of the term papers submitted by some of his students a few weeks ago, but he could have. He wrote a little computer program that looked for evidence of an unacceptable level of "borrowed" work. More specifically, the program scanned student papers searching for instances in which six or more words in a row were exactly the same on two or more papers.

And the program found such instances. In fact, it found 122 of them.

Bloomberg says the culprit in the cheating epidemic is e-mail, because it makes it so easy for students to pass work around.

Of course, it isn't e-mail but those 122 students who are in trouble. The university has an honor code, and it demands that students caught cheating be expelled.

The whole matter raises really interesting questions. Why six words? Why not five? Seven? What if Bloomberg's program had looked for work that was basically the same except that slightly less lazy students had changed the word order in sentences, or made use of a thesaurus and found enough synonyms to throw Bloomberg's program off the trail?

One can easily imagine next year's battle of technologies at the University of Virginia, with students devising all sorts of clever ways to confuse Bloomberg's six-words-in-a-row document search program. It's a battle that could continue indefinitely, with Bloomberg gradually increasing the sophistication of his program, and students anticipating his moves and countering them.

Bloomberg says the culprit is e-mail, but he's being kind. Most people think the culprits are the 122 students who copied someone else's words. By enrolling at the University of Virginia, they agreed to play by the rules of the game. They didn't, and they should suffer the consequences.

But I have a different take on the whole affair. I think the culprit is the education establishment.

There's probably not a single reader of this column who hasn't had to write an academic paper of some kind. Called "library" or "research" or "term" papers, a topic is chosen or assigned, the student reads some of what has been written on the subject, translates it into her or his words, tries to spell the words right and keep the margins straight, and turns it in.

I've written my share. When I was a kid growing up in West Virginia, in a poor area with no library, I had an advantage. My parents gave in to a smooth-talking Encyclopedia Britannica salesman and thereby provided me with a source of information not available to most other kids who came out of the hollows and down off the hills to occupy seats in the one-room school I attended.

Today, of course, students with access to computers aren't limited by resources available in the home or library. They can range the world via a few computer keystrokes. (This makes one marvel at the apparent laziness of those UVA students who didn't go off campus to borrow work. That same e-mail that made local sharing so easy could have been used to locate a student on a faraway campus willing to provide, for the price of a few beers, a copy of an already-written paper ready for a signature.)

So, why do I blame the education establishment for the kind of thing that happened at the University of Virginia?

I blame it for perpetuating a simplistic idea of what educating is all about.

Educators who send students off to the library or to the Internet to read what someone else has written and then say it in their own words are asking students to sharpen a skill. However, it's a far lesser skill than the one they should be promoting.

What Professor Bloomberg and other educators should be most concerned about isn't the originality of student words but the originality of student ideas. When students are told to look at expert opinion and write a paper based on it, what they produce has little or nothing to do with their ideas. They're simply turning secondhand ideas into third-hand ideas.

In his 1916 Presidential Address to the British Mathematical Association, Alfred North Whitehead commented about this process. "The secondhandedness of the learned world," he said, "is the secret of its mediocrity."

What Professor Bloomberg and other educators should be most concerned about isn't the originality of student words but the originality of student ideas.

There's an easy way around the problem of cheating on academic papers. Don't send students to the Internet or the library to look and then write.

Send them out into the real world. [Ω](#)

Top-down school reform: Will it be Florida's folly?

Aug. 16, 2001

Rabid dogs. Foreign invaders. Alcohol abuse. Illegal immigration. Potholes. Cancer. Neighborhood crime. An inscrutable God.

Faced with problems, we humans organize—join with others to create governments, armies, corporations, unions, charities, lobbies, bureaus, clubs, religious bodies, cliques, self-help groups.

What makes problem-solving organizations effective, of course, are procedures—procedures for assigning responsibility, keeping people on task, generating enthusiasm, deciding on courses of action, and so on.

Procedures are the key to organizational effectiveness. Get them exactly right and there's almost no limit to what can be accomplished.

But those “exactly right” procedures are, eventually, the major cause of death of organizations. Unless somebody or something gets in the way, procedures that began life as efficient problem-solving actions turn into rituals having little or nothing to do with solving the original problem. (“Fill out this form in triplicate.” “Wake up, it's time to take your sleeping pill.” “Religious services will conclude promptly at 11:30 a.m.” “To hear this message again, press 5.”)

Florida will have all new procedures, but what's the problem the procedures are supposed to solve?

Of course, those within organizations care about them, so if things aren't going well, leaders will come forward to try to get the organization back on track. Convinced that people just aren't trying hard enough, they'll tighten up procedures, write new policy manuals, send out notices of non-compliance, punish procedural lapses.

But nothing much happens. That's because the real problem—the growing gap between new problem and old procedure—hasn't been addressed.

Reformers, in desperation, then take the next step. They set up a new system of organization.

Those who created today's educational organization more than a century ago identified a problem—turning immigrants into Americans. They developed a procedure—a curriculum—to solve the problem.

Years passed. The problem changed, but the procedure stayed the same, so performance declined.

Educators, preoccupied with the standard procedures, knew there were problems but didn't think they were related to the procedures. Politicians didn't understand the problem either, but they blamed teachers and vowed to make them accountable. To that end, "standards" were imposed and tests adopted.

In Florida, the Sunshine State Standards were written, and the FCAT—the Florida Comprehensive Assessment Test—was put in place.

In most parts of the United States, that's how things now stand. However, in Florida, the governor, impatient, moved on to the next step—reorganization. He dumped the Board of Regents and all the rest of Florida's kindergarten-through-graduate-school system of organization and is replacing it with an entirely new system.

Will it work? For the sake of the young, we should all fervently hope so. However, as I wrote in a letter last year to the governor and his Educational Governance Reorganization Task Force, I don't see how it can. The cart has been put in front of the horse. Florida will have all new procedures, but what's the problem the procedures are designed to solve?

The main task is no longer assimilating immigrants. What, then, is it, I asked? Teach students to think? Raise standardized test scores? Prepare students for democratic citizenship? Help them become culturally literate? Teach "the basics"? Facilitate self-actualization? Solve social problems? Build self-esteem? Create informed consumers? Pose "the eternal questions"? Encourage a love of learning? Develop character? Promote inter-cultural understanding? Instill virtue? Explore broad themes? Transmit societal values? Cultivate love of country? Prepare students for useful, satisfying work? Something else?

It didn't make sense to me, I said, to set up a massive problem-solving procedure without first deciding what the problem was, because every problem calls for different procedures.

(They said they'd get back to me.)

Where will the adoption of all-new procedures geared to no clearly articulated problem take us? I don't have a clue. Maybe centralized planning will do for education in Florida what centralized planning did for the Soviet Union—take away the individual initiative that gives the institution what little life remains in it. Maybe the sheer complexity of the task will overwhelm the amateurs now in charge and result in chaos. Maybe what will happen is what usually happens with top-down reform—nothing much. That approach to reform is so remote from the only place where procedure makes a real difference—in the interaction of kids and teachers—it's irrelevant.'

Wherever the new procedures lead, I don't expect high-quality education to follow. **Ω**

This question could change whole course of education

Oct. 30, 2001

“Now what I want is Facts. Teach the boys and girls nothing but Facts. Facts alone are wanted in life. Plant nothing else, and root out everything else. You can only form the minds of reasoning animals upon Fact; nothing else will ever be of any service to them...In this life we want nothing but Facts, sir, nothing but Facts”—**Schoolmaster Thomas Gradgrind in Charles Dickens’ novel, *Hard Times*.**

Schoolmaster Gradgrind has a lot of disciples in the ranks of those who think rigid standards and standardized testing will be the salvation of American education. Educating, they’re convinced, is mostly a matter of moving facts out of textbooks and teachers’ heads and off the Internet and into the minds of students. And “accountability” is mostly a matter of finding out how many of those facts are still in memory at exam time.

Because facts carry so much of the educating load, you might think that all kinds of questions would be asked about them. Responsible teachers do, in fact, raise questions, questions such as “Where did this particular fact come from? Does its source have an axe to grind or a hidden agenda? If so, what’s that agenda? How do you know? Are there conflicting facts from other sources?”

There is, however, a question that isn’t being asked about facts. It’s a question which, if thoughtfully considered, could change the whole course of American education. The question? *Which* facts are worth knowing?

Those in Washington and in state capitals who’re most responsible for steering education in the direction in which it’s now going haven’t felt the necessity for asking that question. They don’t ask it because they think the question has already been satisfactorily answered. In general, they assume that the facts that happen to be in *their* heads are the ones the next generation needs, and they point to their own success as evidence that they’re right.

That the question “Which facts?” is a lot more complicated than most people think is a point I tried to make early in the school year at Gateway High School in Osceola County. I had been invited to talk to a couple of 12th grade International Baccalaureate classes, and I wanted to try to push the thinking of these bright young people “outside the box.”

The students sat in small groups. I asked them to focus their attention on the classroom and what was in it for five seconds. I counted the seconds silently, then told each team to write down facts that were true for that classroom during that five-second interval.

They very quickly realized that the task I had given them was overwhelming. Thousands of facts—in fact, a near infinite number—could be stated about what was true just in that one room for that brief interval. After a few minutes, I told them to stop writing and transfer their lists to the chalkboard.

The current reform movement, with its emphasis on testing “standard textbook knowledge,” is making it less likely that we’ll ever ask the question.

“You quickly came up with this hundred or so facts,” I said, “and you’re telling me that you barely got started. That being the case, what sort of list of facts would be necessary to take in not just one room for five seconds, but, say, the facts for North America since 1492?”

Incomprehensible.

As a society, we’re not asking the critically important question, “Which facts?” The current reform movement, with its emphasis on testing “standard textbook knowledge,” is making it less likely that we’ll ever ask it. (Florida’s “Sunshine State Standards” for grades 6-8 require students to “understand the world from its beginnings to the time of the Renaissance.” No, I’m not kidding.)

Moment by moment, students are being inundated with facts, and schooling merely adds myriad secondhand ones to the flood. That any school course could come within a country mile of “covering the subject” is a ridiculous notion, reinforced by our reliance on textbooks as major tools of instruction.

Facts in isolation are meaningless. Taking away truckloads of them isn’t what students need from schooling. They’ll pick up those that are necessary as life’s situations require them. What kids need is an understanding of how their minds *cope* with facts—selecting, organizing, storing, retrieving, relating, integrating, and applying them to make more sense of life.

They’re not getting that from schooling. But they could. [Ω](#)

If not the FCAT, what?

Dec. 30, 2001

When I rail against the FCAT—the Florida Comprehensive Assessment Test---it’s partly because it ignores higher order thinking skills, partly because it’s culturally biased, partly because it denies the integrated nature of knowledge, partly because it’s contributing to the neglect of important parts of the curriculum, partly because it’s a waste of good money, partly because it provides little useful feedback for students or teachers, partly because its results are being monumentally misused, partly because it focuses attention on minimum rather than maximum performance, partly because it diverts attention from fundamental education reform.

Readers ask, “OK, if not the FCAT, what?”

Fair enough. Understandably, the public wants to know what’s going on in the schools it finances, wants some indicator of relative quality. If not the FCAT, what? How can quality be measured?

Not easily. Get that straight. Not easily. Humans are far and away the most complex of all organisms, and there’s no task on earth more difficult than altering for the better what goes on in their heads (and hearts). Those politicians who think performance can be accurately measured using a single, paper-and-pencil, machine-gradable test should take the FCAT for, say, the 11th grade, and resign from public office if they fail.

The bottom line is that the FCAT simply doesn't sort students and schools in any really useful way.

Assessing quality in education isn't easy, but there are schools that are approaching the task thoughtfully. A few weeks ago I visited Alverno College, a liberal-arts institution in Milwaukee that prepares students for professional careers. It's attended mostly by first-generation college women who come from the Milwaukee metropolitan area. In my opinion, Alverno is doing assessment right. Many years ago the faculty concluded that success in the real world didn't have much to do with how much students could remember of what they'd read in textbooks and heard in lectures. They thought it was important to find out not only what students know, but what they could *do* with what they know. Could they analyze complex, unfamiliar data? Solve real problems? Make sound value judgments? Work well with others? Communicate effectively?

Like other schools, at Alverno they teach subjects and courses. However, it isn't the students' ability to make a grade (they don't use grades) but the ability to perform in real-world situations that counts. To check communications skills, for example, at intervals over the course of their college careers, students are videotaped making public presentations. They and their teachers then analyze the tapes to see what progress is being made and what weaknesses need to be addressed. To check other skills, they periodically bring in hundreds of assessors from local industry, business, government and social institutions.

When I got back from Wisconsin, I found on the Internet 10 secondary schools in England with an experimental curriculum based on the same general assumption. Like Alverno, they teach the usual school subjects, but what they're trying to do is focus attention on student ability to put those subjects to work managing situations, relating to people, manipulating information and being responsible citizens.

It surely doesn't take a rocket scientist to figure out that testing actual performance makes good sense. Who'd willingly submit to brain surgery by a surgeon whose hand had held a pencil but never a scalpel? Who'd settle back comfortably in the seat of a Boeing 747 headed for London knowing that the pilot had never before been in a plane's cockpit or laid a hand on aircraft controls, had merely made a good score on a multiple-choice test?

The FCAT may satisfy those willing to close their eyes to the difficulties inherent in measuring performance, but the bottom line is that it simply doesn't sort students and schools in any really useful way.

What we have in America is a system of education primarily concerned with symbols—words and numbers. As long as standardized tests stick with measuring student ability to manipulate words and numbers, they look impressive. The Scholastic Aptitude Test, for example, “works” because it predicts how well students will do when they're playing college-level word and number games.

But move beyond the symbol games—start trying to find out if students can actually *apply* what they've learned in useful, meaningful ways—and standardized tests aren't up to the task. We simply don't know how to put together something that a machine can score that translates a knowledge of history or physics or music or language into a prediction of real-world performance.

Those highly touted, politically popular school grades that are the product of standardized tests?

They have far more to do with the wealth or poverty of student families than with instructional quality. **Ω**

School tests: A circus

Feb. 6, 2002

In a burst of bipartisanship driven by the conventional wisdom, Congress, as part of the *No Child Left Behind* legislation, has mandated annual tests for reading and math.

Get ready. Get ready for self-congratulatory oratory during coming political campaigns. Get ready for massive promotional campaigns from corporations selling advice, materials and tests.

It's going to be a circus. Educationally, the show won't justify its cost, but it'll generate noise and a lot of money will change hands.

Most people, having spent years at school, will feel they've paid admission to the circus and are qualified, at the very least, to sit in the stands and yell approval or disapproval of what's going on down below. That's the American Way. However, I have a little test I'd like to administer at the circus entrance gate, a test I think might temper somewhat the blind confidence many have in their pet cure for what ails poor readers. It involves listening to a brief account of an experiment, then explaining the experiment's outcome.

Educationally, the show is unlikely to justify its cost, but it'll generate noise and a lot of money will change hands.

Experiment: A fifth-grade art teacher has laid out construction paper on students' desks. When the kids come in, she holds up a folded fan of the sort nearly all the kids have made and asks them if they can make one like it.

"Sure!" they answer. And they quickly demonstrate that they indeed can make a paper fan.

The teacher then passes out more paper and tells the class she wants them to listen carefully to some directions.

From a book, she reads, slowly and carefully, in language appropriate for fifth graders, precise directions for making a folded-paper fan. When she's finished, she tells them to make a fan.

Most can't.

There have been many similar experiments yielding similar results. A study by the Harvard-Smithsonian Center for Astrophysics found that, before classroom instruction about gravity, a little more than 30 percent of adolescents already understood basic concepts. After instruction, the percentage had dropped to 15 percent. Before formal instruction about planetary motion, about 18 percent understood basic concepts. After instruction, understanding had dropped to 8 percent.

What's going on here? The kids knew more *before* they were taught than *after* they were taught!

What's going on is something extremely important and too-little understood.

Reading, we're certain, is the key to everything else, so that's where we think education really starts. Human knowledge is stored in words and numbers, so learning to read words and numbers should open the door to the knowledge storeroom. ("Learn to read, kid!" and then

“Read to learn!”) The learning-to-read sequence, many think, is 1. alphabet, 2. syllables, 3. words, 4. reading, 5. fact absorption, 6. thinking, 7. critical thinking, 8. higher-order thinking.

The evidence says it’s not that simple. Yes, words and numbers do indeed contain humankind’s accumulated knowledge. However, being able to read them isn’t enough. They have to make sense, and that’s a whole other matter.

Here’s what we don’t adequately understand: Before kids can make sense of other people’s words and numbers, they have to be able to turn their own reality into words and numbers.

Read that sentence again. Slowly. Think about it. Learning a new word doesn’t put a new picture in a child’s mind. A new picture (or new version of an old picture) has to come *first*, then a word is attached to it. If there’s no picture, all the arguments about phonics, whole language and so on are irrelevant.

The real problem for most kids? Not enough pictures. Politicians legislate pressure on “slow” students to read, and blame teachers when they can’t, but they do little to support strategies that create the necessary prior experience. Fourth grade is years down the road from that period in a child’s life when exposure to symbol-rich, complex environments most efficiently provides lots of raw picture-constructing material.

Of course, given enough drill, given painful penalties for failure, a reading program can *look* successful. Hammer hard enough, and words may stick in memory long enough to allow the kid to recognize familiar phrases on multiple choice tests. But if reading means making sense of what’s being read, bubbling in a multiple-choice test item correctly doesn’t necessarily prove anything.

What’s the most likely outcome of late-in-the-game, pressure-cooker reading programs and forced retention in grade? Lots of big kids who never learn to read well, hate reading, hate school, drop out as soon as possible, and end up costing society a bundle. Bet on it. **Ω**

Undermine public schools for a steep price

Feb. 26, 2002

Milton Friedman. If you care about quality education, that’s a name you should know.

Friedman is a world-famous, Nobel Prize-winning economist. He taught at the University of Chicago from 1946 to 1976, has been a senior research fellow with the Hoover Institution since 1977, was awarded both the Presidential Medal of Freedom and the National Medal of Science in 1988, is a past president of the American Economic Association, has honorary degrees from universities all over the world, and has written a stack of books.

He has long been active in public affairs. He advised Barry Goldwater, Richard Nixon and Ronald Reagan during their campaigns for the presidency and continued in an advisory role for Nixon and Reagan during their terms in office.

Friedman is a straight talker. You want quality

The real appeal of privatization is the belief that it’ll do the same job cheaper. And it will—for the first couple of years. After that, forget it.

schools? One of his Cato Briefing Papers tells how to get them: “Public Schools: Make Them Private.”

If you want to understand Washington-mandated school reform over the past dozen years, there it is. If you want to understand Tallahassee-mandated Florida school reform during the current administration, there it is.

From the executive summary of “Public Schools: Make Them Private,” here’s classic Friedman:

“I believe that the only way to make a major improvement in our educational system is through privatization to the point at which a substantial fraction of all educational service is rendered to individuals by private enterprises. Nothing else will destroy or even weaken the power of the current educational establishment—a necessary pre-condition for radical improvement in our educational system.”

He continues, “The privatization of schooling would produce a new, highly active and profitable industry...”

Vouchers, competition, the Edison Corporation, Bill Bennett’s K12—those are Friedman’s keys to an education revolution.

This, of course, puts true believers in his theory in a complicated bind. In order to privatize education, you need political power. To get political power, you have to be elected to public office. To get elected to public office, you have to convince voters that you have a plan to improve education.

Of course, *how* you want to do that—by putting public schools out of business—isn’t much of a vote-getter. So, to get elected, you have to come across as a strong supporter of public education.

You do that. And then, since most Americans have great faith in the ability of competition and other market forces to improve human institutions, as soon as you get into office you put in place a school-ranking system based on competitive tests.

If the test scores go up, that’s good. *You* are good.

But if they go down, that’s even better. You can then point out to the voters that you gave reform your best shot, that you brought common-sense market forces to bear on the problem, and the teachers and kids flunked. Obviously, then, public schools are a lost cause *because* they’re public. So, you suggest, privatize them, and watch the new corporate owners deliver real quality.

Happy ending.

Unless you believe, as I do, that quality has almost nothing to do with who cuts the payroll checks. Education’s central problem is a dysfunctional curriculum, locked in place by state legislatures. Corporate interests are even less likely than educators to buck politicized bureaucracies.

Cut to the chase. The real appeal of privatization is the belief that it’ll do the same job cheaper. And it will—for the first couple of years. After that, forget it. After that, after the commercial interests have set their hooks solidly into this half-trillion-dollar-a-year business, after the long-term contracts are signed, after shareholder demands for return on investment kick in, after public education is history and there’s no turning back, watch what happens to costs.

