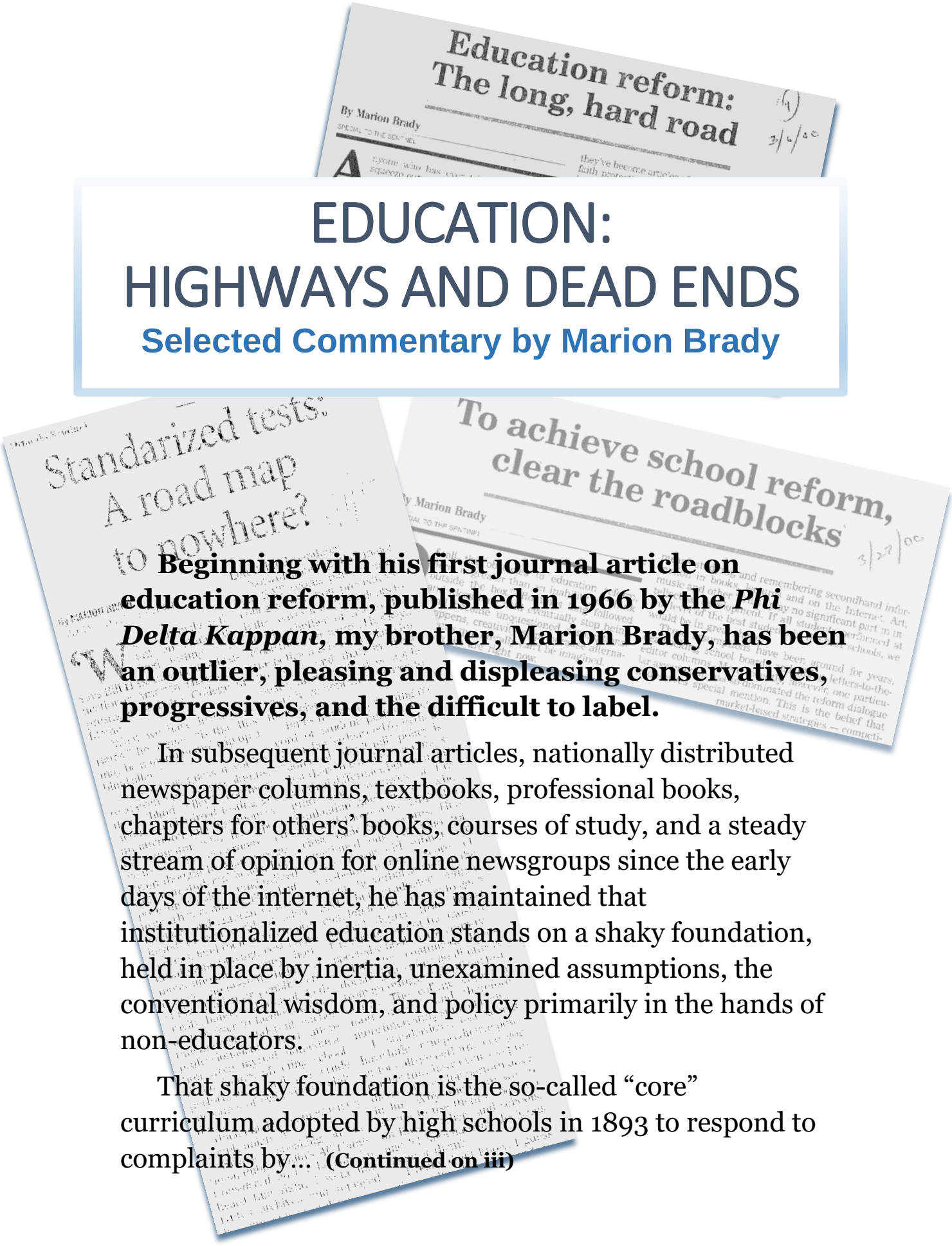


EDUCATION: HIGHWAYS AND DEAD ENDS

Selected Commentary by Marion Brady

Beginning with his first journal article on education reform, published in 1966 by the *Phi Delta Kappan*, my brother, Marion Brady, has been an outlier, pleasing and displeasing conservatives, progressives, and the difficult to label.

In subsequent journal articles, nationally distributed newspaper columns, textbooks, professional books, chapters for others' books, courses of study, and a steady stream of opinion for online newsgroups since the early days of the internet, he has maintained that institutionalized education stands on a shaky foundation, held in place by inertia, unexamined assumptions, the conventional wisdom, and policy primarily in the hands of non-educators.