Or maybe not.

To maximize company profits, think out of the box. Steer clear of low-density rural and high-problem inner-city schools. Sell advertising space on textbook covers, bulletin boards, school hallways and school buses at premium prices. To keep personnel costs low, borrow the strategy used by the little Ohio school district where I started teaching. After three years, when the salary schedule calls for a bump up to the “experienced teacher” level, don’t renew contracts.

Start over with a fresh crop of beginners. Ω

What do you do when you don’t know the answer?

March 30, 2002

I’m cleaning out my workshop. When I’m gone, I don’t want my kids going through my stuff and saying, “Now why in the world would he have saved *that*?!”

It’s tough, and I’m wondering if I can go through with it. It isn’t the work I mind. It’s the sense of loss.

I grew up in an era when things that broke could usually be fixed. When the steering got sloppy on the Model A Ford, you just ordered king pins and bushings from Sears & Roebuck or Montgomery Ward, jacked up the car and installed them. When an appliance stopped working, you took it apart and did whatever was necessary. Generally, manufactured mechanical goods were designed to be taken apart and repaired.

What helped in those days was a good collection of miscellaneous junk. If you couldn’t buy the part you needed, there was a good chance you could sort through the junk and find something for at least a temporary fix. Or, with some good tools, you could make the needed part from scratch.

That’s rarely possible now. If something breaks, and you’re lucky, you can snap in a replacement. Often, though, the broken thing is glued, riveted or otherwise made inaccessible. It was *designed* to be inaccessible, *designed* to be thrown away.

So, with the passing years, my boxes and bins labeled “brackets,” “hinges,” “springs” and so on have become less and less useful. There’s no point in going through them and throwing out the least-likely-to-be-used stuff. It’s the boxes and bins themselves that need to be sent to the landfill.

But over the years that have seen the transition from the fixable to the disposable, there’s been a tradeoff. I no longer need a filing cabinet. Everything is on disk. My sound system gives me no static. My dentist gives me no pain. New cars may be thin sheet steel, cast aluminum and molded plastic, but they’re smoother, faster, quieter and safer than would have been thought possible when I was a kid. And they’re just starting to be broken in at mileages that once meant it was time to trade them in.

“In times of drastic change, it is the learners who inherit the future. The learned usually find themselves equipped to live in a world that no longer exists.”

-Eric Hoffer

Still, it's really hard accepting that all the stuff I've been saving, some of it for decades, is no longer of any use. So I can appreciate how some of my readers feel when I say that a lot of those opinions they've stored in their heads since graduation are useless and should be dumped. I could probably agree that they worked well enough to help them get to whatever enviable place in life they now find themselves, but that doesn't prove much of anything. This is today, and today, whether we like it or not, really *is* different.

The late Eric Hoffer—philosopher, teacher, writer and longshoreman—summed up the situation: “In times of drastic change, it is the learners who inherit the future. The learned usually find themselves equipped to live in a world that no longer exists.”

Pay attention to what Hoffer is saying. It's easy to miss its implications.

Consider: It's a well-known fact that what gets tested gets taught. So, what do our standardized tests test? They test what's learned. They ask, “What do you know? What's the answer?” We're trying to create learned students.

But if we're trying to create students who are “learners” rather than merely “learned,” that's the wrong question. Instead of, “What's the answer?” the tests should ask, “What do you do when you don't *know* the answer?” And then, “What do you do when *nobody* knows the answer?”

The educational boxes and bins the current high-stakes testing movement is locking in place are designed primarily to create students who are learned rather than learners. Discarding them is painful. Many people, hung up on some simplistic notion of “accountability,” can't even imagine an educational system functioning without them. But if students are to survive and prosper in an unknowable future, much of what's being taught and tested belongs in the intellectual landfill.

It's the learners who'll inherit the future. Not until our standardized tests ask the right questions will they be worth the time they take away from instruction, and the millions of dollars they cost. [Ω](#)

Most textbooks are a waste of money and paper

May 25, 2002

Change the course of history. That's what a book can do.

Before the signing of the Declaration of Independence, only about a third of the colonists in North America favored separation from England. The pamphlets written by Thomas Paine and collectively called *The Crisis* stiffened Colonial resistance and helped bring on the Revolutionary War.

The Fugitive Slave Act granted Southerners the right to pursue runaway slaves into free states. The law aroused many abolitionists to action, and Harriet Beecher Stowe's action took book form in *Uncle Tom's Cabin*. The characters in her novel—little Eva, Uncle Tom, Topsy and Simon Legree—were memorable and helped convince the public (Northerners, at least) that slavery was inhumane. Stowe didn't start the Civil War, but she helped make it inevitable.

Before the turn of the 20th century, Alfred T. Mahan's *The Influence of Sea Power Upon History* helped propel the arms race in Europe, the United States and Japan that culminated in

World War I. Adolph Hitler's *Mein Kampf* outlined his vision of a future that appealed to economically depressed Germans and pointed that country toward World War II. The roots of Cold War were planted deep in a conflict between ideas advanced in two books—Adam Smith's *The Wealth of Nations*, and Karl Marx's *Das Kapital*.

World-changing books have something in common: They try to get across just one main idea. For the books I've mentioned, it was that English rule over the American colonies was unjust, that human slavery was unacceptable, that sea power is the key to national greatness, that Aryans are the master race and should be in charge of the world, that free economies have corrective measures built into them, that unregulated economies eventually become abusive.

What's true for books that alter the course of history is true for most effective non-fiction. From where I'm sitting, I can read the titles of at least a hundred books--the major themes of which could be summarized in a sentence. A main idea is stated, illustrated, turned every which way, elaborated, argued, defended. Good books are tightly focused.

Which is why most textbooks are a waste of money and paper.

Mathematician, master teacher and philosopher Alfred North Whitehead, in his 1916 presidential address to the Mathematical Association of England, said, "Let the main ideas which are introduced into a child's education be few and important, and let them be thrown into every combination possible. The child should make them his own, and should understand their application here and now in the circumstances of his actual life."

Much of what's happening in today's classrooms spreads information a mile wide but only an inch deep.

That schooling should focus on just a few ideas is a concept that doesn't compute for many people. They ask, "Isn't schooling about getting information into kids' heads?" And isn't the information that needs to be gotten into their heads in the textbook? And isn't the amount transferred from book to head the measure of success?"

That's the conventional wisdom. But as is often the case, the conventional wisdom is wrong.

It's wrong because what counts most isn't information quantity but quality.

Looking around for some simple way to illustrate that much of what's happening in today's classrooms spreads information a mile wide but only an inch deep, I borrowed popular eighth-grade textbooks for math, science, social studies and language arts, and turned to the glossaries. That's where the ideas the authors consider important are summarized.

One-thousand-four-hundred-and-sixty! In less than four hours a day, for less than 180 school days, 13-year-olds are expected to make sense of amniotic, asthenosphere, *laissez-faire*, peristalsis, hyperbole, Kaskasia, presidio, heterozygous, and 1,452 other concepts.

It can't be done. Information overload is the main reason adults remember so little of what they once studied in school. We spend a half-trillion dollars a year on education, and a few years later have so little to show for it that public officials are afraid to take the standardized tests they force on adolescents for fear of embarrassing themselves.

We got into this educational morass—this confusing of educating with preparation for playing Trivial Pursuit—by trying to assemble a general education from specialized studies. We won't get out of it until we accept that what students need most is a grasp of powerful ideas that

cut across, organize and integrate not just all school subjects, but all of life—ideas such as “pattern,” “structure,” “relationship” and “system.”

Dump the textbooks. Think “real world.” We’re graduating generation after generation of students so busy studying trees they can’t see the forest. [Ω](#)

Later comment:

There’s another problem with textbooks that’s important—perhaps more important than the problems I mentioned above. Here’s a quote from our American History Handbook:

“What’s handed to the young in the typical textbook is a collection of conclusions. When there’s an inference to be drawn, the author draws it. If there’s a significant relationship to be noted, the author points it out. If a generalization seems appropriate, the author generalizes. There are no loose ends, no problems, situations, dilemmas, difficulties, or incomplete analyses. The textbook is as refined as the author is capable of making it—but the *author*, not the student, does the thinking.

“It’s a great deal like handing a kid a crossword puzzle with all the squares filled in.”

When the reality being studied is distant in time or space, the alternative to textbooks is primary sources—letters, photographs, art, legal documents, diaries, traveler’s accounts, artifacts, and other “un-interpreted” sources of information. These provide the raw material for investigation and deep thinking by students.

What can a six-year-old and her buddy teach us about learning?

July 7, 2002

I got an e-mail a few days ago from Andras, a friend who lives in a village just north of Budapest, Hungary. Andras teaches probability theory in the math department of a university.

I got to know him, his wife, Mari, and their three daughters when he came to America about a dozen years ago as an exchange teacher. My wife and I have visited him and his now-larger family twice since he returned to Hungary. The second time, we slept in a new room they had just added to their house, one with lots of windows. They call it their “Florida room.”

When Andras arrived in America just before the start of school, his daughter Panni, six years old at the time, was put in a first-grade class in the elementary school nearest their house. Her knowledge of English began and ended with the single sentence: “I love you.”

As might be expected, getting class under way left no time for the teacher to give Panni individual attention. So she did the best she could, given the circumstances. She gave Panni a six-year-old buddy.

There was, of course, no available formal language instruction, no English-Hungarian dictionary, no useable textbook, no worksheets, no oral exercises, no vocabulary lists to study,

no rules of grammar to memorize, no one-on-one with the teacher. There was just Panni, her buddy, and a roomful of first-graders.

Never mind. When we got together during the Christmas holidays, Panni chattered away in English. No trace of an accent, no hesitating for an unfamiliar word, no hint that English wasn't her native language. By the end of the year, the teacher considered her one of her best students.

Panni still speaks English like an American.

A whole philosophy of education could be built on what Panni accomplished.

Our present approach to education could be described as "highly structured." If you're born on a particular day, school attendance is required. If you're born a day or two later, you wait for a year to be enrolled. There's a prescribed curriculum. Ages are matched to grade levels. A minute-by-minute schedule dictates when to work, play, eat lunch, take a nap. Routine says when to sit down, stand up, line up. Deadlines are in place for the mastering of particular skills and for demonstrating knowledge of particular facts. If deadlines aren't met, there are consequences.

From that structure, learning emerges. But do this: Start with what kids learn from school. Subtract what they forget. Compare the total with what they learned on their own just in those first four or so years before formal school began.

Out of the formal, structured experience comes, mostly, some basic skills and the kind of stuff from which multiple choice tests are constructed. Out of the unstructured experience comes everything else, everything from the learning of a difficult language to a working knowledge of an entire way of life. Some of the complexities of that way of life were noted by Robert Fulghum in his essay, *Everything I really need to know I learned in kindergarten*.

I wonder. Do we vastly overestimate the value of structure and routine in learning, and underestimate the value of chaos and complexity? Do chaos and complexity force kids to think, to search for sense-making patterns in the world around them? And is that seemingly haphazard search a major source of intellectual growth?

I don't know the answers, but the questions may deserve a lot more attention than they get. If the answers are "yes," or even "maybe," there are practical implications. It could mean, for example, that the time devoted to classroom work and the time devoted to field trips should be reversed. Maybe on a typical day kids should be outside, poking and prodding the real world and seeing for themselves what makes it tick. Maybe sitting all day in a box passively studying secondhand opinions in textbooks doesn't make as much sense as we think it does. Maybe the classroom should be just a convenient place to visit occasionally to clarify tasks, summarize findings, make presentations to parents, or perhaps pick up checks from local businesses or other organizations in payment for research projects completed and other services rendered.

Less structure? More structure? Which would be better?

I think I know, and it's not the direction in which we're moving. **Ω**

Playing with a purpose

Physical games of skill develop intelligence

Aug. 31, 2002

If you think there's more talk about educational reform than meaningful action, here's a reason: Those who have the power to push reform rarely know much about kids and education, and those who know about kids and education rarely have much power.

Ralph Barrett is in the second category. He knows about kids and education, but he doesn't have much power—at least not the kind that would allow him to change the way “the system” works.

Barrett was Osceola County's 2002 Teacher of the Year [Florida]. He started teaching in 1971, and does his thing at the old Ross E. Jeffries Elementary school in downtown St. Cloud.

His field is physical education, but if that brings to mind a playground whistle blower, forget it. Barrett's “thing” is helping kids create new neural pathways in their brains via physical activity. To put it another way, he helps kids read, write and compute better by having them engage in carefully designed physical exercises.

For Americans, this isn't an easy idea. Unlike many other societies, we tend to see the “self” not as in integrated whole, but as four rather separate selves—mental, physical, emotional and spiritual.

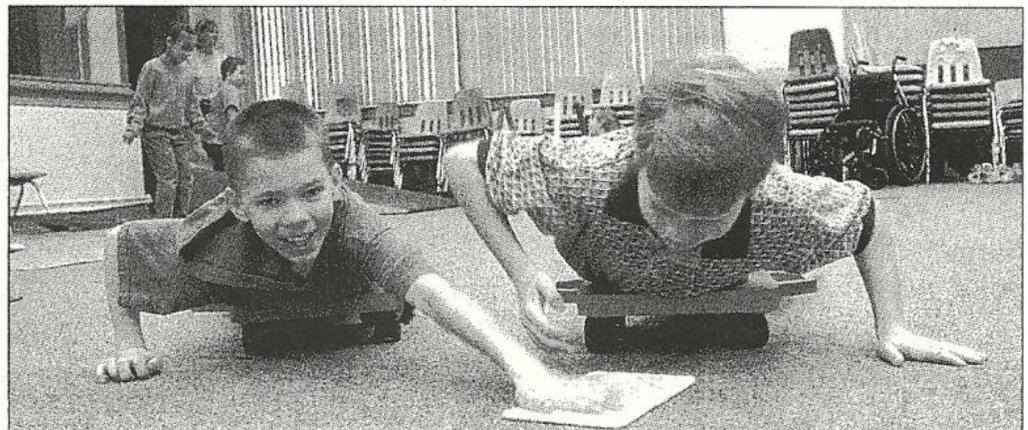
And we don't think there's much of a connection between the four. Teachers work with the mind, doctors and trainers deal with the body, psychologists and psychiatrists troubleshoot emotional problems, and ministers and priests specialize in the spiritual dimension.

Barrett rejects that notion of disconnectedness. Drawing on years of experience, research and in-school experimentation by Dr. Jim Fadigan, a psychologist in Orlando, he engages kids in play.

But it's play carefully designed. Sophisticated, individual analysis of the mental processes kids bring to schoolwork help pinpoint specific intellectual strengths and weaknesses.

Appropriate physical activity can then be “customized.”

What they recommend for kids with learning problems is very different from what usually gets done. The present favored strategy is to increase the academic pressure.



ED SACKETT/ORLANDO SENTINEL (MARCH 2000)

Quick studies. Physical agility increases classroom skills, teacher Ralph Barrett says. Students Lee Napier (left) and Justin Clark scoot around on carts as they participate in one of Barrett's learning exercises in 2000.

“Just do it!” And if it doesn’t get done, it’s assumed that the kids, or the teachers, or both, either aren’t trying hard enough or are using the wrong approach.

Fadigan and Barrett maintain that just trying harder has real limitations, that there are neural “horses” that have to be in place in the brain to pull the intellectual cart. And if those horses didn’t develop during the colt stage (about the first 26 months of life), then working harder—piling more baggage on the cart by holding kids in grade, spending more hours in class, attending summer school, doing more homework, or engaging in other strategies that focus directly on the usual kinds of school work—won’t accomplish much. In fact, doing more of the same thing that resulted in failure in the first place can easily have the opposite of the desired result. If the load becomes too great, the brain may react by shifting away from what it can’t do to something it *can* do—like make trouble.

So Barrett and Fadigan work on helping students’ neural horses develop, using particular kinds of physical and mental activity to pick up where, at an earlier age, development slowed or stopped.

What caused that stoppage? The question is so complex that no one knows for certain. However, they suspect a major factor may be the modern American way of life—a way of life that has kids spending too many hours in infancy staring at the ceiling, too many hours restrained by a walker, too many hours in play pens, too many hours sprawled motionless watching television, too many hours exercising fingers but little else as they play computer games.

An experiment in Kansas suggests they’re on to something. Working with Wichita ninth-graders ranked in the bottom 25 percent of their classes, the program developed by Fadigan resulted in some impressive performances. Based on testing, school officials predicted that about 80 percent of the students would fail at least one of four required courses—English, algebra, introduction to algebra, or world cultures.

Didn’t happen. Focusing attention not just on the four school subjects but also on how kids move and think, not 20 percent but 60 percent actually passed.

All across the country, policymakers are “raising the academic bar,” pushing for more seat time, demanding retention in grade, considering or actually eliminating recess. And piling test upon test.’

As I said: the people who have the power to push reform rarely know much about kids and education.

Fadigan asks, “Isn’t it time we stopped testing and labeling kids and started helping them?”

Ω

Piano lesson holds keys to success in schools

September 21, 2002

Maybe she's still playing the piano and enjoying it. Maybe not. But if she is, she and her mother probably have my oldest son to thank.

He was back from the U.S. Navy. He'd served his hitch as a musician, sometimes playing trombone in big bands, but more often playing acoustic bass or guitar in small combos, backing up touring entertainers.

He hadn't yet gone into the civil-engineering field, and was picking up miscellaneous work ranging from carpentry to filling in at a local music store. He preferred the part-time store job, especially giving music lessons. The pay was poor, but the satisfactions great.

The little girl came in trailing her mother by several steps. She had a book of beginner-level keyboard exercises under her arm and a scowl on her face. The mother explained that, although she herself wasn't an accomplished pianist, playing had always given her pleasure and she wanted that for her daughter. She had, however, about given up. Would someone at the store at least give it a try?

"Sure," said my son. He made some get-acquainted small talk with the 7-year-old, then took her hand and led her to a practice room.

"Do you like that book under your arm?" "No," she answered.

"I didn't think so. Want to pitch it?" my son asked.

"Yes," she said, brightening considerably.

"OK. Put it over there, come sit beside me, and let's try something. I'm going to play a chord—hit a bunch of notes all at once. When I do, you fool around with one finger until you find a note that sounds good to you when you hear it with the notes I'm playing."

There was initial uncertainty, but she found a groove. After several minutes of this he said, "OK. Here's what I want you to do this week. First, put your book in the bench at home and forget about it. Then, I want you to try to make up a little tune. Like this. Or this. Or this."

With one finger, he played three short, funky, unfamiliar little melodies.

"When you have one you like, bring it back ready to play for me next week. Oh, and give your tune a name," he added. "OK?"

He told the mother not to let her spend more than 15 minutes a day at the piano. The mother said she couldn't imagine that keeping her daughter away from the keyboard would be difficult.

I'm sure I've remembered all this because, although my son had few formal music lessons himself, I've long considered his approach to be a useful model of sound education.

First, he did an aptitude check. Watching and listening as the little girl found notes that fit the chords he played, he settled to his own satisfaction that she didn't have a tin ear. If he'd thought that, he'd have gently suggested to the mother that maybe her daughter's talents lay elsewhere, maybe in dance or art or some other field.

That's not how it is in America's schools. Aptitude or lack of it is irrelevant. There's a required curriculum. If you want to graduate, you have to pass, for example, algebra. Period.

Second, he individualized the instructional material. The little girl's tune, not those in her book, was the focus of instruction.

That's not how it is in America's schools. Textbooks are the primary focus of instruction—pre-processed content assembled by publishers with an eye on what they think will sell in their two biggest markets, Texas and California.

Third, he moved her gradually through increasing levels of complexity. When she came back the next week, he wrote out her tune on large manuscript paper, with the title she'd chosen at the top. As the weeks passed, her little tune was elaborated. The single line of melody became a progression of chords—a composition.

Fourth, there were no grades, no gold stars. He relied on intrinsic rather than extrinsic motivation. This was her tune and her increasing elaboration of it, with all the satisfaction accompanying creativity and ownership. She wasn't just taking piano lessons, she was writing music. She was a composer!

Ironic. When it comes to cranking out slogans and bumper stickers about individualism and “doing it my way,” America surely ranks near the top in volume of production. In our schools, however, we demand “accountability” for turning out super-standardized kids.

Go figure. [Ω](#)

Charter schools: Incubators of innovation?

Nov. 13, 2002

Peter Ruddy Wallace, the speaker of the Florida's House of Representatives when charter-school legislation was adopted, saw charters as incubators of innovation and experimentation.

So did I. For a while. Now, I'm increasingly pessimistic about their potential.

I believe America's broad-based system of public schools is a bedrock of the Republic, and that the country is getting a far better return on its tightfisted investment than it deserves. But I also believe that serious problems are being made worse by the simplistic reforms being pushed in state capitals and Washington, and that genuinely fresh thinking about educating is essential. I saw charter schools as places where promising ideas could be explored and those that proved useful moved with greater ease into the mainstream.

With rare exceptions, that's not what's happening.

There are several reasons. Here are three:

Reason One: Innovation and experimentation aren't what motivate most of the people seeking charter approval.

For about three years I subscribed to an Internet “listserv” that gave charter enthusiasts across America an opportunity to chat. It didn't take long to discover where

Legislation originally intended to strengthen public schools is now being used as a sneaky way to privatize them.

most of them were coming from. They didn't want to do anything really different; they just wanted to be in charge.

This doesn't mean that most charter schools don't offer something attractive. They do. That's what gets their applications approved. But "attractive" isn't the same as "innovative and experimental." If what a charter applicant wants to do is a good idea but it's already being done somewhere else, it's not an innovation. What's needed, then, isn't another charter, but a procedure for finding out what's being tried somewhere, sending a team to find out if it's working, and if it is, providing the support necessary to put it in place in a local public school.

Reason Two: Charter schools aren't usually a source of great new ideas (at least in Florida) because most of them are being created not to innovate and experiment but to sell houses. Developers usually know little and care less about educational innovation, but they know that people who buy upscale like the sound of "charter school."

The original Florida legislation said that only local, non-profit groups could get charters. So what do developers do? They create a non-profit organization to get a charter, then the non-profit hires a for-profit company to run the school.

This year in Florida, three out of four newly approved charter schools are being run by companies with practices so standardized they can use the same glossy promotional brochure anywhere in America. They're "McCharters," and they're in the school business not to experiment and innovate but to make money.

Ironic. Legislation originally intended to strengthen public schools is now being used as a sneaky way to privatize them. By taking the final say on charter approval out of the hands of local boards and putting it in Tallahassee, recent state legislation accelerated the privatization trend.

Reason Three: Charter schools aren't usually sources of great new ideas because of standardized, high-stakes tests.

Imagine a close-knit group of experienced educators, unhappy with the status quo, thinking about opening their own school.

They make a list of the student qualities they admire. Yes, they want their students to be knowledgeable, but they also want them to be curious, creative, self-aware, disciplined, empathetic, confident, courageous, resourceful, in love with learning, and possessing what Albert Swhweitzer called "reverence for life."

They devise an appropriate curriculum, apply for and are granted a charter.

Whoa! Collision course.

The state says, "We're giving you tax money. In return, you're accountable. Your students have to take the FCAT—the Florida Comprehensive Assessment Test."

And the educators say, WHAT!?! What's your definition of accountable!? Didn't you give us a charter to help students become critical thinkers, curious, creative, self-aware, disciplined, empathetic, confident, courageous, resourceful, in love with learning, and capable of wonder?"

"Yes."

“And now you’re telling us that the FCAT—a standardized, one-shot, paper-and-pencil, multiple choice, bubble-in-the-oval, machine-scored test of short-term memory—you’re telling us that the FCAT will spit out a number that tells us how we’re doing!? You gotta be kidding!”

The charter school movement was meant to strengthen public education. Unfortunately, the Law of Unintended Consequences strikes again. [Ω](#)

Later comment:

This column, slightly altered and updated, was published in the Washington Post, September 22, 2010 in Valerie Strauss’s Column/Blog: “The Answer Sheet” and was picked up and re-issued by the on-line news & comment service Truthout on October 4th, 2010. In the altered version, I added, near the beginning:

“...I accepted an invitation to serve on the board of governors of a new charter school serving a built-from-scratch new town in a neighboring county. And, partly to enhance my board member-related knowledge and skills, and partly to gather material for *Knight-Ridder/Tribune* columns on the subject of charters, I visited those within reasonable driving distance.”

I discovered, first hand, that innovation was zero priority for this charter school. MB

Reading between the lines: Parents, teachers know best about retention

Dec. 14, 2002

A year or so ago a reader reacted to one of my columns by asking, “How many trees have to die before you’re out of print?” My position on whether or not poor readers should be held back may prompt a lot more people to ask that question.

First, some facts. According to a front-page *Sentinel* story in October titled “Schools aren’t toeing the line on retention,” only 18 school districts in Florida held back 5 percent or more fourth-graders. Two small North Florida districts didn’t retain a single student, and state-wide, of 214,368 fourth graders, only 7,164 were held back.

America has a long history of being concerned about the ability of citizens to read. The Puritans pushed reading because they believed that (a) every person was personally responsible for her or his own salvation, (b) the Bible provided the only true map for getting to heaven, so (c) society had a responsibility for seeing that every kid could read.

The view no longer prevails that the main reason for being literate is to avoid permanent residency in hell, but the pressure is nevertheless great. An inability to read pretty much guarantees a position at the bottom of the social and employment ladder. Any and all pressure to assure “Reading By Nine” for all students therefore seems justified. The pressure could even be seen as an act of kindness.

But maybe there’s a bigger issue here.

What we most want from our investment in education are adults who can, yes, read. But we also want adults who are law-abiding, responsible, trustworthy, reasonable, independent, of good character, with attitudes appropriate for living in a civil and democratic society.

This fact raises a couple of questions: Are these qualities inextricably linked to an ability to read? And if they're not, could strategies being used to try to teach every kid to read at grade level backfire? More specifically, might holding students back actually make them less likely to eventually become the kind of citizens we want and need?

The two questions, I think, are central to the issue of grade retention.

To many on the “flunk ‘em” side of the debate, the teachers and principals who resist retaining students in grade are psycho-babblers tangled up in concern for some vague something called “self-esteem.” But to educators who work daily with real (and therefore very complicated) kids, even if the child’s perception of self is taken completely out of the equation, the question of grade retention is complex.

There is, first of all, the matter of the research on the matter. It seems to say pretty clearly that the most predictable consequence of holding kids back is that they’ll eventually drop out. What’s far more likely to work, the research says, is one-on-one, expert analysis of the reading problem followed by an individualized remedial program.

Grade placement, then, is pretty much irrelevant. An individualized reading program can be put in place no matter the grade level. Whether or not that gets done is mostly a matter of program cost, but many taxpayers don’t want to hear that. It’s cheaper to blame the kids and the teachers.

Of course, in educational matters, research doesn’t cut much ice. When it bangs up against the conventional wisdom, it rarely even scratches the paint. There’s massive research on optimum school size, grading policy, standardized testing, textbook effectiveness, homework, parental involvement, extracurricular activity and much, much else about educating, and it’s routinely ignored. It takes more than solid research to get past the widely shared assumption that all would be well in education if the schools were just more like they were when we ourselves were students.

So, forget research as a guide to whether or not to hold students back. I’m going to approach the matter from a different angle.

My position: Once in a great while, a good case can be made for holding a kid back. But whether or not to do that shouldn’t be decided by state or federal legislators. The only people who’ve spent enough time with a kid to come even close to making a wise decision about the eventual effects of being kept back are the kid’s parents and her or his teachers.

“But,” you say, “their judgment can’t be trusted!”

If that’s what most people believe, we can wave goodbye to America’s future. **Ω**

21 not-yet-answered questions about standardized testing

Jan. 26, 2003

“You can’t fatten a pig by weighing it.”

So goes an old saying. You can, however, find out how well the pig is faring on what it’s being fed. This is the logic behind the important role standardized testing is playing in the current push to improve American education.

The basic reform strategy promoted by the business community and the last three national administrations is simple. First, put pressure on the fifty states to write education “standards.” Second, test to find out how well the standards are being met. Third, rank schools based on the test scores. Fourth, reward the good performers and come down hard on the poor performers.

This commonsense approach to reform appears to be working. It’s wildly popular with the general public, politicians have discovered that, as a vote-getter, the phrase “standards and accountability” ranks right up there with waving the flag and pledging no new taxes, and, yes, average test scores are up slightly.

But do not rejoice. The long-term effects of this “reform” will devastate the young, and therefore America.

Disaster is inevitable. And for a relatively simple reason. Policymakers think educating is about math, science, language arts and social studies. It isn’t. School subjects are just convenient organizers of information. As all effective teachers know, the real challenge isn’t to stuff kids’ heads with secondhand information, but to teach them to think—to draw inferences, generate hypotheses, formulate generalizations, explore systemic relationships, make defensible value judgments, and so on.

Obviously, if the main aim of education is to teach students to think—to infer, hypothesize, generalize, value, and synthesize—then what standardized tests should measure are differences in the quality of student inferences, hypotheses, generalizations, value judgments and syntheses.

That’s what standardized tests should measure. But they don’t. There’s only one thought process that standardized, machine-gradable tests can measure with absolute precision: student recall of secondhand information. Period. That’s useful, of course, but it has little to do with how well students think.

What’s to be done? With both political parties solidly behind the *No Child Left Behind* legislation, maybe it’s too late to do anything. Here and there around the country, however, perceptive citizens are beginning to ask questions: Should the test tail wag the education dog? What are the consequences of focusing on minimum achievement rather than on maximum performance? Are market forces the educational cure-all their advocates believe them to be? How ethical is it for the sellers of standardized tests to peddle test prep materials for those same tests? How wise is it to put the thought processes of the young in the hands of a few corporate lobbyists?

There’s only one thought process that standardized, machine-gradable tests can measure with absolute precision: student recall of secondhand information.

More questions: What of importance do standardized tests predict? How accurately? Should the inevitable cultural biases in such tests simply be ignored? Do vomit-inducing test days affect the development of a long-term love of learning? Is it harmful to attach the blanket “failing” label to schools? To every teacher and student in those schools? What should be the fate of obviously smart kids who don’t perform well under test conditions? Given every standardized test’s wide margin of error, how fair is a rigid cut-off score? Who sets that score? How? What are the unanalyzed costs of replacing free time, physical conditioning, music, art, drama and other similar activity with test prep exercises?

And more questions: Is too much weight being placed on student ability merely to manipulate language? What alternative paths to development are open to students who think in non-standard, innovative ways? What should be done when errors in the grading of high-stakes tests come to light after life-changing consequences have been suffered? Why do “standards” and “accountability” ignore the integrated nature of knowledge? And Question #20: What explains the public’s willingness to buy Washington’s superficial definition of educational accountability?

These are questions thoughtful citizens are beginning to ask. Here’s the big one: *Should the course of American education be set by crude tests capable of measuring only simple, low-order thought processes?*

It’s possible that the question askers will eventually form a critical mass and begin attracting political leadership. If you’re conservative enough to think that locally and democratically controlled public education is a good thing, pray for that. Hard. [Ω](#)

Write this 100 times: Education is ignoring the big picture

April 15, 2003

“American education,” said the late Buckminster Fuller, “has developed in such a way it will be the undoing of the society.”

Reading those words, many may nod agreement. Few, however, are likely to give the same reason as did he for the bleak prediction.

Fuller is probably most frequently remembered as the inventor of the geodesic dome—the lightest, strongest, most cost-effective enclosing structure ever devised. He was an inventive genius, but he was also a college professor, cartographer, philosopher, naval officer, mathematician, poet, researcher, cosmologist, industrialist, engineer, environmentalist, advisor to business and government, the holder of 25 patents, the author of 28 books, and the recipient of 47 honorary degrees.

He aired his view to a group of college presidents in the late 1980s. “What you fellows in the universities do,” he said, “is make all the bright students into experts in something. That has some usefulness, but the trouble is it leaves the ones with mediocre minds and the dunderheads

to become generalists who must serve as college presidents . . . and presidents of the United States.”

Generalists—people who can see the “big picture”—don’t get much respect in today’s world. There is no “Generalists” listing in the Yellow Pages, none are on the faculties of high schools and colleges, and no employment ads request applications from them.

What’s the big picture right now? Intensifying clashes on the “fault lines” between religions, societies and civilizations; an ever-increasing threat of terrorism; a shrinking middle class and a widening gap between rich and poor; the confusing of national power with national greatness; boardroom dishonesty; violence accepted as entertainment; unresponsive, lobbyist-dominated legislatures; great confidence in the world-improving ability of force; tax-evasion and other evidences of a decline in a sense of community and social responsibility; an education system in disarray from ideologically driven policies.

Those are related, big-picture issues. They’re parts of an integrated whole, but what we bring to bear on them are our various specializations—expertise in technology, banking, politics, medicine, law, biology, advertising and so on.

And the problems get worse. We stake our fate on the ability of specialists in one field or another to manage crises as they pop up (“Better living through chemistry”), but the old problems just intensify and are joined by new ones.

That our increasingly specialized educations might actually be a *cause* of problems doesn’t occur to us. We don’t seem to appreciate the potential for chaos resulting from millions of experts doing their thing with little or no understanding of how their actions interact.

Here’s how the education system Buckminster Fuller criticized was shaped, and how it usually works:

- More than a century ago, impressed by the benefits of division of labor and of specialization in industry, a system for educating the young was set up that emphasized specialized subjects and courses. Today’s fragmented curriculum—the ultra-departmentalization of educational institutions, the popularity of magnet schools, the growth of school-to-work programs, and the impatience of most students with courses outside their major fields of interest—reflect our narrow view of the purpose of education.
- The products of our educational system—highly trained specialists—engage in activity that constantly increases the complexity of our way of life.
- This ever-increasing complexity contributes to the ignorance-quotient of citizens in matters outside their specializations.
- Fear, suspicion, escapism, other-worldliness, conspiracy theories, demagoguery and scapegoating grow and feed on each other.
- Lacking a shared body of general knowledge, it becomes increasingly difficult for us to talk reasonably and productively about public policy. We adopt a narrow perspective—a perspective often pre-shaped by partisan politics or some special interest with a hidden agenda—and throw slogans at each other.
- The foundations of democracy grow ever weaker.

We've created—and are maintaining and reinforcing—a system of education that confuses knowledge and wisdom. That system's preoccupation with narrow expertise turns out citizens poorly equipped to think about—and therefore little interested in--the moral and ethical consequences of their actions. Ω

Faulty paint-by-numbers: The approach doesn't add up for schools

May 3, 2003

My wife does volunteer work in a Hospice thrift store. I think she does it because her heart's in the right place, but I suspect that some other motivation is also at work. Digging through the mountains of stuff dumped on the store's loading ramp is a little like shopping, and she likes to shop. She isn't crazy about buying, but she likes to look and touch.

She says volunteering is interesting, and is convinced that anything that will fit through the store's door will eventually show up. When she comes home, "You'll never believe..." are often the first words out of her mouth.

Among the items that sometimes find their way to thrift-store shelves are paint-by-numbers landscapes—works of "art" created by daubing pre-selected paints inside pre-printed spaces on a canvas.

Think of it as a metaphor for what's happening in our schools.

About 15 years ago, politicians and business leaders sidetracked some extremely promising developments in education reform, developments growing out of research on how the human brain selects, organizes and integrates knowledge. In its place, they put together a paint-by-numbers approach to reform. The federal legislation titled *No Child Left Behind*, supported by both major political parties, is the latest salvo from their guns.

Educating, these reformers in corporate offices and legislatures believe, isn't a complicated process. Teaching is mostly a matter of telling, and learning is mostly a matter of remembering. Out of this view comes "standards and accountability." Standards tell the teachers what they're supposed to tell the kids, and accountability in the form of a big, one-shot test, checks to see how much of what they've been told the kids can remember.

Simple. Just follow the directions, and you, too, can be a master teacher. Simple. Just follow the directions, and you, too, can be an artist.

About two weeks ago, I got a copy of a letter sent by Laurin MacLeish, an Orange County Teacher of the Year, to the parents of her students. Read how it feels to be an artist, a real artist, who's been handed a paint-by-numbers kit and told to put away the palette, open the little numbered plastic capsules, and paint, taking care to stay inside the lines.

"Dear Family,

"I must first tell you that your children have given me one of the happiest and most fulfilling of my 32 years of teaching kindergarten. And as parents, you all have been beyond

supportive of our many classroom projects and activities. Our school ‘family’ has been one of the most special ever.

“However, after much thought and deliberation, I have decided that I will not be teaching kindergarten next year. It seems that the profession that I so dearly love has lost much of its validity. Teaching kindergarten is no longer teaching as I know it should be...

“The very roots of early childhood education are founded on leading children on adventures of joyful learning through discovery and exploration, communication and problem solving. These adventures allow time to embrace children as individuals, to acknowledge their unique differences in past experiences and emerging personalities.

“Teaching the ‘whole’ child also encourages the identification and enhancement of individual learning styles, interests and abilities, strengths and weaknesses of all children. Throughout my career as a kindergarten teacher, leading children on this journey has been as joyful for me as it has been for the many children whom I have taught.

“Unfortunately, in a recent attempt to have all children in the state of Florida ‘reading by 9’ this natural bent of developmental learning has been replaced by a ‘one-size-fits-all’ curriculum. A single ‘high stakes’ test score is now measuring Florida’s children, leaving little time to devote to their character or potential or talents or depth of knowledge.

“Not only has this current state of ‘mis’-education filtered down to kindergarten, it now seems to begin in kindergarten. Kindergarten teachers throughout the state are replacing valued learning centers (home center, art center, blocks, dramatic play, etc.) with paper and pencil tasks, dittos, coloring sheets, scripted lessons, workbook pages, etc. Recess has even been taken out of many schools in order to have time for more ‘concentrated teaching.’

“I fear that childhood has now become a race, not a journey. Because I feel so strongly that I was born to be a kindergarten teacher and not a track coach, I am opting to step out of the race...” Ω

High-stakes tests: The dog ate our common sense

May 27, 2003

“You can fool all the people some of the time, and some of the people all the time, but you cannot fool all the people all the time.”

Abraham Lincoln knew what he was talking about. Living proof can be found in Arizona, California, Colorado, Florida, Georgia, Illinois, Louisiana, Massachusetts, Missouri, Nebraska, Nevada, North Carolina, Ohio, and Texas.

It can probably be found elsewhere too, but those are places where people have gone to the trouble of organizing themselves and creating Internet sites to declare their resistance to being conned.

The people in Florida identify themselves as FCAR—Florida Coalition for Assessment Reform. In Ohio they call themselves Parents Against Unfair Proficiency Testing. Those in

Nevada are Citizens For Alternatives to Standardized Test Abuse. In Louisiana, it's Parents For Educational Justice. Massachusetts has several groups, one of which is Student Coalition for Alternatives to MCAS, (better known by its acronym SCAM. The M stands for "Massachusetts" in Massachusetts Comprehensive Assessment System.)

More than 50 Internet sites for organizations opposed to high-stakes testing are listed on the Internet. The members of these organizations have listened to the political blather about educational "accountability" coming from Washington and state capitols, and they don't like what they hear—evidence of a profound disrespect for the young, and ignorance of the complexity of educating. They're fighting the claim that one-size-fits-all, high-stakes, one-shot, machine-graded, standardized tests say something useful about kids, teachers and schools.

The ranks of those who refuse to be taken in by stump speech and bumper sticker political rhetoric about education are growing. When critical voting mass has been reached, it should be entertaining to watch politicians scramble for face-saving ways to distance themselves from many of the policies they earlier helped put in place.

Opponents fight the blight, but they're discouraged by the fact that so many otherwise smart people seem not to realize they're being taken for a ride. And they're discouraged because so many Americans buy syndicated columnist George Will's contention that teachers resist high-stakes testing simply because they're "accountability averse."

There are at least a half-dozen powerful reasons why parents, grandparents, and all others who care about kids and the future of America should join the anti-high-stakes-testing movement. Here, in simple language, is a six-step explanation of one of those reasons:

- The world changes. Non-stop.
- To survive, it's necessary to control and adapt to change.
- To control and adapt, new knowledge must be created.
- Constructing new knowledge requires thinking in complicated ways—remembering, categorizing, drawing inferences, generating hypotheses, generalizing, seeing relationships in seemingly unrelated aspects of reality, making value judgments.
- Of these seven thought processes, only one version of *one* of them is simple enough for a machine-graded test to measure with precision: remembering secondhand information.
- Testing one simple thought process while neglecting six complex others is stupid.

Making life-altering decisions about students, teachers, administrators, schools, school systems and whole states based on a multiple-choice test score is stupider still.

(Unless, of course, the point of it all is to discredit public schooling so thoroughly that the public will demand that responsibility for educating the young be handed over to Edison, Chancellor, and other charter school corporate interests. If that's the aim, then the plan is on track and working beautifully. The head of Maine's public education system estimates that, in seven years, using federal criteria, every school in Maine will be classified as failing.)