That shaky foundation is the so-called "core" curriculum adopted by high schools in 1893 to respond to complaints by... **(Continued on iii)**

www.marionbrady.com

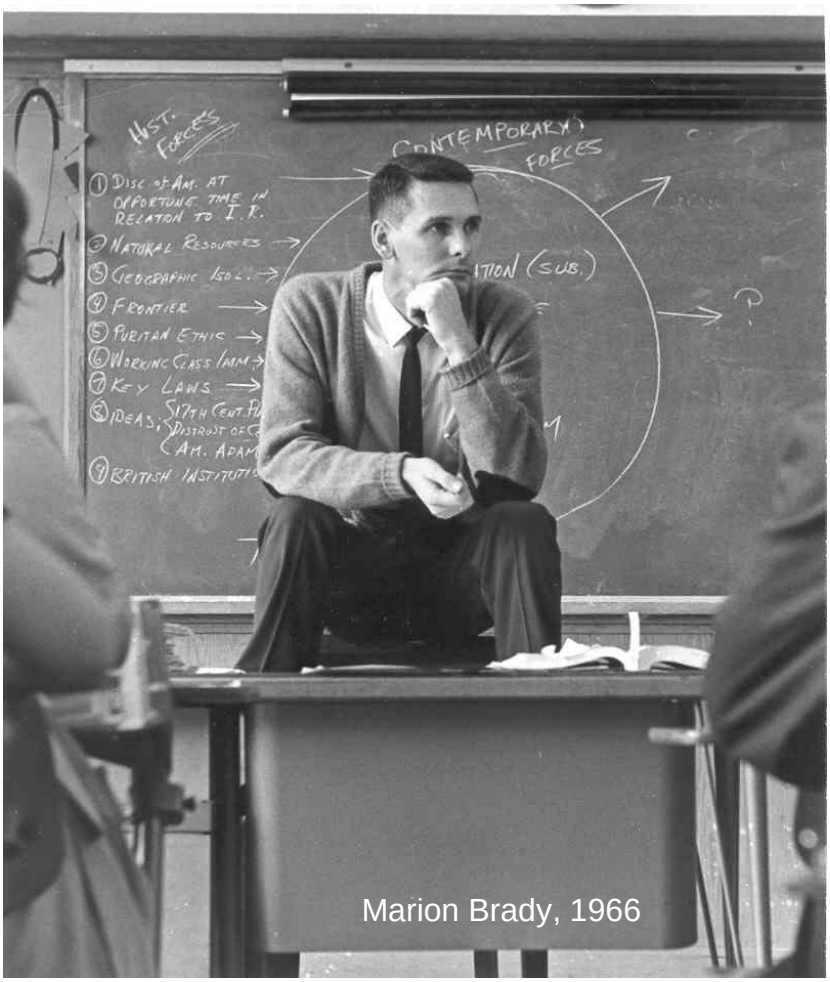
(Foreword, continued from cover)

…college admissions officers that so many subjects were being taught it made comparing grade transcripts difficult.

The familiar-to-all math, science, language arts, and social studies core, Marion points out, has no agreed-upon overarching aim, is needlessly complex, is at odds with the holistic, systemically integrated nature of reality and the seamless way the brain perceives and processes information, ignores vast and important fields of knowledge, and tracks learner and school performance with standardized tests that measure mere ability to recall and apply secondhand information to the neglect of the dozens of thought processes and countless combinations of processes that make routine human functioning and civilized life possible.

Those only begin the list of problems with the core curriculum, problems he insists have relatively simple, commonsense solutions if policymakers will give educators sufficient autonomy to continue work they'd begun before the No Child Left Behind legislation shut innovation down.

Teaching as a career never crossed my brother's mind until years after he got his degree in political science. Once in it, he found intellectual challenges too compelling to abandon, and after ten years of eye-to-eye classroom dialogue with adolescents, chose as most useful in his work a degree in anthropology.



Marion Brady, 1966

More than 160 op-ed articles written by Marion have been published. I compiled most of them in three e-books available from his website, www.marionbrady.com. I titled them the "Road to Hell" series, because many of the articles dealt with the misguided education "reforms" pushed by influential non-educators who assumed there was nothing

wrong with the core curriculum that competition and technology couldn't cure.