For the last dozen years, education “reform” has been in the hands of people in Washington and state capitols who know so little about education they’re not even embarrassed by the mess they’ve made of it. They point proudly to improvements in test scores, as if rising test scores meant rising student achievement.

Decades from now, if histories are still being written, historians telling the story of America around the turn of the 21st Century will write a page or two about the standardized testing fad and the billions of dollars of tax money shipped off to testing companies in the name of education reform. They’ll subtitle it “The Dumbing Down of America.”

If the present trend in education bothers you, talk about it with the most influential people you know. And next election, give local, state and national candidates that sequence of six numbered statements above and ask them where they stand. [Ω](#)

Without change, education system is a sinking ship

Aug. 6, 2003

The Rockland Café bumps up against the sidewalk on the east side of Main Street in Rockland, Maine. It’s a down-home sort of place, not much like most of the restaurants just up the road in the touristy town of Camden. The restaurant’s motto is “Come as a stranger, leave as a friend.”

In the evening, you can choose between Maine scallops, shrimp, clams or haddock for \$7.25. The same, large size, is \$10.95.

Hanging on the north wall of the restaurant is an enormous enlargement of a photograph taken in 1907. It shows the under-construction schooner *Mertie B. Crowley* being launched just south of town. A crowd watches as she slides down the ways into the waters of Penobscott Bay.

What catches your eye about the *Mertie B. Crowley*—and probably explains why the picture is on the wall—is that she has six masts.

What in the world were Rockland’s shipwrights thinking? It’s 1907, for crying out loud, 100 years since Robert Fulton’s steamboat, the *Clermont*, began providing regular commercial service on the Hudson River between New York City and Albany. Just 44 miles down US Route 1 from Rockland is the Bath Iron Works, a company that, by 1907, had been building steam powered ships for years.

Is there a lesson there? Did those Rockland shipbuilders think that doubling the usual number of masts would make sailing ships competitive again and bring back the good old days?

Long-time readers will know there are ideas about education I try, over and over, to hammer home:

- Teachers and students are getting a bum rap. They’re being blamed for the poor performance of a system not of their making and over which they have almost no control.

- No instructional program yet invented (including your favorite phonics program) can erase the differences between kids who show up for kindergarten with a vocabulary of 1,000 words and those who show up with 5,000. That’s a PRE-schooling problem.
- The current test fad is killing real education. Because standardized tests can’t measure the only educational outcome worth measuring—what kids can *do* with what they know—we’re being distracted from the real challenge.
- Learning is natural and therefore satisfying. The best evidence that something is seriously wrong with the current system of educating is that kids are having so little fun.
- There’ll be no significant improvement in student performance until the present separate-subject curriculum is replaced (or at the very least supplemented) by one that reflects the seamless way the brain processes information.
- Every kid’s head is wired differently. We ought to rejoice in that fact and capitalize on it instead of trying to force them all down the same assembly line.
- Those who think choice, competition, privatization and other market forces can significantly improve schools obviously know almost nothing about educating and should be ignored.

When I write about these matters, I know what I’m going to hear from at least a few readers: “There’s nothing wrong with education that couldn’t be cured by bringing back schools like those I attended.” The writers don’t come right out and say it, but the rest of their message is clear: “For proof, just look at how smart I am.”

I read those e-mails and letters to the editor and think about the builders of the *Mertie B. Crowley*. Facing a problem, they apparently assumed that the solution lay in doing what they’d always done, just doing more of it.

I can appreciate nostalgia. I have fairly pleasant memories of the one-room school in West Virginia I attended from grades four through eight. With just 14 or 15 kids in the school, quite a lot could be accomplished. But it’s surely ridiculous to think that the answers to today’s educational problems lie in the past. The posts I get praising the good old days aren’t written with quill pens and delivered by riders on horseback.

What is it that sets education apart from other institutions? Why is it that in just about every other field of human effort, evolutionary improvements are accepted—indeed, expected or demanded—but even relatively minor changes in education are fiercely resisted? Doesn’t it make sense to suppose that, in the face of major societal change, schools have problems not because they’ve abandoned practices that work well, but because they’ve clung to those practices long after they’ve stopped working?

The *Mertie B. Crowley* went down off the coast of Martha’s Vineyard in January of 1910. There’s probably a lesson in that. **Ω**

Closed lids, closed minds

Nov. 30, 2003

The October 10, 1987 *Orlando Sentinel* carried an Associated Press story on page A-3 which began, “TACOMA, Wash - A boy was penned in a coffin-sized box for two years because his step-grandmother feared he was brain-damaged, and when he emerged he was amazed to learn that not all children are shut up in the same way, prosecutors said Friday.”

The kid spent two years in a box. Did he scream to get out? No. Did he feel abused? Apparently not. Was he unhappy? The news item gives no hint that he was. He illustrates, literally, the difficulty of “thinking outside the box.”

The main problem, of course, wasn't the box. It wasn't even locked. The main problem was in the boy's head. He stayed in the box because he was convinced that his situation was right and proper.

We're all bundles of little boxes of unexamined beliefs about what's right and proper.

Lots of those boxes have to do with schooling.

Box: There's such a thing as a “standard” 6-year-old, 9-year-old, 12-year-old. Once this idea is accepted, putting all kids of the same age into slots called “First Grade,” “Second Grade” and so on seems to make good sense. And, once *that* idea is accepted, grade promotion and retention seem to make good sense.

Box: Kids won't learn the multiplication tables (or anything else) unless they're threatened with low grades or promised good ones. Few believe that the satisfaction that comes from doing quality work is a more powerful and lasting motivator than rewards and punishments, threats and promises.

Box: Everything of importance can be measured. Once this proposition is accepted, that which can't be measured—things like curiosity, determination, complex thinking, enthusiasm, intellectual flexibility, creativity, teamwork, a life-long love of learning—stop being important.

Box: Monster schools are an efficient, or at least fiscally necessary, thing. (However, on this one, there's a bit of hope for out-of-the-box thinkers. Americans respect money and admire those who make it. Bill Gates has a lot of money. That he's spending many millions of it in states willing to experiment with high schools enrolling no more than 400 students just might prod a few school boards to join him outside that particular box.)

That's barely the beginning of a list of the mental boxes that keep America's schools stuck in unexamined ruts. School building location and design, textbooks, staffing, lines of authority, funding, schedules, student roles, the curriculum, sports, extra-curricular activities, community involvement—these, for most people, are neatly boxed arrangements and the lids are closed.

There are endless opportunities for fresh thinking in education, but rarely is it welcome. Much of the resistance stems from educator worries about negative public reaction. I used to joke with school principals with whom I worked about their timidity, their fear of the telephone call from a parent or (far worse) from a newspaper reporter. Many would have loved to adopt innovations they knew were solidly researched and would benefit students, but they went to their retirement dinners maintaining the status quo.

There is, for example, a mountain of research about the long-range counter-productivity of assigning letter grades. In *Punished By Rewards—The Trouble with Gold Stars, Incentive Plans, A's, Praise, and Other Bribes*, Alfie Kohn's research reference citations run to 31 pages of fine print. But a principal who pointed to that research and advocated ending the traditional A through F grading system would face a school board meeting packed with outraged citizens.

And face it alone. No delegation of citizens would commend her or him for going where the research leads. No newspaper editorial board would suggest to readers that the use of extrinsic motivators might explain why so few students leave school with a genuine love of learning. No panel of business leaders would make the rounds of civic clubs pointing out that the principal was attempting to bring modern business management principles to bear to motivate students more effectively.

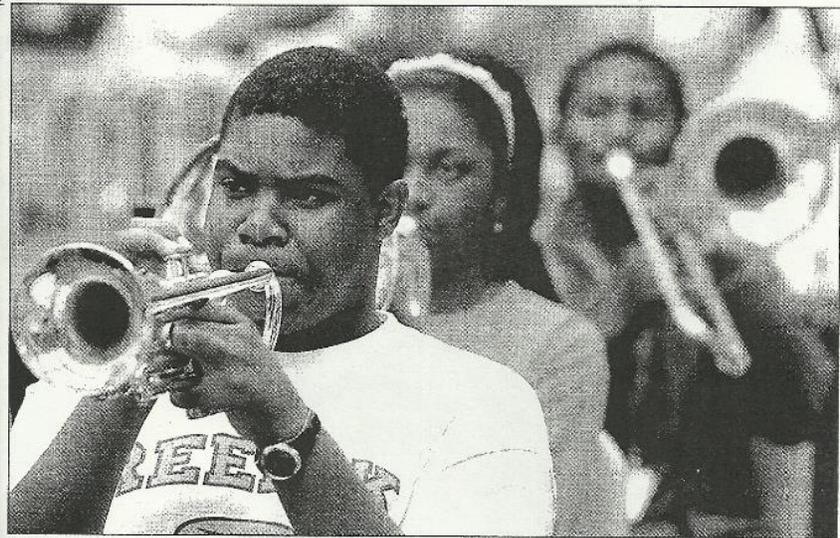
I used to believe that it took smarts to think outside the box. I've come to believe that it isn't primarily a matter of intellect but of emotion. The protesters at that school board meeting will very likely be smarter and better educated than the average citizen. But their demand that the principal be disciplined or fired won't be a product of their having used their heads to thoroughly examine the evidence and study the research. It'll come from their emotional attachment to the intellectual box they're in. [Ω](#)

No students are alike—not in any respect

December 24, 2003

About those Jones High School band members who were allowed to go to New York and participate in Macy's Thanksgiving Day Parade despite their having less than a "C" average...

I had every intention of letting that emotion-arousing issue go by without comment. But then I realized how disappointed readers would be who've come to expect me to defend whatever position is the opposite of common sense. I abandoned my "no comment" intention when nearly all the letters to the *Sentinel* said that letting those kids go to New York was no way to teach them that actions have consequences.



Working hard. The Jones High School band practices on Nov. 12 for the Macy's Thanksgiving Day Parade. Eleventh-grader Kevin Lawrence plays the trumpet. RICARDO RAMIREZ BUXEDA/ORLANDO SENTINEL

I'll get to the band's New York trip. But first, a bit of history.

America's values are planted firmly in Puritanism. It's been almost 400 years since the Separatists began establishing villages around Massachusetts Bay, but their beliefs still shape us.

Education was the key to their influence. Believing that Bible reading was essential, they established schools. They created the first textbook printed in the colonies—the *New England Primer*. It taught hard lessons straight out of scripture. In the *Primer*, “A” stood for Adam: “In Adam’s fall, we sinned all.” “B” stood for Bible: “Thy life to Mend, This Book Attend.” “F” stood for Fool: “The Idle Fool is whipt at School.”

New England produced far more than its share of schoolteachers. As America’s population expanded beyond the Adirondack and Appalachian mountains and continued westward, they went along, carrying Puritan beliefs far beyond their Massachusetts origins.

One of these ideas was that every human is important. God, the Bible said, had “created man in his own image.” He knew when a sparrow died, and had assured humankind that a person is “of more value than many sparrows.” People were so important, God had even taken human form and sacrificed himself to deliver them from evil.

That idea—that all persons are of value—underpins not only most religious belief in America, but the nation’s political institutions, legal system, social-service networks, and much else.

Another powerful lesson that Puritans drew from the Bible was that people were responsible for making something of themselves. Jesus told a little story about a well-off man who, about to take a long trip, gave his servants varying amounts of money while he was gone. When he came back, those who’d increased what they’d been given were rewarded. The servant who merely returned the original amount ended up in big trouble.

The Puritans knew that all people weren’t equally gifted and all didn’t start from the same place, but they believed all were responsible for making the best of whatever abilities they had.

That idea is still so firmly in place in American culture it’s taken for granted. The military-recruiting poster says, “Be all that you can be.”

So, of course, the idea manifests itself in education. Students are told to be all they can be. Vision statements say every student’s potential will be developed. Inscriptions over school entrances or on official documents say the institution is dedicated to “educating the whole child.”

Notwithstanding the good intentions and the flowery rhetoric about individualizing instruction, schools don’t deliver. And if they tried, much of the public wouldn’t like it.

If there’s anything that’s obvious about students, it’s that no two are alike—not in any respect. One is built to run cross-country, another to sprint. A third couldn’t be turned into a runner no matter the training regimen. One kid just naturally “thinks” higher mathematics. Another has trouble with subtraction but has a surgeon’s hands. Another can capture some indefinable quality of image in a quick pencil sketch. And yet another has perfect musical pitch.

Individual differences—differences for which no amount of hard work, determination or anything else will compensate—are in the nature of things. Our cultural heritage says that not only are those differences perfectly natural, they should be respected and nurtured.

We do neither. We arbitrarily elevate certain abilities (in school, primarily those having to do with skill in manipulating words and numbers) and then we say, “If you can’t do *this*, we’re not going to let you do *that*.”

The conventional wisdom and present administrative policies notwithstanding, it's shortsighted to deprive a kid of the hard-earned rewards of one ability to penalize poor performance in another, unrelated ability. Grades and New York shouldn't have been connected in the first place. Ω

Boxed in: Education should be about more than storing facts

Jan. 6, 2004

Blame this column on a truckload of roof trusses I followed into town yesterday afternoon.

Long-time critics of my columns know that one of my favorite subjects is the curriculum. I'm convinced that too much of what kids are made to study is "ritual knowledge," taught not because serious people have given serious thought to its value, but simply because it's been taught for generations. I've sat in enough meetings as a publisher consultant to know first-hand that such is the case. To my question, "Why include this in the book?" the answer has often been some version of "Customer expectations."

Why, other than customer expectations, has algebra come to be a required subject? For me, over the years, what I learned in geometry has been of far greater use. Where are the studies which argue convincingly that, given the differing paths students' lives will take, algebra should be required and geometry not? Or that given the variousness of those paths, either should be required?

My major complaint about the curriculum, however, isn't about whether or not particular school subjects should be required, but about what's emphasized *in* those subjects. This is where mere ritual knowledge is most often evident:

- The world's longest river is _____.
- _____ wrote, "These are the times that try men's souls."
- The chemical symbol for the element potassium is _____.
- A complete sentence should contain a _____ and a _____.

There are literally an infinite number of facts like these for which students can be held responsible, and nobody is sorting out the important ones. Neither is anyone seriously questioning the idea that mentally storing facts is the purpose of educating.

Is it? Well, for Neil Larrimore, Michael Avitzur, Michelle Bergeron, Teddy Nadler and Andy Aaron, knowledge of facts has paid off pretty well. They're the top five money winners on television quiz shows. But for most people, the ability to recall random facts doesn't seem to have much to do with anything else, such as success in a job. One recent quiz show winner, a policeman, has thus far been unable to pass the exam on which his promotion to the next grade depends.

There are all kinds of facts, ranging from useless to critically important. Knowing that the Nile is the world's longest river is almost certainly a less important fact than knowing that, historically, navigable rivers have had much to do with population distribution. That fact, in turn,

may be less important than knowing that the nearest local river is loaded with enough mercury to make eating fish from it a bad idea.

But the whole issue probably doesn't deserve the attention it gets. When, with two or three clicks of a computer mouse, I can find something as trivial as the names of the top money winners on television game shows, I conclude that teaching facts, and tests that make students accountable for remembering those facts, is pretty much a waste of brains.

Which brings me back to that truckload of roof trusses.

Seeing them, I thought of how radically their use had changed house construction. I grew up in old houses with roofs supported by rafters rather than trusses. Rafters made attics big and open. Big attics allowed all kinds of stuff to be stored. They were also great places to play in cold weather. A child playing in an attic and finding, say, a father's First Grade paper showing that he once had trouble writing within the lines will likely think a little differently thereafter about the father. A grandchild, holding up a grandmother's wedding dress and marveling at its tiny waistline, will surely see the now-more-ample grandmother through different eyes.

There may be a relationship between roof trusses and how the young feel about their elders.

I'm not saying that that particular relationship is important enough to teach. It isn't. I'm saying that what IS important—far more important than an ability to recall facts—is the ability to recognize relationships *between* facts. That's where important facts *come* from. Surely, America's future would be safer in the hands of those skilled in recognizing possible cause-effect relationships, than in the hands of those skilled in mentally storing soon-to-be-forgotten facts.

If that contention isn't outrageous enough to arouse the ire of traditionalists, try this: That truck, with its load of trusses, provides more useful raw material for teaching physics, chemistry, biology, mathematics, history and the social sciences than a whole shelf of textbooks. Ω

Ask yourself: What do you want for your kids?

Jan. 28, 2004

I expected to take heat for my recent column arguing that kids shouldn't be deprived of rewards for superior performance in one kind of ability as a penalty for poor performance in another, unrelated different ability. ["No students are alike—not in any respect," *Sentinel*, Dec. 24, 2003] My expectations were met.

But instead of trying to defend myself, let me throw more fuel on that same fire.

Perhaps some readers didn't catch it, but I wasn't just talking about band members. I'd apply the "don't connect grades to extracurricular activities" policy to sports and every other non-academic activity. An "F" in algebra or history wouldn't bench the quarterback or disqualify the head cheerleader.

Surely I'm not serious! Clearly, sports and other extra-curricular activities are the only things that keep many marginal students in school. Take that lever of power away from school authorities and at least some quarterbacks and cheerleaders would never crack a book or take an exam seriously.

True. But what if quarterbacking and cheerleading weren't school-connected?

An appalling idea, right? It would certainly have turned *me* off when I was in school because I never met an extracurricular activity I didn't like. That's the source of just about every one of my really good memories of school.

But hear me out.

What is it we want for our kids?

We want them to be first-rate thinkers, in love with learning and highly motivated. Are we succeeding? Ask the kids. Ask the teachers.

We want them to be healthy and fit. Are we succeeding? Look around the mall, or read health officials' predictions about the probable future incidence of diabetes and heart trouble.

We want them to be first-rate thinkers, in love with learning and highly motivated. Are we succeeding? Ask the kids. Ask the teachers.

We want them to be socially responsible and comfortable in their skins, with a stabilizing sense of community. Are we succeeding? Dropouts, delinquency and drugs, and cops permanently assigned to schools, say we're not.

We want our kids to be able to function in the "real" world—to know about industry, business, politics, law. Are we succeeding? Wrapped up in a land of Oz created by youth-exploiting marketers, many kids know little and care less about the adult world.

We want every kid to be spiritually sensitive and aware. Are we succeeding? What do you think?

We're doing a poor job of meeting the physical, mental, social and spiritual needs of the young. Believe it. Monster schools allow kids with serious emotional problems to get lost in the crowd. Students least in need of exercise are down on the playing field, being watched from the stands by those most in need of exercise. Many of the young have never even *seen* their parents' workplaces, much less know what goes on there. Only the hopelessly naïve believe that hanging the Ten Commandments would turn schools into spiritual centers.

We're spending a lot of money, and we're obviously not getting the job done.

So. What if we took each challenge in turn and did some "outside the box" thinking about it? I have some suggestions:

School is supposed to be primarily about academics, so that's where I'd start. I'd establish a teacher ratio of 15 or 20 to one, with a maximum of 75 to 100 students per school, maybe 200 at the high-school level. I'd house them in the neighborhood, in a house or education wing of a church. I'd help them put together a curriculum that reflected the seamless, highly efficient way kids learn naturally, and I'd have teachers work with half the kids in the morning and the other half in the afternoon.

Responsibility for everything else I'd hand back to the local neighborhood, expecting (after they got used to the idea) a startling variety of creative, appropriate strategies for meeting the physical, spiritual and practical needs of the residents. Sports clubs. Bands and orchestras. Apprenticeships. Workshops for art, drama, music, math, science, religion and other fields for

which there were interest and aptitude. Every class, every workshop, every activity, would welcome all ages.

To those worried that academics were being shortchanged, I'd point to Benjamin Franklin, George Washington, Abraham Lincoln, Albert Einstein, Thomas Edison, Andrew Carnegie, Mark Twain and a host of others who did pretty well with far less seat time. I'd probably argue that less seat time gave them an advantage

Turned off by my suggestions? Make your own. Just don't start with the present system and build on it. What we're doing came from 19th century Prussia, where compulsory education was put in place to make the masses smart enough to keep turning the wheels, but not so smart they'd ask why they were turning them.

No, don't start from the status quo. Start with what you want kids to be and become. Ω

Key to accountability: What are we locking out?

April 22, 2004

Certain words get a free ride. When we read or hear them, they go directly to our emotions without passing through our brains.

"Natural" is such a word. In my local supermarket, it appears in big letters on boxes, bottles, jars, cans and wrappers, helping to sell bread, jelly, peanut butter, baby food, eye drops, hair spray, shampoo, hand lotion, popsicles, ice cream, beans, cake mixes, cookies, cereal, digestive-system fiber, and much else. Fine print may point out that the word refers to only one ingredient, but fine print rarely gets read. If the word helps nudge a product off the shelf and into the grocery cart, it's done its work.

We have many such words and phrases: Lite. Freedom. NEW! Democracy. Competition. IMPROVED! We. Quality. Fat-free. Original. Organic..

Add "accountability" to the list. Attached to "standards," as in the political mantra "standards and accountability," it's successful in the same way that the word "natural" is successful. It goes directly to voters' emotions without passing through their brains.

What does the word really mean? The dictionary isn't much help. It says that one should be accountable for one's acts; we should be responsible; our behavior should be defensible.

Legislators have hung the 'standards and accountability' slogan in the wrong place, and milked it for political advantage long enough.

I don't know any teachers or school principals who reject the need for accountability. What's tearing a great many of them up, and sending some to early retirement, is deciding to whom they should be accountable. Official policy demands one thing; their desire to do what's best for kids demands something else.

Of course, most of those who're currently making education policy don't think that's a problem. They're sure that their demands are identical with what's best for kids, sure that everything important about educating can be measured and the result summed up in a single

number or letter grade, sure, therefore, that *No Child Left Behind*'s requirements for standardized testing, grade retention, school grading, public shaming, and so on are real reforms.

And they've been very successful at convincing the general public that they're right, that their policies are the key to accountability. Those who oppose them—those who point to mountains of contrary research and first-hand experience showing that the new policies are simplistic and will prove to be disastrously counterproductive—get written off as unwilling to be held unaccountable.

There are, however, an increasing number of professionals angry enough to take a stand, and Nebraska's Commissioner of Education, Dr. Doug Christensen, is one of them. Nebraska's schools have a good reputation, and he aims to maintain and improve that reputation. What, then, should one think when he says, "I don't give a damn what *No Child Left Behind* says. I think education is far too complex to be reduced to a single score . . . If it's bad for kids, we're not going to do it."?

Is he refusing to be held accountable? Irresponsible? Self-serving? Or is he seeing "accountability" as something owed to students rather than to politicians whose views are too often skewed by political considerations?

Christensen doesn't think Nebraska's schools are exemplary. But neither does he buy Washington's contention, echoed in most state capitols (with an eye on federal money), that *NCLB* is the key to improvement. He thinks the real problem is that schools really haven't changed much in the last hundred years and need more flexibility to rethink what they're doing and why. He argues that the curriculum lacks clarity, focus, and coherence. He says schools—particularly those above the elementary level—are far too big, aren't sufficiently integrated with the communities they serve, and don't make adequate provision for how kids differ from each other. He thinks student educational experience doesn't flow smoothly from one level to the next, and believes research is a better guide to reform than what often passes for common sense.

Think about Christensen's list of problems. Not a single item on it lies primarily in the realm of teacher or student control and responsibility. Everything he thinks is necessary to improve the quality of schooling requires a loosening rather than a tightening of centralized, bureaucratic control.

Which means that the education-improvement monkey should be taken off the backs of students and teachers and put where it belongs—on the backs of legislators in Washington and in state capitols. They've hung the "standards and accountability" slogan in the wrong place, and milked it for political advantage long enough.

Call or write those legislators. Tell them that Doug Christensen has it right, that more and more of their constituents know it, and you're going to hold them accountable. Ω

Later comment: Perhaps not surprisingly, Dr. Christensen was replaced as Nebraska's Commissioner of Education.

Standardized tests: Beware a rubber tape measure

May 5, 2004

I began my teaching career in the era of low-four-figure starting salaries. Like the other married male teachers at the first school in which I taught, I worked a summer job trying to make ends meet.

Fortunately, I had some construction skills, the required union membership, and a heavy contractor willing to take me on every summer on the first Monday after school was out.

Anyone who's worked around construction knows that inexperienced kids employed as helpers often get initiated on their first day. Sometimes this means being told to go to the tool crib and ask for a non-existent tool—a "left-handed monkey wrench," a "pipe-stretcher," or a "rubber tape measure." If they immediately trot off to do as they're told, they may be in for a rough summer.

"Rubber tape measure."

Next time you read an editorialist or other pundit pointing to standardized tests scores to prove that schools are better or worse, think "rubber tape measure."

A study in England gave a large group of 11-year-olds a series of simple problems in arithmetic. Each problem was worded three different ways.

For example, one problem read, "3 added to 14 makes ____." Ninety-seven percent of the kids knew the answer.

The same problem, worded differently, read, "What number is 3 more than 14?" The number of right answers dropped from 97% to 67%.

A third wording read, "What number is 3 bigger than 14?" This time, 54% got the answer right.

What can be said with certainty about which kids knew what? Was mathematical ability or language facility being tested? Both? And if the answer is "both" for something as straightforward as a simple problem in addition, how accurately is mathematical understanding being measured when the test items get more difficult?

Rubber tape measure.

Several hundred 12 and 13-year-old kids in New Zealand were asked a multiple-choice question about why daylight and darkness occur. Thirty percent bubbled in the right answer. But when they were given a flashlight and a globe and asked to show why it was sometimes day and sometimes night, 68% could do it.

What can be said with certainty about which of those kids knew what? Which—30% or 68%--is a more nearly accurate indicator of understanding? What about those 30% who bubbled in the correct answer? Can we know for certain that none were lucky guesses? Can we know for certain that even those who "knew" the right answer weren't just parroting it from memory and didn't really understand what the words meant?

Rubber tape measure.

The experiments in England and New Zealand involved native speakers of English. Given the problem the experiment suggests, how reliable and useful are math and reading scores coming out of schools attended by kids who grew up using non-standard English? Speaking different languages? Suffering from hearing and sight problems affecting language skills? Struggling with language-related learning disabilities?

Figuring out what's going on inside someone else's brain using nothing but words is an extremely crude "science." When those words are written by adults drawn from a narrow segment of American society, about the content of a curriculum which hasn't been rethought since the 1890s, put in a format that resembles nothing in real life, marketed by a corporation primarily concerned with its bottom line, cheer-led by leaders of business and government whose own houses are obviously not in order, and scored by machines incapable of making subtle distinctions, that crude science turns into a crap shoot.

To make an arbitrary number emerging from that crap shoot the main measure of educational quality is ridiculous. To abandon art, music, recess, and childhood merely to raise that near-meaningless number is child abuse. To tie a kid's future to it is criminal.

The standardized testing frenzy sweeping America is nuts. The variation and complexity of what goes on in the human brain can't begin to be measured by items on standardized multiple choice tests. The testing companies know that, and say so in the fine print. The kind of teachers you'd better hope are teaching your kids know it too, but saying so can get them fired or bring on legal action.

Let me, once again, quote H. G. Wells: "Human history becomes, more and more, a race between education and catastrophe." Ω

Priceless lesson

Teacher, students put learning into action, show what can be done

May 22, 2004

For educators, there ought to be an annual SPOOSE—"Silk Purse Out Of Sow's Ear"—Award. If some foundation will underwrite it, I nominate Chicago's Brian Schultz and his fifth-grade class as its first recipients.

Schultz got in touch with me recently to tell me he thought I'd like what he and his class were doing.

He was right. At a time when many educators, usually under duress, have turned their classrooms into mind-numbing, joy-killing, drill-them-'til-they-drop test-prep factories, Schultz has taken a different approach to teaching reading, writing and arithmetic. And life. He and his students operate out of Room 405 of the Byrd Community Academy. BCA is in Chicago, in a building smack up against Cabrini-Green, the public-housing project with a national reputation for gang activity, drugs, street violence, unemployment and dysfunctional families. Cabrini-Green has all the stuff of which failure is made, and it often delivers door-to-door.

Last December, casting around for something that might actually motivate his students, Schultz asked if there was a problem they'd like to take on. He guessed they'd come up with something like "more choices of drinks at lunchtime."

He was wrong. With all the enthusiasm of youth, they told him the worst problem was their sorry school building. They needed a new one.

They had reasons. The bulletproof glass in classroom windows had frosted over with age, shut out daylight, and rattled in the wind. Room temperatures swung back and forth between the low 60s and mid-80s. Plumbing leaked. Light fixtures were broken. Restroom roaches were aggressive. There was no auditorium, no gymnasium, no lunchroom, no stage, no doors on toilet stalls, no garbage cans. Assemblies were held in a hallway; lunches were eaten in another hallway. There was never enough soap, paper towels or hot water.

The kids were serious. Following a model developed by the national Center for Civic Education, and supported locally by the Constitutional Rights Foundation of Chicago, they put together a plan that wrapped action and academics tightly together. Student inspections of the school identified and documented the nature and seriousness of problems. Letters drafted to the school board, the mayor, central-office administrators and legislators invited them to visit the school and see conditions for themselves. Surveys were designed and administered, and interviews conducted. Photographic and video presentations were prepared and news releases written. A supporters' list was created and follow-up communications suggested ways those outside the local

community could help. Strategies for raising money and public awareness—protest marches, petitions, a strike, bake sales, car washes, and so on—were discussed. Budget information was studied. Internet searches expanded options and understanding. An informative, attractive Internet site was created (www.projectcitizen405.com) The working (and failure to work) of government was observed firsthand.

The project is still under way. Some of the worst problems in the school aren't being addressed, which is a pretty good indication that what the kids want they're not going to get. But from an educational perspective, the project is surely a howling success.



LAMARIUS BREWER/SPECIAL TO THE SENTINEL

Remarkable teacher, remarkable kids. Byrd Community Academy Room 405 students with teacher Brian Schultz (at right, bent over).

For starters, average daily attendance in the class is 98 percent. That's pretty much unheard of in most schools, much less in one like Byrd Community Academy.

What brings the kids to class? Without a doubt, reason No. 1 is Brian Schultz. He's demonstrating the impossible-to-measure impact of a teacher who cares about, listens to, and genuinely respects kids.

Two: One of the most powerful human needs is for autonomy, independence, control over one's actions. The drive is probably even more powerful in kids than in adults. Within the narrow boundaries that traditional schooling permits, Schultz's fifth-graders have autonomy and control.

Three: The kids are out of their seats, dealing with the real world in all its intellectually stimulating complexity. Contrast that with the "sit down, shut up, listen-because-you'll-need-to-know-this-next-year" fare they'd come to expect.

Four: Succeed or fail, what they're trying to do is genuinely important, not merely in the context of schooling, but in the larger world beyond the fence. It's not just getting ready for the next grade, not just a game of simulation, not just preparing for a test, not just jumping through yet another hoop, not just doing what their parents or Schultz wants them to do. It's learning as means to an end—making Cabrini-Green a better place.

The young need reasons they consider legitimate for learning to read and write, and nothing is more legitimate than making a difference in how well the world works. The costs of failing to recognize that fact are incalculable. **Ω**

Later note: *I e-mailed Dr. Schultz to find out how this all turned out. His response:*

In the waning weeks of the student's fifth-grade year, the Chicago Board of Education decided to shut down the Byrd Community Academy. Perhaps not so ironically, the school board cited the reason for closure as low enrollment rather than the shamefully inadequate facilities. Although not regretting their yearlong efforts, the students were understandably frustrated, saddened, and angered by the decision since they had worked long and hard to help their community. Most of the children were transferred to a relatively new building in the neighborhood—one of their identified alternative solutions to getting a whole new Byrd school built. The Byrd facility was no longer used for teaching and learning although the district did use the building for administrative purposes on and off over the past five years...

A handful of the Byrd students, now seniors in high school, have stayed in touch with their teacher. Together, they continue to present at conferences and write in books and journals about their experiences and insights regarding what can motivate and engage city kids in school.

[Dr. Schultz is now Associate Professor and Honors Faculty, Educational Inquiry & Curriculum Studies, Northeastern Illinois University]

How to raise test scores

June 10, 2004

When Robert Pirsig's book *Zen and the Art of Motorcycle Maintenance* was published in 1974, over a period of several years I read it four or five times. I did the same with his 1991 *Lila*. Both touch on many matters, but what interests me most are his thoughts on human values in general and on "quality" in particular.

I dog-ear my books. Turning down the corners of pages makes it easy to go back and re-read, which is what led me yesterday to Pirsig's contention in *Lila* that societies build their beliefs on what they think are facts, but once those beliefs are in place, there's little interest in new facts unless they reinforce old beliefs.

"A contradictory fact," he says, "has to keep hammering and hammering and hammering, sometimes for centuries, before maybe one or two people will see it. And then these one or two have to start hammering on others for a long time before they see it too."

I'm a hammerer (and not-very-patient one) so being reminded that a fact I'm trying to get people to accept may be rejected for centuries is pretty discouraging. It's even more discouraging if you believe, as I do, that continuing to reject the fact will contribute to the decline and eventual demise of America.

No, that's not an exaggeration. Those in today's classrooms will soon be running things, and the quality of their education will have far-reaching consequences. What they don't know, and what they don't do because of what they don't know, will determine the future of the nation. More than likely, given America's power, it will determine the future of humankind.

What's the idea I'm hammering? The same idea Alfred North Whitehead was hammering in 1916 when he told the Mathematical Association of England that school subjects disconnected from each other would be "fatal" to education.

It's the same idea Supreme Court Justice Felix Frankfurter was hammering in 1948 when he wrote that the main thing wrong with American universities was "the curse of departmentalization."

It's the same idea John Goodlad was hammering in 1984 when, following a massive study of America's high schools, he said, "The division into subjects and periods [makes schooling] increasingly artificial, cut off from the human experiences subject matter is supposed to reflect."

It's the same idea which dozens of well-known, respected educators were hammering when, a few years ago, Congress shoved them aside, took over the nation's schools, and legislated the conventional wisdom. The conventional wisdom of the 1930s.

The idea being ignored? The whole is greater than the sum of its parts.

Throwing disconnected, unrelated school subjects at kids may keep them off the streets, may give them some minimal skills, may produce good standardized test scores, but it doesn't teach them how the world works.

That idea is a really tough sell. It's unfamiliar. It isn't logical. To most people, it doesn't seem important. And, if it *is* important, doing something about it is surely someone else's

responsibility. Given all those obstacles, if an integrated curriculum has any chance of making it into classrooms, it probably has to piggy-back on something else—something everyone cares about.

Right now, that “something” that everyone cares about is standardized test scores. If integrating the curriculum promised to raise the scores, it might have a chance.

Raise scores it would. The more kids can remember, the better their scores. Remembering requires a system of mental organization. To be integrated, knowledge has to be organized. Integrating knowledge, then, will improve test scores.

If I’m right, Washington’s pressure on the states to write *separate* standards for each school subject stands in the way of better test performance.

Merely raising standardized test scores is a poor reason for integrating the curriculum, but if that’s a winning argument, your elected representatives need to hear it.

The late Trappist monk Thomas Merton gave us a far more legitimate motive for acting when he wrote, “. . . we break reality into pieces and then wonder why, after we have manipulated the pieces until they fall apart, we find ourselves out of touch with life, with reality, with the world, and most of all with ourselves.”

What discourages experienced teachers is the fact that words of wisdom like those carry less weight with most of the public and the media than a mysterious number created by a secret test.

Ω

*Diversity. Independence.
Decentralization. Consider
how at odds these
requirements are with
current, top-down trends in
education “reform.”*

Sometimes it’s wise to follow the crowd

July 6, 2004

“A camel is a horse designed by a committee.”

Hearing that, generations of Americans have nodded agreement. There’s more than a little ethnocentrism embedded in it, but the main reason the opinion still gets a pass is that it reflects the widely held belief that individual action, far more than collective effort, gets things done.

“Groupthink” is a pejorative term. “Cooperative learning” in the classroom sometimes triggers parental objection. Henry David Thoreau believed crowds sink to the level of their worst members, and Alexander Hamilton wrote that the general population tends to be “turbulent and changing,” and “seldom right.”

Individuals, we believe, are the real movers and shakers of the status quo. They, rather than groups, make things happen. Credit for General Electric’s run of success goes primarily to Jack Welch rather than to the GE organization. Blame for the Enron mess rests on the shoulders of Ken Lay or Jeffrey Skilling. Bill Gates *is* Microsoft. The big game ends with the presentation of the Most Valuable Player award. Our history books picture presidents, admirals, labor agitators,

inventors, heroes, villains. We tend to see these people not as riders on the crests of waves of history, but as creators of those waves.

All of which is probably why, when browsing in my local bookstore, a book titled *The Wisdom of Crowds* caught my eye.

The *wisdom* of crowds!? “Wisdom” just isn’t a word we ordinarily connect with crowds. Crowds are “mindless.” Crowds are “angry.” Crowds are “out-of-control.” Parents tell their kids not to “go along with the crowd.”

But according to author James Surowiecki, crowds are getting an undeserved bum rap. His book’s subtitle is, “Why the Many Are Smarter than the Few and How Collective Wisdom Shapes Business, Economies, Societies, and Nations.” He says crowds are almost always smarter than the smartest people in them.

He makes his case with some fascinating illustrative material, beginning with a 1906 discovery by the British scientist Francis Galton.

Galton, no fan of democracy, was convinced of “the stupidity and wrong-headedness” of most men and women. Societies, he was certain, needed to be guided by the wise few, and those few, he was sure, would be found among the ranks of well-bred aristocrats.

Always on the lookout for concrete evidence to prove his point, Galton thought he’d found an example in a weight-guessing contest at a county fair in Plymouth, England. A live ox was on display. For a fee, fairgoers could bet on how much the ox would weigh when slaughtered and dressed.

About eight hundred people paid the fee and put their guesses on slips of paper. Some were farmers with useful experience, but most were just ordinary people with sixpence and a willingness to gamble.

When the contest was over, Galton got the organizers to give him the tickets. He arranged them in order and calculated the “mean”—the weight halfway between the highest and lowest guesses.

To his great disappointment, the weight for the dressed-out ox was 1,197 pounds. In fact, the ox weighed 1,198 pounds. The crowd, made up of what he considered stupid and wrong-headed people, was off by one pound.

Surowiecki stacks up the examples—pinpointing on the floor of the Atlantic the location of the lost submarine *Scorpion*; audience guesses on the television show “Who Wants to Be a Millionaire?”; the functioning of the Internet search engine Google; the stock market’s accurate, near-instantaneous placing of blame for the Challenger disaster on one contractor, Morton Thiokol. And so on.

He doesn’t claim that every crowd will be wise on every matter. Crowd wisdom hinges on three characteristics, characteristics which surely have vast implications for both education and democracy.

The first key to crowd wisdom is diversity. Crowds made up of experts on a particular issue, he says, are rarely wise because they tend to think too much alike.

The second key to crowd wisdom is independence of thought. Individuals who are parts of a crowd need to just be themselves and resist going along with the majority.

The third key to crowd wisdom is decentralization. Important decisions need to be made locally, by individuals with specific, firsthand knowledge.

Diversity. Independence. Decentralization. Consider how at odds those requirements are with current, top-down trends in education “reform.”

If there’s any hope for education and the democracy dependent upon its quality, shouldn’t editorialists abandon their fixation on standardized test scores? Should they not instead demand dynamic, diverse curricula promoting creativity of thought capitalizing on the brains and abilities of teachers and students? [Ω](#)

Seeds of change: Blaming gardener won’t get rid of weeds

Aug. 7, 2004

“Accountability” is the monkey on the back of school administrators and teachers. Should other backs be sharing the load?

San Francisco doctor Mark D. Filidei, summing up research, says millions of kids under six are exposed to lead in paint, plumbing, and pesticides. Lead levels in the body, he says, contribute to learning disabilities, hyperactivity, aggressive behavior, temper tantrums, fearfulness, and attention-deficit disorders. Children with high levels are much more likely to drop out of school, and even exhibit criminal tendencies. Mercury is worse than lead, and airborne particles of it reached their all-time peak about the time today’s 10-year-olds were born.

There’s a monkey on the back of school administrators and teachers, but perhaps other backs should be sharing the load.

Who should be held accountable for learning problems caused by heavy-metal contamination?

A study of second-graders by Gordon Shaw, a physics professor at the University of California Irvine, found that musical training affects brain functioning and increases the likelihood of success in school. In his experiments, as little as four months of piano lessons improved certain math skills such as working with fractions and proportions. Exposure to music apparently meets a brain-development need.

Who should be held accountable for failure to provide musical instruction to all students?

Typing a few words into Google brings a bundle of research about relationships between physical conditioning—muscle strength, body fat, flexibility, cardiovascular endurance and so on—and the kinds of brain functioning necessary for learning. Although schools which cut out recess and “phys ed” to devote more time to test preparation should have some explaining to do, getting kids in shape has never been considered the schools’ main job.