However, that title was really unfair. Marion hasn't just pointed to education policies and institutionalized curricula that are creating major problems; he's developed and extensively tested alternatives—roadmaps to significant educational improvement. It's been my privilege to help in this process; together we've developed and give away curricular materials that illustrate the principles central to his view of educational excellence.

I've selected some of Marion's op-ed articles and organized them by topic to call attention to education's major unaddressed problems and the potential of systems theory and thinking and other easily implemented ideas to move individual and school performance to levels not now considered possible.

Howard Brady

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. (p. 82)

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1. Learning, Observed

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

Orlando Sentinel, 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

Orlando Sentinel, 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.

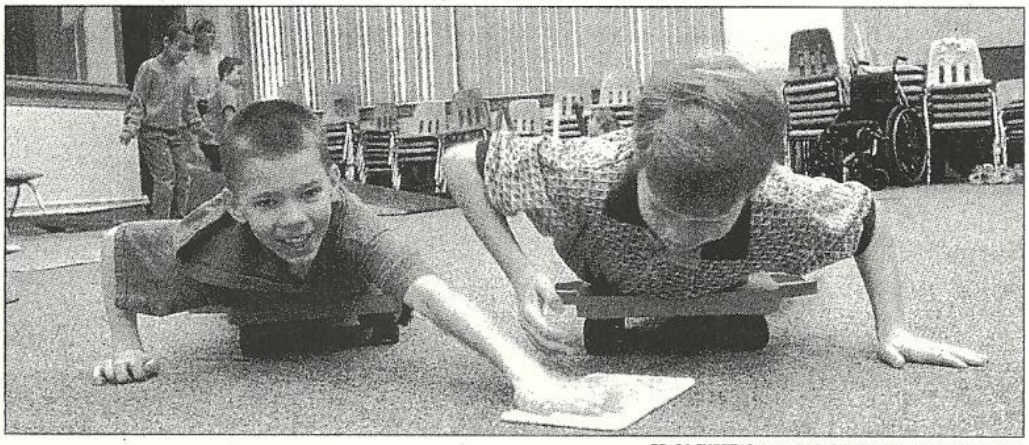
For Americans, this isn't an easy idea. Unlike many other societies, we tend to see the "self" not as in integrated whole, but as four rather separate selves—mental, physical, emotional and spiritual.

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. "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.



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.

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

Orlando Sentinel, 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**

Priceless lesson

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

Orlando Sentinel, 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. 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.

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.

LAMARIUS BREWER/SPECIAL TO THE SENTNEL

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

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 emailed 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]

Is Khan Academy a real 'education solution'?

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted July 12, 2012:

People who are good at what they do should be admired. Salman Khan is good at what he does. He should be admired.

What does Khan do? With his Khan Academy, he "delivers information."

A new Time magazine article identifies him as a 35-year-old hedge fund manager turned YouTube professor who has recorded well over 3,000 digital lectures on math and other subjects, lectures that are online and available free.

Khan believes, says the article, that, with his "video-driven teaching method at its heart," he has "stumbled onto a solution to some of education's most intractable problems. Learners watch his lectures as homework, then go to school where classroom teachers provide personalized help in learning the material he covered in his lecture. This reversal of the usual order of homework and schoolwork is called "flipping" the classroom.

Bill Gates is an enthusiastic fan of flipping — enthusiastic enough to have sent several million dollars Khan's way. "I'd been, frankly, frustrated at how little creative work was being done to use the Web as a core component of instruction," Gates told

Time, “and when I saw this, I thought — yes, he’s got it.” Google, Netflix CEO Reed Hastings, and Irish entrepreneur Sean O’Sullivan have been similarly impressed and have added $10 million to Gates’ several millions.

Is Khan right? Has he “stumbled onto a solution to some of education’s most intractable problems”?

Education has more than its share of those “solutions.” The fact that millions log on to his videos every day, that 15,000 classrooms make use of the lectures, that over 160 million videos have been watched since 2006, and that they’re used in 234 countries, suggests that he’s addressing some of those problems.

The afternoon and evening of July 3, 2012, I went with my wife to a family picnic in the back yard of the home of one of her grandnieces in Fairfield, Ohio. About 40 people, evenly split between adults and kids, attended.