Who, then, should be held accountable for the physical conditioning of America’s young?

Orlando Sentinel editors recently cited research saying there's a strong relationship between toddlers' TV exposure and learning problems. The more time spent staring at the tube, the greater the likelihood of problems.

Who should be held accountable for excessive TV viewing?

Between 1940 and 1990, the US population shot up from 132 to 249 million. In that same 50 years, the number of public schools went from 200,000 down to 62,000. Do the math—132,000 fewer schools serving 117 million more people!

Common sense and research agree that schools where principals and teachers know every kid and something about each one's family situation are superior. Bill Gates is so convinced of that fact his foundation has given millions to encourage the building of schools with 300 or fewer students.

Who should be accountable for today's monster schools? And how acceptable, finally, are the reasons given for continuing to build them?

Three of every four high school students work more than fifteen hours a week, many far longer. Studies say the work places themselves often contribute to depression, poor self-esteem, tension, fatigue, insomnia, illness, a greater likelihood of drug and alcohol use, higher rates of delinquency, loss of parental control, and other conditions affecting academic performance.

Who should be accountable for this problem? To say it's the kids' choice vastly oversimplifies the issue.

It's pretty hard, educators say, to teach a parade. Americans move a lot, and take their school-age kids with them. The better-off are usually following the job market; the worse-off are often trying to stay ahead of the rent collector. Whatever the reason, about 35% of moved-around kids are more likely to fail a grade, and about 77% are more likely to have behavior problems.

Who should be held accountable for how America's economy often works?

Increasingly, county and municipal officials across America are taking on education reform. If they're to be more successful than Congress and state legislatures have thus far been, these are matters they should keep in mind: Quality teachers, yes. But also: Lead. Mercury. Music. Physical conditioning. TV exposure. Gigantic schools. Teen-age work demands. Population mobility.

And neglected sight and hearing problems. Non-native language speakers. Cultural deprivation. Class size. Highly transient student populations. Sneaky manipulation of school performance statistics. Political agendas.

And that unappreciated, never-addressed but critically important matter I hammer on constantly—a curriculum not rethought since the 1890s, changes in which the public invariably fights.

Education advisory groups of local opinion leaders and power brokers are a great idea. But if they come at the challenge in the same way as Congress and state legislatures—if they ignore the myriad *causes* of poor performance, choosing instead to blame educators—nothing will change except the propaganda. [Ω](#)

Later comment:

Bill Gates gave up his early support for small schools, concluding school size didn't make much difference. And it usually doesn't, if school size is changed but everything else remains unchanged. If, for example, it's assumed that kids learn from sitting passively and listening to teacher talk, school size makes no difference. With an amplification system, it's as easy for a teacher to talk to a thousand kids in a lecture auditorium as it is to talk to four or five sharing a table.

He also judged "success" using standardized test scores. Think about that.

How to waste genius

October 17, 2004

There's an interesting theory about the decline and fall of the Roman Empire. It wasn't too much sin that did it in, says the theory, but too few trees. Feeding Rome's fireplaces, baths, ovens and kilns required massive amounts of wood. As local supplies dwindled, its increasing cost gradually undermined Rome's economy.

Energy—whether from human muscle, oxen, horses, wood, coal, oil, hydrogen, sun or whatever—is every society's engine. Energy's form, amount, accessibility, ownership and cost shape ways of life, standards of living, social structure, political power, international relations.

The modern world's major energy source, of course, is oil. Opinions differ about how much of it is still in the ground, but everyone agrees that sooner or later the wells will run dry.

However, being Americans, that doesn't worry us. We're sure that long before that happens, science will come to the rescue with limitless alternative sources of energy.

Faith in the ability of science to solve problems—find a replacement for oil, make daily life more comfortable, explain how the natural world works, help us live longer, and so on—is based on faith in something else, and not everyone seems to make the connection. That "something else" is education. There can't be good science without good scientists, and there can't be good scientists without good science education.

Notwithstanding the bad press American education routinely gets ("dismal" is a favorite word of newspaper reporters) the prizes, awards, patents and recognition collected by American scientists are pretty impressive. From 1951 to 2004, Americans won 191 of the 342 Nobel Prizes awarded in medicine, physics and chemistry. That's 56% of the total! Just the other day, Americans won six of the eight Nobel Prizes for science achievement.

At least *some* American science teachers must be doing *something* right.

And they are. But I have a suggestion for helping them be even more productive—nothing new, just a commonsense idea that's been around forever, along with a reminder that commonsense and bureaucracy often have little or nothing to do with each other.

Some kids can sing—a few really well. Others can't carry a tune, and couldn't even if offered a chance to sing back-up for their favorite band. A few kids can run a less-than-five-minute mile. But most can't, and couldn't even if doing so earned them their choice of any pair of sneakers in the store. There are kids who can paint an image well enough to peddle it. Most, however, can't produce anything beyond refrigerator-door quality.

There's no mystery in this. No two kids are alike. Accepting that fact, parents don't encourage a tone deaf daughter to pursue a career in music, don't expect the ten-minute miler to get a college scholarship in track, don't pay big bucks for art lessons for an artistically challenged son. On the other hand, the right instruction at the right time for the right kid eventually puts her or him on the stage in Carnegie Hall, in contention for an Olympic medal, or collecting a four- or five-figure commission for painting a portrait or book jacket.

No two kids are alike. But we have a system for educating them in academics that ignores that obvious fact. It's mindless, and it's costing us big bucks. Worse, it's wasting time and talent on a monumental scale.

Pick a school subject—algebra, literature, chemistry, history, whatever. No matter the one you pick, in any random student population it's likely that no more than one kid out of, say, 30 or so will have a brain that can really run with that particular subject.

How do our schools handle that fact? Ordinarily they either ignore it or offer generalized gifted or Advanced Placement classes. So 29 kids get dragged through fields of study for which they have little or no aptitude and often even less interest, while simultaneously holding back the one student with real potential.

There is, of course, a level of general knowledge of math, the physical and social sciences and the humanities which all citizens should share. Such a course should be required, and it shouldn't be geared to college but to life in the real world. That could be accomplished in about three hours a day, leaving the rest of the time for working with individuals or small groups.

We're forcing every kid, no matter her or his interests and abilities, to jump through the same "minimum achievement" hoops. If we'd gear the system to the kid and concentrate on maximum performance, we'd probably begin to see teenagers in those Nobel competitions. [Ω](#)

A handy mirror for studying ourselves

Dec. 1, 2004

"O would some power the giftie gie us, to see ourselves as others see us."

It was probably Miss Ursula Bland, my refined, French-fluent ninth-grade English teacher back in West Virginia, who first exposed me to those lines by Scottish poet Robert Burns.

They took on new meaning during Hurricane Frances.

My escape from the hurricane's howl was a book—Timothy Ferris' *The Mind's Sky*. Ferris writes about matters scientific, mostly about outer and inner space—the universe and the human brain. The book is about SETI projects—the search for extra-terrestrial intelligence—the effort's history, aims, technologies, statistical chances of success, possible dangers, and so on.

Sixty-six pages into *The Mind's Sky* came the paragraph that broadened my thinking. Before that paragraph, whenever Burns' lines crossed my mind, I'd wonder, "What do others---family, friends, acquaintances, strangers—think of me?" Ferris switched me from wondering what others might think of me, to what others might think of all of *us*—the human race in general, or Americans in particular.

If we actually discover other intelligent creatures out there in the universe, Ferris wonders, how will they feel about us? What they'll see, he says, is "...a violent species multiplying at a carcinogenic rate, laying waste to its mother planet while it wars against itself, spending more money on weapons of war than on education, hoarding wealth in the hands of a few while multitudes struggle with inadequate food, sanitation, health care and education, permitting millions of children to die of curable disease or suffer permanent brain damage as a result of malnutrition when their lives could be saved for less money than a suburban matron spends getting a CAT scan for her dog."

Seeing that kind of behavior, might they not write us off as too primitive to contact, and just look in on us once in awhile to be sure we don't spread our destructive ideas and ways of acting to other planets?

We can't, of course, put ourselves in the shoes of creatures from outer space (assuming they wear shoes) and see ourselves as they might see us. But if we're going to survive, we'd better start doing a better job of at least trying to understand our own and other nations. The daily newspapers tell us that's a high-priority challenge, and to meet it, both we and they need to "put on each other's shoes."

What comes out when we try to see things from others' perspectives are our differences, and "differences" teach—teach in very direct and fundamental ways. We know about "fat" only because we know about "thin." "Tall" teaches "short" (and vice versa). There's no happiness without sadness. No light without dark. Rich-poor. Slow-fast. Life-death. American-not American. Differences teach.

What comes out when we try to see things from other's perspectives are our differences,

If understanding ourselves is an essential aim of education, there's no alternative to studying cultural and social differences. Fortunately, almost every school has in it an enormously rich, easily accessed, free resource for firsthand study of such differences—kids from somewhere else, kids with one foot in the dominant American culture and the other foot in another culture.

Unfortunately, that resource is often viewed not as a resource but as a liability. Instead of using it and being thankful for its value in helping us grow intellectually and emotionally, two-culture, two-language kids are often seen merely as a potential drag on a school's standardized test score.

My dad called that "stepping over a dollar to pick up a dime."

Two problems often stand in the way of making educational use of cultural differences. The first is a relatively small minority who believe that the study of any society outside America is part of a conspiracy to sell America down the river. These people make a lot of noise of the kind that makes school boards very nervous, so promising programs are sometimes dropped or are never developed.

The second problem lies in the superficiality of the traditional curriculum. Teachers may personally understand and accept the value of studying cultural and societal differences, but the intellectual tools and materials handed them by the traditional curriculum rarely dig much deeper than ethnic-food days, folk-dancing demonstrations and native-dress displays. The differences that make a *difference* in our understanding of ourselves and other—differences in ideas, beliefs, and values—are mostly ignored.

What a waste! **Ω**

Curriculum is key to schools making the grade

Feb. 22, 2005

It's front-page, above-the-fold news in the *Orlando Sentinel*: "If Florida's F-rated public schools don't improve this year, the state could ask someone else—perhaps a private company or state college—to step in and run the troubled institutions."

And that private company or state college will . . . do what?

I'd really like to know. I talk face-to-face or by phone to educators coast to coast. I read professional education journals. Almost every day's mail brings educational brochures, advertisements, newsletters and miscellaneous educational promotional materials and propaganda. I subscribe to a bunch of Internet services serving up daily links to education-related developments in America, Canada, England, Australia and New Zealand. I maintain e-mail contact with educator friends in Western and Eastern Europe and Asia. And, yes, I go to movies and read stories about impressive-sounding educational turnarounds and "miracles."

I'm not saying that an occasional inspired or charismatic leader can't drag an underperforming institution up a notch or two (at least for a year or two). And I'm not saying that spending weeks or months neglecting all else and studying test prep materials written by the same publisher that wrote the big test won't improve test scores. But if some private company or state college knows The Secret to Solid Educational Success, my information sources either don't know about it or have thus far hidden it from me.

Given the present system, I don't believe there's a Secret to Success, a Key to Quality, a Silver Bullet, a Miracle Cure. There are just too many variables.

But a fundamental problem is what has long been, is now, and will continue to be a problem until some respected, high-profile political leader has the brains and guts to organize a movement to do something about it: An unacceptable curriculum.

The curriculum is education's bottom line. The one now in place was poor when it was adopted in 1892 for the small minority of mostly upper-class kids headed for college, and nothing has happened in the years since to make it any better. It still has no overarching aim, still ignores the brain's need for order and organization, still keeps the door closed to new, important fields of knowledge, still doesn't distinguish between what's more and what's less important, still doesn't require kids to engage in complex, higher-order thought processes, still doesn't have built-in mechanisms forcing it to adapt to change, still is inefficient, time-consuming and costly, still doesn't move steadily and systematically from simple to complex, still ignores the integrated nature of knowledge, still rarely links theory with kids' everyday experience, still emphasizes "fact knowledge" rather than "idea exploration," still is little concerned with helping kids build tools for making ethical and moral decisions.

And that's not the end of a list of what's wrong with it.

Here's a radical idea: Those "F" kids flunking the tests are the canaries in the coal mine; their F-rated schools are an early-warning system sending America a message.

Kids are by nature curious. They wonder. Inquire. Experiment. Question. Explore. They want to know, "What's going on here? Why? What does it all have to do with me?" They want more than anything else to make sense of their lives.

So, what does it mean when they cut classes? Tune out? Turn off? Cause trouble? Walk out? Drop out? Have to be threatened or bribed, brow-beaten or bought off to keep them in school and on task?

Curiosity, wonder, experimentation, questioning, the need to understand, to make sense, to find meaning and purpose in life—does the alienation of “F” kids in “F” schools mean they’re fundamentally different? Have they abandoned or killed the deep-seated human needs and drives that push the rest of us?

I don’t think so. What I see when I leaf through today’s textbooks, go online and read various State’s “standards” for math, science, social studies and language arts, study sample questions from standardized tests, talk to superintendents, principals and teachers, read letters to newspaper editors, and otherwise try to get a handle on what and how this generation is trying to educate the next—what I see is a system blind to a system problem, a problem steadily destroying it.

“F” schools worry me. “A” schools—schools that think jumping successfully through a series of bureaucratic hoops means they’re doing the right thing—worry me a lot more. [Ω](#)

The writing’s on the blackboard: Listen to teachers

March 8, 2005

My late mother didn’t talk much about herself. However, if she thought she was good at something, you’d eventually hear about it in a casual, off-hand sort of way.

I recall, for example, a brief discussion years ago about her new car’s automatic transmission. She mentioned that, back in the 1920s, not only was she the only girl in her large high school who knew how to drive; she was equally comfortable with “stick shifts” or Model-T Fords with their floor-pedal-actuated gears.

In the 1960s, she was teaching fifth grade in an elementary school on Florida’s west coast, and was quietly proud of her work. Near the end of about every year she’d mention that the sixth-grade teachers were again politicking the principal, competing for her fifth-grade class. She didn’t have to say it was because they all coveted her well-prepared, easily taught kids.

Research testifying to the importance of the teacher in learning is unequivocal. Although no one has yet succeeded in nailing down exactly what combinations of which qualities make a teacher effective (and never will), there’s no denying the difference a good one makes.

Which is why, in the current education-reform brouhaha, I pay a lot more attention to teacher than to politician opinion.

A few days ago, I got an e-mail saying something Floridians need to hear. The teacher who wrote it has given me permission to quote her, asking only that I not disclose her name until the end of the school year. She writes:

I have been teaching high school English for seven years. It is a second career for me, and one that required my returning to school. Between my education and teaching experience, I have invested 11 years of my life in the teaching profession.

This year will be my last.

When I began teaching, I taught Shakespeare, Dickens, Poe, Hawthorne—poetry, creative writing and business writing. I taught my students to fill out employment applications, create resumes and understand symbolism in literature. I took joy in watching them grow. I have always received excellent evaluations and have been well thought of by my students, their parents, and my peers.

Now I teach FCAT [Florida Comprehensive Assessment Test] prep—only. It's still called English, but it isn't. I was given an instructional calendar at the beginning of the school year that laid out, week by week, which FCAT skill I was to cover. I was told not to use the literature books in which our county invested thousands of dollars. I was told not to teach a novel and to concentrate on FCAT-length non-fiction passages. I was also told that I was to provide 'direct instruction' every day, from bell to bell.

I have been 'caught' twice this year allowing my students to read FCAT passages silently and respond to FCAT questions. I was told, verbatim: "Your room is too quiet."

I was told my students should not be reading silently in class. (Um...isn't that what they are required to be able to do on the test?) I was also told that I was not saying the word "FCAT" enough during instructional time

Now I am being told that my reappointment for next year is in question for the above transgressions. But regardless of my reappointment for next year, I will be leaving at the end of this school year. Enough.

Although I am trying to see my departure from teaching as an opportunity to grow, I am also heartsick! I will miss the students, their youth and vitality and creativity, and even their attitudes and problems. I can't believe that after six successful years, I have, overnight, become a bad teacher. Even though I try to have perspective, I still feel like a failure. I guess I, too, have failed the FCAT.

Dear Reader, forget for a moment your Democrat or Republican persuasion. Both parties' leaders share the blame for the current *No Child Left Behind* fiasco. Both parties' leaders buy the simplistic "standards and accountability" line. Both parties' leaders are too clueless about education to even be embarrassed by the mess they've made.

Next time you hear a speech or read a news item, editorial or op-ed piece tossing off FCAT-score information as if it actually had something to do with education, think about my file of letters like the one above. I could write a whole year's worth of columns about teachers who are leaving and won't be back, teachers not interested in competing for the Robo-Teacher of the Year title.

If you care about America's future, think about the kind of people willing to replace them in your children's and grandchildren's classrooms. Ω

Amateurs amok—call in the pros

March 27, 2005

“War is too important to be left to the generals.”

So said Georges Clemenceau, twice Prime Minister of France in the early 20th century. Generals, he thought, were likely to be short on perspective, with imaginations hemmed in by military backgrounds, training, and experience.

That possibility notwithstanding, it doesn't take too much digging into history or current events to know that ignoring professional military expertise isn't usually a good idea.

What Clemenceau should have said is, “War is too important to be left *entirely* to generals.” Amateurs will sometimes be able to see a problem freshly, but when there's a battle to win, a heart to transplant, a bridge to build, an airliner to fly, deciding whether to go with an amateur or a professional is easy. When a job is difficult and important, we call on professionals.

Except in education. After the publication of *A Nation At Risk* in 1983, business leaders decided that education was too important to be left to professional educators. So they used their political clout not to help professional educators, but to shove them aside and take over.

The public went along. And are still going along. Thoughtful people who'd consider it crazy if politicians told surgeons how to operate, engineers how to build bridges, or airline pilots how to fly, see nothing wrong with educational amateurs in Washington and state capitols running the education show. The nation's governors recently wrapped up this year's education policy conference, issuing for the umpteenth time their standard education reform formula—“Raise the bar, especially in math and science.”

America is now deep into an amateur-engineered, single-strategy educational experiment: TEST! PASS! FAIL!

Many amateurs think this is a wonderful, long-overdue policy. Indeed, it seems to make so much sense that teachers who question it are likely to be viewed with suspicion. *Good* teachers, many believe (those deserving to be called professionals) constantly “raise the bar.” *Good* teachers welcome being held accountable. *Good* teachers aren't overly concerned with students' self-concepts. *Good* teachers raise test scores.

Professionals know it isn't nearly that simple. To cite a minor example of educational complexity: Professionals know that the areas of the brain which control mathematical thinking usually kick in earlier in boys than in girls—sometimes as much as four years earlier. Girls eventually catch up, and after about age 12 there's no measurable difference in innate ability, but in the meantime there's that third- or fourth-grade standardized test the amateurs have put in place.

So what often happens? Little girls take the test. Then they (and their parents) jump to false conclusions about a lack of mathematical ability, conclusions which may follow them through school and life, forever affecting performance and school and career choices.

An amateur-mandated, high-stakes, standardized test—a test that ignores male-female differences—turns what the professional knows is a non-problem into a potentially serious problem.

That kind of thing happens all the time. Amateurs think there's a "standard" level of reading for nine-year-olds. Professionals know better. Amateurs think that kids who can't read at grade level can't learn anything else. Professionals know better. Amateurs think test-makers know how to write culture-neutral tests that precisely measure skills and abilities. Professionals know better. Amateurs think hanging negative labels on kids and schools doesn't seriously affect performance. Professionals know better.

Why do the amateur educators in the Business Roundtable and Congress enjoy more respect and influence than professional educators? There's a slew of possible sociological explanations, but a simple one is important. As in everything else, the less known about something, the simpler it seems to be. What separates amateurs and professionals is ignorance of complexity, and when it comes to complexities, every kid in every classroom is a walking bundle of them.

Take the matter of grade retention. Professionals know that "grade level" is an invented, arbitrary idea left over from the school-as-factory era, know that academic gains from grade retention are almost always temporary, know that kids mature at different rates, know that individual differences are America's greatest intellectual asset, know grade repeaters rarely graduate, know we've created no alternative career paths for "non-standard" kids, know that helping helps a lot more when kids don't think they're stupid. And they know this just begins the list of complex issues being ignored by grade-retention legislation.

If the fog of political rhetoric ever lifts and the true state of education in America becomes clear, don't blame the professionals for the chaos. Their opinions are routinely ignored. [Ω](#)

Cheaper by the dozen: 12 ways to save money at high schools

May 7, 2005

Cheap! Maybe *that's* the key that'll open the door to educational change!

The appeal of lower taxes almost always trumps the appeal of higher-quality education, so the trick is to figure out how to educate better with less money.....a whole lot less money....so much less money that legislators won't be able to resist removing enough bureaucratic barriers to allow experimentation.

High school reform is on the front burner right now, so let me suggest some ways to save money at that level. Those who think quality lies in doing better what we're already doing will be appalled by the suggestions, but I agree with Joe Graba, former Minnesota Deputy Commissioner of Education: "We can't get the schools we need by improving the schools we have."

"We can't get the schools we need by improving the schools we have."

**Joe Graba, former Minnesota
Deputy Commissioner of Education**

So, starting with a clean slate, and thinking "cheap," here are a dozen proposals:

No. 1: Take the phrase “neighborhood school” seriously and design around it. Choose local adult-student steering committees to locate, rent or lease centrally located community centers, churches, houses, or other facilities.

No. 2: Set maximum school size at 30 to 40 students for morning classes, another 30 to 40 for afternoon or evening classes.

No. 3: Hire a three- or four-person teacher team, based on interviews and the team’s written program proposal.

No. 4: Right up front, spend whatever is necessary to test and fix sight and hearing problems. It’s a waste of money to try to educate kids who’re functioning at less than peak potential because they don’t hear or see well.

No. 5: Find out who each kid really is. It mystifies me how, with straight faces, we can simultaneously sing the praises of “American individualism” while forcing all kids thru the same narrow program. For a fraction of the cost of present standardized subject-matter tests, every kid’s distinctive strengths and weaknesses can be explored using inexpensive, proven inventories of interests, abilities, personalities.

No. 6: Eliminate grade levels. Start with where kids are, help them go as far as they’re able, and give them a diploma (and perhaps a web site] displaying what they’ve done and can do.

No. 7: Eliminate textbooks. They’re relics of a bygone era, cost a lot of money, and they’re the main support of simplistic ideas about what it means to teach and learn.

No. 8: Stop chopping knowledge up into “subjects.” Knowledge is seamless, and the brain processes it most efficiently when it’s integrated.

No. 9: Push responsibility for teaching specific skills and knowledge on to users of those skills and knowledge—employers. Specialized, occupation-related instruction such as that now being offered in magnet schools will never be able to keep up with either the variety or the rate of change. Employers will resist, so sweeten the pot with subsidies as necessary. (A bonus: Apprenticeship and intern arrangements will go a long way toward smoothing the transition into responsible adulthood.)

No. 10: Eliminate school buses, food services, athletic departments, athletic fields, cops on campus, non-teaching administrators, attendance officers, extra-curricular activities. (And add into the tax savings much of the estimated \$50,000-plus it costs each year to keep poorly educated kids locked up in prisons.)

No. 11: Strip away all the non-academic roles and responsibilities state legislators piled on schools during the 20th Century. Create independent municipal support systems for neighborhood-level, multi-age programs for art, dance, drama, sports and anything else “extra-curricular” for which a local need or interest is apparent.

No. 12: Drastically shrink central administrations. Have them coordinate the forming of teacher teams, and relieve those teams of paper shuffling, resource acquisition, and other non-instructional tasks.

School doesn’t need to take all day every day. Suggestions five thru nine will make it possible to accomplish more in three hours than is now being accomplished in six. The special-

interest, personal learning project which every student should always have underway can be done on her and his own time.

Not incidentally, I'm concerned with matters in addition to functional schools—the creation of a sense of neighborhood and community, the expansion of community service activities, and vastly increased contact between generations. Cutting out all the non-academic responsibilities will open up time for all kinds of fascinating, new, growth-producing activity.

Don't like my proposal? Dream up your own. But keep another Joe Graba insight in mind: “Everybody wants the schools to be better; but almost nobody wants them to be different.” [Ω](#)

One size fits all? It doesn't work for dogs—or students

June 25, 2005

Driving the country roads of Scotland, Ireland and Wales, I've sometimes been lucky enough to be blocked by sheep being moved from one pasture to another.

I say “lucky” because it allows me to watch an impressive performance by a dog—usually a Border Collie.

What a show!—a single, mid-sized dog herding two or three hundred sheep, keeping them moving in the right direction, rounding up strays, knowing how to intimidate but not cause panic, funneling them all through a gate, and obviously enjoying the challenge.

Why a Border Collie? Why not an Akita or Xoloitzcuintli or another of about 400 breeds listed on the Internet?

Because, among the people for whom herding is serious business, there's general agreement that Border Collies are better at doing what needs to be done than any other dog. They have “the knack.” That knack is so important, those who care most about the breed even oppose their being entered in dog shows. That, they say, would lead to the Border Collie being bred to look good, and looking good isn't the point. Brains, innate ability, performance—that's the point.

Other breeds are no less impressive in other ways. If you're lost in a snowstorm in the Alps you don't need a Border Collie. You need a big, strong dog with a really good nose, lots of fur, wide feet that don't sink too deeply into snow, and an unerring sense of direction for returning with help. You need a Saint Bernard.

If varmints are sneaking into your hen house, killing your chickens and escaping down holes in a nearby field, you don't need a Border Collie or a Saint Bernard. You need a Fox Terrier.

It isn't that many different breeds can't be taught to herd, lead high-altitude rescue efforts, or kill foxes. They can. It's just that teaching all dogs to do things which one particular breed can do better than any other doesn't make much sense.

We accept the reasonableness of that argument for dogs. We reject it for kids.

In a *Sentinel* column titled “Arrogant U.S. falls behind,” Thomas Friedman said American students are rapidly losing the lead in science and math. In a high-tech world, he reminded us, the consequences of that for our economic well-being could be catastrophic.

Friedman noted that in a competition this Spring which the US used to win in a walk—the annual Computing Machinery International Collegiate Programming Contest—the US got its lowest ranking ever. The University of China came in first, followed by Moscow State University, then the St. Petersburg (Russia) Institute of Fine Mechanics and Optics.

The University of Illinois tied for 17th place.

So, what is this rich, advantaged country of ours doing to try to get back in the game?

Mainly, we’ve put in place the *No Child Left Behind* program. If that fact makes you optimistic about the future of education in America, think again about dogs.

There are all kinds of things they can do besides herd, rescue, and engage foxes. They can sniff luggage for bombs. Chase felons. Stand guard duty. Retrieve downed game birds. Guide the blind. Detect certain diseases. Locate earthquake survivors. Entertain audiences. Play nice with little kids. Go for help if Little Nell falls down a well. And much else.

So, let’s set performance standards for these and all other canine capabilities and train all dogs to meet them. All 400 breeds. Leave no dog behind!

Two-hundred-pound Mastiffs may have a little trouble with the chase-the-fox-into-the-hole standard, and most Chihuahuas will probably have difficulty with the tackle-the-felon-and-pin-him-to-the-ground standard. But, hey, no excuses! Standards are standards!

Think there’s something wrong with this one-size-fits-all teaching strategy? Think a math whiz shouldn’t be held back if he can’t write a good five-paragraph essay? Think a gifted writer shouldn’t be refused a diploma because she can’t pass algebra? Think a promising musician shouldn’t be kicked out of the school orchestra because he can’t do both?

If you think there’s something fundamentally, dangerously wrong with an educational reform that’s actually *designed* to ignore superior talent and natural ability, make photocopies of this column. In the margin at the top of each copy, write, in longhand, “Please explain to me why *NCLB*’s denial of human variability doesn’t result in a catastrophic waste of student potential.” Send the copies to your state and federal legislators, along with self-addressed, stamped envelopes.

Maybe, if they won’t answer *me*, they’ll answer *us*. Ω

Later comment:

This column, updated slightly and titled “Dogs: An unusual guide to school reform” was republished August 12, 2010, in “The Answer Sheet,” the education column/blog for the Washington Post, edited, moderated and often written by Valerie Strauss. It was also beautifully republished by the New Zealand journal Education Today, issue 4-20, in September 2010 (complete with a photo of a Border Collie at work).

Standardized tests: A road map to nowhere?

August 4, 2005

“We are heavily reliant on standardized testing...” says Bill Hiss, talking about education in America. Hiss is Vice President of Bates College in Maine.

“What we have learned at Bates,” he argues, “is that this may be a monumental trip up a blind alley.”

As you can guess if you've read even a few of my columns, that “blind alley” comment about standardized testing got my attention. Like just about every educator who's spent years in the classroom and given thought to what was going on in students' heads, I oppose high-stakes standardized tests. They confuse cultural differences and ignorance, aren't keyed to real-world or adult success, lend themselves to political game-playing, cost enormous amounts of money, short-change non-tested fields of study, deaden or penalize creativity, hand local control of education over to faceless corporate interests, undercut teacher professionalism, divert attention from myriad non-educational factors affecting school performance, and are crude measures of even simple abilities.

(Incidentally, reading isn't a “simple ability.”)

Hiss was speaking on National Public Radio's *All Things Considered*. Just to be sure I'd heard him right, I went into NPR's archives and replayed his comments several times.

Whether or not you agree with his “blind alley” view, there's no question about our growing reliance on standardized tests. DIBELS, *DRP*, *FCAT*, *HSCT*, *PSAT*, *SAT*, *NAEP*, *ACT*, *ITBS*, *CAT*, *TASK*, and *CTBS* are acronyms for some of the tests with which many students are familiar. Your kid or grandkid won't be required to take every one of them, but the consequences of their scores on the ones they *do* take will almost certainly follow them for the rest of their lives, opening some doors, slamming others shut.

The major standardized test to which Hiss was referring was the Scholastic Aptitude Test (SAT). For the college-bound student, this is a big one. It's a creature of the College Board, an association formed in 1900 made up of more than 4,700 schools, colleges, universities and other educational organizations. As standardized tests go, it enjoys considerably more prestige than the more recent ones, such as those which states are required to buy or build to comply with *No Child Left Behind* mandates.

Notwithstanding the major role *SAT* scores play in most colleges' selection procedures, Bates leaves it up to students to decide whether or not to disclose their test scores. Hiss says the policy has been in place for twenty years, and that, in those years, about a third of applicants have kept their scores to themselves. Bates has kept a running record of student performance. What they've learned from their “don't ask, don't tell” policy is that there hasn't been a dime's worth of difference between the grade point averages or the graduation rates of those who did and those who didn't disclose their SAT scores. Hiss mentioned one girl who for some reason *did* submit her way-below-average score of 400 on the verbal section of the SAT, but graduated *magna cum laude* and went on to get a medical degree from Brown University, one of the most respected schools in the country.

But, he continued, Bates doesn't just suffer no ill effects from ignoring standardized test scores. The college enjoys a more diverse and therefore more interesting student body.

If standardized test scores have little or no predictive power for college performance, you can bet they have even *less* predictive power for performance in life. Why, then, are we so willing to use them to beat up on kids, teachers, and schools, and let life-changing decisions hinge on them?

I really don't know. I guess it's a cultural thing. Standardized tests produce numbers, and as a people we often seem more interested in comparing numbers than in figuring out what, if anything, the numbers mean.

I'm not against all testing. Here's one I'd favor: Before editorial writers, columnists, newscasters, television producers and other opinion makers would be allowed to toss off test scores as if they actually meant something important, they'd have to make at least a "C" on a test proving they'd read and understood the objections of the 48 professional education organizations that oppose the high-stakes standardized test fad. [Ω](#)

Folly to offer students a drink from fire hose

Sept. 20, 2005

A longtime Sentinel reader says I'm "a mass of contradictions and hypocrisy," and "too critical of education." He wants me to skip all other education reform ideas and support what he believes is the "only weapon available" to parents to save their children from today's sorry schools.

That weapon, he says, is vouchers.

Like most everyone else, I'm blind to my own contradictions and hypocrisy. However, I freely admit to being critical. I'd rather call what I write "commentary," but the difference between commentary and criticism is probably in the eye of the reader.

We're wasting time and money on a curriculum that waste's kids' intellect.

Yes, I criticize the education establishment. It's called "tough love." I think I have a right—no, an obligation—to say what I think is wrong with my profession and try to make it right.

So, how about vouchers as the cure for what ails education?

How about aspirin as the cure for cancer? It might in some cases help a little, but it isn't up to the challenge. The same goes for the problem-solving abilities of vouchers. I'm not opposed to school choice. And I can understand the enthusiasm for them of parents who're sending their kids to schools they think are lousy. However, if every kid in an "F" school moved to an "A"-rated school, it wouldn't make a dimes worth of difference where it really counts—in what goes on in their heads.

That's because both "F" and "A" schools, and all those in between, are parts of an educational system that has yet to understand and deal with a major cause (maybe THE major cause) of poor academic performance: TMRI.

Too Much Random Information.

When every school in the country bases instruction on the same mistaken teaching-learning theory (that if you throw enough facts at kids some of them are bound to stick), the benefits of moving kids from one school to another are too insignificant to be worth the trouble and expense.

A bit of personal history may help explain where I'm coming from.

Back in 1965, while teaching interdisciplinary social science at Florida State University, I had what seemed to me to be an epiphany. The course I inherited from another teacher was a complicated, confusing hodge-podge of information—a few weeks each of economics, political science, sociology, and anthropology. Part way through my second attempt to teach it, I discovered that if I introduced students to “General Systems Theory” as it applied to things called “human societies,” it turned what seemed to be four separate subjects into a single, much easier-to-understand study.

The more I experimented, particularly with students in the K-12 school that used to be on Florida State's campus, the clearer it became that not just those four subjects, but all school subjects, were parts of a single body of knowledge. Seeing them as such gave kids a powerful, permanently useful mental organizer allowing them to follow through on assignments using reason and creativity rather than mere memory.

That was 40 years ago. In the years since, in articles, columns, books, workshops and presentations to school boards, conferences, civic groups and business organizations, I've reminded readers and hearers how little most adults remember of all they supposedly “learned” in school. I've asked them to think of traditional schooling as much like offering kids a drink from a fire hose. (For example, eighth-grade mathematics textbooks in Japan cover about 10 major topics. U.S. textbooks usually throw more than 30 at kids.)

Too Much Random Information.

We're wasting time and money on a curriculum that wastes kids' intellect. We need a national effort to rethink what's taught and why, based not on the vague demands of business and industry but on the way the brain works. To make kids smarter quicker, they need to be taught how to select, prioritize, organize and integrate information.

Educators tell me I'm probably right, but keep right on throwing the kitchen sink at kids. Legislators in Washington and state capitals answer my direct questions about the wisdom of their “reforms” with thank-you-for-contacting-me form letters. Media types echo the politicians' line and blame teachers and kids. The “silver bullet” people are unable to see past their love affair with merit pay, union busting, competition, privatization, charters, vouchers, or some other miracle cure.

So I criticize them all. It doesn't change anything, but it makes me feel better. Ω

What's the best way to skin the FCAT?

Oct. 16, 2005

There's more than one way to skin a cat.

And if that "cat" is the FCAT (the Florida Comprehensive Assessment Test), and you're a school principal whose reputation and professional advancement hinge on your school's scores, the best way to skin it is a major concern.

No principal is ever going to admit actually doing it, but most know a workable, score-improving strategy. Call it "D&C"—Divide and Conquer.

It's pretty simple. With few exceptions, you know which of your students are going to pass the test. If you don't know them personally, you can tell from their home addresses. You also know that certain others are almost certainly going to flunk the test. And, again, if you don't know them personally, you can tell from their home addresses who most of them are.

This is extremely useful information. You can afford to be relatively unconcerned about the FCAT performance of a big chunk of your charges, and concentrate your best resources, incentives, and test-taking drills where they'll have the biggest impact on your school's scores—on the kids in the middle whose performance is likely to be close to the cut score.

Don't say it doesn't happen. Unless principals have lied to me, it happens.

These kinds of stories irritate the politicians and policymakers in Tallahassee, so drawing attention away from them calls for diversionary tactics.

The recent release of part of an old 10th grade FCAT is such a tactic. If the media and the public can be made to focus narrowly on the questions from one specific, carefully edited test, they won't be talking or writing about the whole slew of problems high-stakes testing either ignores or makes worse.

Let's review just a few of those:

- Fear—student, teacher, administrator fear—is the foundation upon which the present high-stakes testing education reform effort is built. Fear never has been, isn't now, and never will be a sound basis for educating, any more than it's a sound basis for marriage, community, or religion.
- A brand-new, twenty-five state study by researchers at Arizona State University and the University of Texas says there's no consistent link between pressures to score high on high-stakes state tests like the FCAT and a state's performance on the National Assessment of Educational Progress.
- Dumping a third of the young out on the street without a plan or program (as testing is now doing) will have far more expensive and painful long-term consequences for America than did ignoring New Orleans' levees.
- Our obsession with standardized testing is sidetracking and downgrading the traits and abilities which are every society's salvation—creativity, ingenuity, leadership, character, individuality, love of learning. And we're doing this even though we know there's no connection between high-stakes test scores and adult success.

- Because, done right, the work is tough and the pay is lousy, the teaching profession is already on the ropes. Now, it's being further de-professionalized by the forced, mindless drudgery of test drill, test drill, test drill.
- Test defenders keep arguing that the Sunshine State Standards legitimize the FCAT. What nobody is pointing out is that those so-called standards were put in place entirely by those with a vested interest in perpetuating them.
- As long as officials in Tallahassee can raise or lower the line between failure and success merely by changing mathematical formulas, education reform will continue to be a game played for political advantage rather than educational excellence.
- It's the poverty, stupid! Teachers can't undo in a few hours a day a list as long as your arm of poverty-related obstacles to learning.
- To make sense of education policy, follow the money.

State officials have borrowed a page from magicians, pickpockets and scam artists: Divert the victim's attention. As long as dribbling out old FCAT questions is front-page news, the really important questions about what the standards and accountability fad is doing to kids and to America's prospects for the future are unlikely to get asked. Even those who take the diversion bait and focus single-mindedly on the FCAT itself are shut down even before they look at a single test question. John Winn, Florida's Commissioner of Education, made that clear when he accompanied release of the sample test with an old ad hominem argument. What worried him about releasing the test, he said, were "arm-chair psychometricians."

So, even if by some remote chance you have a beef about a test question, don't question authority or you'll be labeled a naive amateur. **Ω**

Merit pay problematic

Money is not ultimate motivator for teachers

Nov. 19, 2005

From the farmhouse where I once lived, it was pretty much a straight shot up Ohio Route 14 to Lincoln Electric on the east side of Cleveland. Fifty years ago it was about an hour's drive.

Lincoln Electric manufactured electrical equipment, mostly electric welders. A neighbor, friend, and father of one of my students worked there. He rarely missed an opportunity to remind me that he made about three times more money assembling electric welders than I made teaching his daughter.

I knew the way to Lincoln Electric not because I was interested in changing jobs, but because I was talking to someone there about a project I thought could improve Southeast High School, where I taught.

By just about any measure, Lincoln was progressive. In 1914 they created an Employee Advisory Board made up of elected representatives from every department. In the next few years, long before most other companies, everybody got free life insurance, paid vacations, stock ownership plans, bonuses for useful suggestions, automatic cost-of-living raises, and continuous

employment guarantees. During the worst years of the Great Depression, average pay for employees more than doubled.

What particularly interested me about Lincoln, however, was the company's "incentive Bonus" program. Simply put, the better job you did, the more you got paid.

Merit pay! I loved the idea! Bruce, the agriculture teacher, and I began an effort, blessed by the school board, to bring merit pay to Southeast High School.

It was a real challenge. Every problem we solved seemed to create two or three new problems. Month after month we talked about "the devil in the details." Finally, notwithstanding how commonsensical the whole idea seemed, notwithstanding our initial enthusiasm, notwithstanding how "American" the project, we concluded that the gulf between manufacturing things and teaching kids was unbridgeable. The devil wasn't in the details; the devil was in the fundamentals.

Here are some relevant facts—facts still true:

- Every kid is different. In industry, quality controls discard unsatisfactory "raw material." Teachers have to work with whatever the local parent population produces—smart and slow, motivated and lazy, clever and clueless.
- Every class is different. Two classes of the same size, studying the same subject, in the same room, at the same time of day and year, will have different "collective personalities" and have to be taught differently.
- Every subject is different. A performance evaluation for a band director won't work for a teacher helping kids learn how to give impromptu speeches in an English class, or analyze propaganda in a social studies class, or study milk production on a local dairy farm in an agriculture class.
- Every teacher is different. Some come on like Marine drill sergeants, others like Mary Poppins. Both approaches, and everything in between, can succeed for teachers who build on their strengths and minimize their weaknesses. How a particular style works will be different for every student, and the results may not be known for years.
- Every work environment is different. Some administrators treat teachers as professionals, encouraging independence, growth and creativity. Others are authoritarian and controlling, or even see teachers as the enemy. Not surprisingly, teachers function differently in different environments.
- Every resource base differs. There's no standardization of the kinds and amounts of instructional tools and materials available, of monies for supplies and enrichment activities, or for the ability and willingness of parents or volunteers to share their knowledge, experience and support.

That's six major variables affecting teacher performance, only one of which is controlled by the teacher.

I can think of no way to bulldoze all those variables into a level playing field for all teachers. And in the more than 50 years since Bruce and I tried and failed, I've never seen anyone else do it. Twenty-two governors recently agreed that merit pay is a great idea, and the governor of

Texas is putting a plan in place. It'll be interesting to watch what happens. A perception of unfairness is a sure-fire way to destroy a school system.

But even if some genius figures out how to do what my friend and I couldn't do, it won't solve the problem.

Merit pay is based on an assumption about basic human nature, that *money is the ultimate motivator*, and the behavior of hundreds of teachers I've known says that isn't true.

Robert Pirsig, in *Zen and the Art of Motorcycle Maintenance*, argues persuasively that *creating quality* is a deeper human drive than acquisitiveness. Sure, teachers want enough to live decently. But the teachers who readers should most want teaching their kids and grandkids are those for whom quality work is more important than money. If the opportunity to achieve that is missing, raising salaries enough to keep teachers in the profession will trigger a tax revolt. **Ω**

Later comment:

Remarkable psychological studies done in the last few years indicate that, contrary to conventional wisdom, incentives such as merit pay actually degrade performance. For an overview: http://www.youtube.com/watch?v=u6XAPnuFjJc&feature=player_embedded#!

'Straight-cut ditch' schools widen gap in education

Dec. 17, 2005

Brent Staples writes about education. His opinions appear in the *New York Times*. I write about education. My opinions appear in the *Orlando Sentinel*.

Staples thinks *No Child Left Behind* is improving education in America. I think it's hammering nails into education's coffin.

I'll grant Staples and other supporters of *NCLB* this: Because it breaks school populations down by race and requires test scores for each group to be reported separately, the legislation calls loud attention to minority students. If any one minority in a school doesn't make AYP—Adequate Yearly Progress—the whole school is in trouble. If there's inadequate yearly progress for two years in a row, the school is in *big* trouble.

This single provision of *NCLB* has bought the legislation major support from blacks, support I believe is misplaced and short-sighted. The long-range consequences of *NCLB* will be bad for all students, but they'll be devastating for the very students *NCLB*'s advocates and apologists most want to help.

I begin my argument by asking not what's bad for students, but what's good for them. Hands down, the most popular answer to that question is, "The basics! The 3 Rs are the foundation of everything else!" The power of this assumption is demonstrated daily in the school nearest you as all else is put on a back burner in an effort to raise reading and math standardized test scores.

What we most want for our kids is an education which helps them realize their potential.

But as is often the case, the popular answer is superficial. The basics are mere means to an end. What we most want for our kids is an education which helps them realize their potential. Obviously, highly developed basic skills are important tools in a kid's pursuit of her or his potential, but it's easy to win the "basics" battle and lose the "developing individual potential" war. And that's where *NCLB* is taking us.

Henry David Thoreau can help explain where I'm coming from. "What does education often do?" he asked. "It makes a straight-cut ditch of a free, meandering brook."

No Child Left Behind is a strategy for making straight-cut ditches. In contrast, developing individual potential doesn't just leave brooks free to meander, it aims to clear away debris and make meandering easier.

I'll hear from those who resist this idea. They'll tell me kids have to learn to live in the real world. They'll say that *NCLB*'s emphasis on standardized tests is a good thing because "everybody has to take tests." They'll maintain that schools dedicated to developing individual student potential will be "soft," that such an education might be OK for a few talented kids, but as a general policy it's an invitation to anarchy, or at least to social decline.

Ironically, while America chases Japanese "straight-cut ditch" standardized test scores, the Japanese come to America to find out about our "meandering brook" students. Asked by Dr. Joseph Renzulli at the University of Connecticut about their interest in American education, visiting Japanese educators recently said, "We have no Nobel Prize Winners. Your schools have produced a continuous flow of inventors, designers, entrepreneurs, and innovative leaders. We can make anything you invent faster, cheaper, and, in most cases, better. But we want to learn what role this 'creative productivity' focus plays in the production of creative and inventive people."

NCLB's push for "straight-cut ditches" is bad policy, but exactly why it's often particularly devastating for blacks, other minorities, and the long-time poor may not yet be obvious.

The main problem? Those high-stakes tests *NCLB* demands.

There are many kinds of "smarts"—linguistic, spatial, musical, kinesthetic, naturalist, interpersonal, and so on—many paths to the development of individual potential. Never mind, says *NCLB*. It focuses on just one—symbol manipulation skills—and ignores the rest. Worse, the emphasis isn't even on symbol manipulation skills in the broadest sense, but just on those particular ones called for by standardized tests.

Well, it will be argued, those skills are the key to good jobs, so they're the ones every kid needs.

Maybe. But the big test isn't *seen* either by the kids who take them or by the general public as just a test of ability to manipulate symbols. It's seen as a general *intelligence* test—a measure, across the board, of smarts, of brains, of innate ability. That *one* score on that *one* ability then becomes, both to the kid and the larger society, *the whole, denigrating story*.

If you have any doubts about the effects of thinking you're not smart, in a society that thinks you're not smart, Google "self-fulfilling prophecies." [Ω](#)

From classroom to tar pits?

February 4, 2006

I drive a 17-year old pickup truck. It's ugly, but dependable. Unless someone comes along with a really good deal on a better one, I intend to drive it until the rust refuses to hold it together.

Why I'll probably be able to keep my truck for several more years is no mystery: monitoring. Like most people who hang on to old vehicles, I pay attention to gauges, noises, vibrations, smells and other indicators of possible problems that, if ignored, could mean trouble.

Monitoring keeps vehicles running. It also keeps bodies healthy, restaurants clean, traffic moving, store shelves stocked, budgets manageable, and much else. In fact, it's no exaggeration to say that monitoring is essential to human survival. Societies that don't adequately monitor themselves and their situations end up on history's junk pile.

So, is America monitoring conditions and problems that, left unattended, might do us in?

The answer might seem to be "Yes." Science provides us with mountains of feedback on just about everything under (and beyond) the sun that might affect our way of life.

46 percent of 13-year-olds said that when they are their parents' age, they expect the world will be a worse place to live than it now is.

For example, an Internet search of "fish stocks" tells me that the number of tuna, swordfish, marlin, cod, halibut, and flounder off America's coasts has decreased more than 90 percent in the years since I graduated from college. Googling "groundwater" links me to some pretty scary stuff about the coming collision of water resources and urban development. Many scientists think the buildup of carbon dioxide in the Earth's atmosphere is a far more serious threat than terrorism.

It's all there in the numbers—trends in resource depletion, infant mortality, species extinction, life expectancy, wealth distribution, topsoil loss, arms expenditures, desert growth, population movement, trade imbalances, levels of harmful chemicals in newborn babies, polar ice-cap melt—on and on and on.

But having access to important information affecting our future doesn't mean we're actually monitoring it. That requires paying attention. And paying attention, in turn, is a waste of time if appropriate action isn't taken.

James McGregor, an American businessman who has lived in China for 15 years, says Chinese leaders monitor the United States. It has led them, he says, to "admire, fear and pity" us, the pity coming from their belief that America is a county in decline. They think we're "ill-disciplined, distracted and dissolute." They see us drowning in debt, ignoring our deteriorating infrastructure, underfunding our schools and generally behaving in other short-sighted, socially irresponsible ways.

Why, they wonder, when we're digging ever deeper the hole they think we're in, are we so caught up in what they see as trivia—arguing about where to hang the Ten Commandments, preoccupied by homosexuality, fixating on news about murdered or missing pretty white females, legislating steroid use in sports, punishing flag burners—getting all emotional about

issues they see as only marginally or not at all related to what they believe is America's long-term well-being and continued power?

We may not all agree with the Chinese leaders, or may think they should be putting their own house in order rather than inspecting ours, but they raise some important questions for Americans in general and educators in particular. If our collective survival depends on our knowing and caring about creeping trends and problems that could leave us cold or hungry or at war with each other, if it depends on our electing public officials who pay attention to those trends and problems rather than pushing our hot buttons or channeling the demands of big campaign contributors, then enormous educational challenges lie ahead.

I doubt we'll meet those challenges. However, if there's hope, it probably lies with the kids. In a *Time* magazine poll, 46 percent of 13-year-olds said that when they are their parent's age, they expect the world will be a worse place to live than it is now.

That's a sad burden for the young to carry, but it's consistent with the view of many experts, including Jan Lundberg, energy analyst and publisher of the *Lundberg Letter* on oil trends. He thinks the fossil fuel-based phase of human history we're now in won't wind down gradually but will end abruptly, that it will do so sooner rather than later, and that changes in our way of life are likely to be drastic.

Knowing there's a problem is the first step in addressing it, which probably puts those 13-year-olds ahead of many adults. How sad, then, that the current narrow, Washington-engineered, teach-to-the-test education "reform" program will send them into the future with less creativity than their parents and grandparents brought to the challenge of survival. Ω

Testing? YES! Standardized Testing? NO!

Feb. 19, 2006

Remember Richard Feynman? Free spirit? Drummer? Adventurer? Teller of funny stories? Artist? Expert safe cracker? Writer? College professor? Translator of Mayan hieroglyphics? Member of the team that developed the atomic bomb? Major contributor to the theory of quantum electrodynamics? Winner of the Nobel Prize in Physics in 1965?

Remember him? Sure you do! He's the one who dropped an O-ring into a glass of ice water to show the other members of the committee investigating the Challenger explosion that the rings got brittle and could fail when they were cold.

He died in 1988. "I'd hate to die twice," he said from his hospital bed. "It's so boring."

Feynman loved teaching. He said it helped him think more clearly. He also thought he had a moral obligation to explain very complicated things using the simplest possible language.

What made him a master teacher, however, wasn't just his words, but his use of what teachers call "hands on" activities.

Student ability to merely remember and parrot back words from textbooks or lectures is mistaken for genuine learning.

Feynman wrote a stack of serious books with titles like *Elementary Particles and the Laws of Physics* and *Einstein's Relativity, Symmetry and Space-Time*. He also, however, wrote several not-so-serious books of personal experience, and it's from one of these—*Surely You're Joking, Mr. Feynman!*—that I want to pull a rather long quote.

He's thinking back to teaching at a university in Brazil, in a building looking down on a bay. He's remembering handing out Polaroid strips to students and having to encourage them to actually *use* them to look at sunlight reflecting off the water. He follows that with five additional pages of examples of what he saw as the major teaching and learning problem in higher education in Brazil.

“...I attended a lecture at the engineering school. The lecture went like this, translated into English: ‘Two bodies ... are considered equivalent ... if equal torques ... will produce ... equal acceleration.’

“The students were all sitting there taking dictation, and when the professor repeated the sentence, they checked it to make sure they wrote it down all right. Then they wrote down the next sentence, and on and on. I was the only one who knew the professor was talking about objects with the same moment of inertia, and it was hard to figure out.

“I didn't see how they were going to learn anything from that. Here he was talking about moments of inertia, but there was no discussion about how hard it is to push a door open when you put heavy weights on the outside, compared to when you put them near the hinge—nothing!

“After the lecture, I talked to a student: ‘You take all those notes—what do you do with them?’

“‘Oh, we study them,’ he says. ‘We'll have an exam.’

“‘What will the exam be like?’

“‘Very easy. I can tell you now one of the questions.’ He looks at his notebook and says, ‘When are two bodies equivalent?’ And the answer is, ‘Two bodies are considered equivalent if equal torques will produce equal acceleration.’

“So, you see, they could pass the examinations, and ‘learn’ all this stuff, and not know anything at all.....”

True in Brazil. True in America. True in schools around the world. Student ability to merely remember and parrot back words from textbooks or lectures is mistaken for genuine learning.

The main reason why “hands on” teaching is much rarer than “talking heads” teaching is that teachers tend to teach as they were taught. And the main reason “talking head” teaching *continues* is standardized testing. (Be clear about this. Not “testing,” but “STANDARDIZED testing.”)

Here, in three short sentences, is why *No Child Left Behind* is dumbing down America's kids: 1. Teachers always teach to the test. 2. Under *NCLB*, the only tests that count are standardized and machine scored rather than teacher created and scored. 3. Machines can't evaluate and attach a number to complex thought processes, so complex thought processes don't get taught.

Feynman, wanting to teach about moments of inertia, would probably have just brought to class a bag of bricks with a way to hook it to the top of a door, and told his students to get started figuring out the forces involved in moving the door depending on where the bricks were hung.

And he would surely have considered what he learned from quietly watching and listening to them experiment and talk about the task a far better indicator of levels of understanding than anything he could find out from a multiple choice, paper and pencil, standardized test.

Generations come and go, education reform fads come and go, education gurus come and go, critics come and go, but faith in teacher talk, textbooks, and standardized tests goes on forever. You'd think that how little most adults remember of what they once heard or read in school, compared to how much they remember of what teachers made them figure out for themselves, would lessen public resistance to learning by doing. It doesn't. Ω

What Henry Ford knew

March 28, 2006

I bought a new cordless drill the other day. Walking through the hand-tool and power-equipment store, I was struck, again, by the fact that practically nothing on the counters and shelves came from an American production line. Many of the brand names were old-line American, and the designs and specifications may have originated here, but the tools themselves were made elsewhere.

Now, I'm not a protectionist, and I'm sold on the merits of free enterprise, but I can't help thinking there are long-term costs to this that will eventually circle around and bite us from behind. Yes, the design stage is where imagination and innovation play their most important roles, and America has been a step ahead of most of the rest of the world on those counts, but my decades in the classroom tell me that separating the handwork from the brainwork undermines the brainwork.

Personal experience tells me the same thing—that there's some sort of powerful connection between doing and thinking. Twenty or so years ago, I built the house I live in. I didn't subcontract anything, just got professionals to stop by every few days to check out my work ahead of county building inspectors. The house is unconventional, and there were no contractors in the area who had built anything like it. At the same time I was building the house, I was writing the book I am most pleased with—one published by a respected university press. The house and the book—hammer and clipboard—moved along together. And both, I'm convinced, were the better for it. The house has remained untouched by hurricanes and the book is still in print.

*Ford could see
'connections,' could
see how short-term
sacrifices could have
long-term benefits.*

Short-term, America's offshoring of production benefits me. I got the most powerful drill in stock at a really good price. But long-term, one of the conclusions I draw from history is that manufacturing, engineering and innovation are all wrapped up together. I suspect we've long had the edge in technological innovation because we had the edge in manufacturing, not the other way around. As a few companies have discovered, production and assembly-line workers aren't just hands; they're thinkers, and the handwork-brainwork relationship unleashes creativity.

One possible explanation of American industry's tendency to think short- rather than long-term is simply that that's what corporations are designed to do – maximize quarterly profits. However, I think there's another, less obvious reason why business leaders think offshoring has few downsides. Nowhere in their educations were they required to think in an organized, systematic way about what are sometimes called “causal sequences.”

Here's Henry Ford, in 1926, illustrating what I mean by “causal sequences:”

“We have decided upon and at once put into effect through all the branches of our industries the five-day week. Hereafter there will be no more work with us on Saturdays and Sundays...

“The industry of this country could not long exist if factories generally went back to the 10-hour day, because the people would not have the time to consume the goods produced. For instance, a workman would have little use for an automobile if he had to be in the shops from dawn until dusk. And that would react in countless directions, for the automobile, by enabling people to get about quickly and easily, gives them a chance to find out what is going on in the world--which leads them to a larger life that requires more food, more and better goods, more books, more music—more of everything”

Ford wouldn't have used the words “causal sequences,” but, unlike his peers, he could see “connections,” could see how short-term sacrifices could have long-term benefits.

He'd done it before. Twelve years earlier he'd started paying his workers the then unheard-of sum of five dollars for an eight-hour day. That was more than twice the industry average, which was two dollars and a half for a 10-hour day. If he wanted to sell a lot of cars, Ford reasoned, ordinary people had to make enough money to buy them.

At a common-sense level, everybody knows about “connections.” But failure to teach students how to trace and make practical use of them to solve existing problems and avoid future ones is yet another reason why so-called “standards” rigidly tied to school subjects rather than to the real world, and the standardized tests geared to those standards, fail to prepare the young for an unknowable future. Ω



ORLANDO SENTINEL ARCHIVE
Henry Ford sits behind the wheel of an early automobile offered for sale by the Ford Motor Co.

A true test of a student's ability? Just doing it

July 17, 2004 [Date was initially unknown, so this is out of sequence]

Question: What do kids do with number-2 pencils that affects real-estate values, political campaigns, corporate lobbyists, professional reputations, the distribution of billions of dollars, the thrust of newspaper editorials, public attitudes toward schooling, and the future of the Republic?

The answer, of course, is: "They blacken in ovals on standardized tests."

You might think that with so much riding on them, there would be enormous interest in the tests themselves. Who, for example, decides what to test? Why? When? How? What arguments and assumptions support their decisions? Who weighs the merit of those arguments and assumptions?

Should near-final judgments about human potential be in the hands of a handful of test publishers? Should they be setting the direction of American education? Since today's education will play itself out entirely in the future, what's their vision of that future?

You might think that these and the dozens of other questions that could and should be asked about standardized tests would be front and center in public attention. In fact, the results of the tests are shaking America to its roots, while the tests themselves are getting a free pass.

Explain to me, please, why that isn't considered a monumental case of societal irresponsibility.

Where are the politicians, columnists, editorialists and other opinion leaders on this issue? Thus far, they all seem to be on the Washington bandwagon, looking down at the teachers and kids doing the grunt work and yelling at them to try harder.

"But," my critics invariably wail when I rail about the destructiveness of standardized testing, "people have to be held accountable, and this is how to do it."

Well, it isn't how I did it for decades in the classroom. Not long after I started teaching, I concluded that, except for quiz-show contestants, tests of knowledge were just about worthless. In everyday life, what counts isn't what you know, but what you can do with what you know. Doing and knowing are inseparable. So I stopped giving multiple choice and other so-called objective type tests and started giving kids things to do.

Here's an assignment I wrote many years ago for high-school students working in small groups:

An aim of the National Aeronautics and Space Administration (NASA) is the ever-greater miniaturization of self-contained life support systems—sort of garage-sized "family farms." That's tough to do in space, but should be easier on Earth.

(1) Design a system sufficient to meet the needs of four people, operable in the local climate. (Remember, no outside connection to utilities.)

Everyone seems to be on the government's bandwagon, looking down at the teachers and kids doing the grunt work and yelling at them to try harder.

(2) Compute the system's approximate cost.

(3) Decide who'd be the most likely buyers of such a system and devise a multimedia-marketing program, complete with roughed-in ads, etc.

(4) Predict both probable and possible impacts of the system on local demographics, the environment, social institutions (governments, churches, schools, the economy, etc.) and attitudes and values.

(5) In open debate, take and defend a position for or against making the system available and affordable.

(6) Repeat (1) through (5) for a society outside the United States differing markedly from your own.

If this assignment seems far out, consider:

It's intellectually challenging, even for the best of students. It builds on present knowledge. It has no single "right" answer. It makes kids actually think (not merely remember). It adapts to individual differences and interests. It erases the artificial boundaries between and around school subjects. It demands imagination and creativity. It builds useful team skills. It opens up vast and varied fields for reading and research. It doesn't "talk down" to kids. It has enormous social and political ramifications. It surfaces truly important matters for study such as the shape of the future (just to begin a list)

OK, that's an example of an assignment. Now, what about the test?

That's it. That *is* the test. You give kids something to do, and then you sit down with them, shut up, watch and listen. Day after day. You look over shoulders, note what appears on scratch paper and in notebooks, pay attention to body language, follow dialogue, argument, and evidence of determination, diligence, drive.

Yes, making judgments about a kid's performance is hard. Yes, those judgments will be subjective. No, they won't be easily converted into report card or school grades, No, not all teachers will be equally perceptive.

But even the least gifted teacher, teaching to a legitimate "working knowledge" test, will know far more about your kid's abilities than can be learned from numbers derived from standardized test questions, focused on short-term memory, written by moonlighting graduate students sitting in corporate cubicles leafing through company textbooks. **Ω**

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Thematic Index

When these columns were initially placed on Marion Brady's website, an indexing scheme was used based on curricular problems. That list, and page numbers for the linked columns, are below.

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