Never having lived closer to her family than about 1,000 miles, and seeing most of them for only a few days a year, I couldn’t be a very active participant in the picnic’s catch-up-on-family-matters conversations. I mostly sat, listened, and watched.

Mostly watched Jonah. Jonah, two years and nine months old. I first noticed him squatted quietly watching his grand-uncle Gene fill dozens of water balloons to about tennis-ball size, tie them off, and hand them to older kids for their water war.

Jonah wasn’t a warrior. When the novelty of the game began to wear off, Gene handed him a filled missile and went off to eat, leaving a stool, the garden hose, a bucket, a sprinkling can, and a handful of unused balloons.

Jonah squeezed his balloon and watched it bulge out. Squeezed it again and again, clearly taken with the feel of it. Eventually, fascinated by the bulges, he began pinching them with a finger and thumb.

A small, protruding bulge gave him an idea. He put it in his mouth and bit down. The balloon exploded in his face, soaking the front of his T-shirt.

Unperturbed, and oblivious of others, he picked up the hose and tried to fit one of the unused balloons over the end of the plastic nozzle. Tried and tried and tried. No luck. Tried with a two other balloons. Still no luck. Giving up, he turned his attention to the spigot, attempted to twist it left and right and finally found that a hard, counterclockwise turn produced a gentle stream.

He studied the stream’s trajectory, pointing it down, up, out, in toward his mouth. He ran water into the bucket, poured it into the sprinkling can, tilted the can, watched as it emptied, then repeated the process.

After 45 minutes or so, his father came, picked him up, swung him in a circle, pitched him up in the air, caught him, then carried him off.

I've no idea what line of work Jonah will enter, but I watched as he laid the groundwork for a career in hydraulic engineering.

Here's a serious problem. To set wise education policy, we need to know how kids learn most efficiently. Notwithstanding the present blind faith in standardized testing, we can only guess at an answer.

Jonah, exploring how a part of the world worked, was obviously learning, and doing so at a deeper level, at a more rapid rate, and with a greater probability of life-long retention than would have been the case had he been strapped in his high chair and lectured on the subject.

But how can we know the level of efficiency of that process? How much had he learned? What sort of test could attach a score to it? Was his curiosity, or a particular product of that curiosity, more deserving of measurement? What practical use could be made of a score for either?

The myriad ways we learn and the number of uncontrollable variables involved put usefully precise evaluation of learner performance far beyond reach. If we can't do it for one kid in one learning situation, we're kidding ourselves if we think that computer-scored tests can evaluate the quality of thought of millions of kids for a year. We've made commercially produced standardized tests so important we're blind to the enormity of their inadequacies and to the damage they're doing to the young, to the teaching profession, and to the society for which the young will soon be responsible.

There being no scientific way to determine with useful precision the relative efficiency of different ways of learning, the judgment of those closest to the process — experienced teachers — is surely the best guide.

I can speak with authority only for one experienced teacher: Myself.

I haven't the slightest doubt that the Number One way that most of us know what we know is what Jonah was demonstrating — autonomous, firsthand, curiosity-driven, wide-ranging, self-directed, trial and error, immediate feedback, personal experience.

Number Two in efficiency is learning through shared experience and the dialogue that ordinarily accompanies it.

The Number Three way we learn — from "delivered information"— is a distant third in teaching-learning efficiency.

If I'm right, we have schooling backwards. On orders from corporate interests and Congress, we've put nearly all of our education eggs in basket Number Three, the least efficient. A few educator outliers use basket Number Two, but their claim that small groups working on projects of their own choosing to learn like gangbusters is widely ignored. Basket Number One — the one Jonah demonstrated — is of no interest at all to policymakers.

A mix of Numbers One and Two would move learners to a whole new level of performance, but the big money is on delivered information, and Khan delivers. He's good. His work fills a niche. He'll help sell a lot of high-tech hardware. He'll hand a crutch to teachers who need it. He'll nudge students along who click on his lectures, provided they're ready to be nudged. He'll get rich, and help manufacturers of standardized tests and test prep materials do the same.

He'll also powerfully reinforce the theory of learning that, more than any other, has brought education to crisis — the belief that pre-packaged, delivered information is how we come to know most of what we know.

Yes, Khan is good. In the kingdom of the blind, the one-eyed man is king.

But a lecture is a lecture. The teaching limitations of delivered information are inherent and familiar to all experienced teachers who pay attention. Flipping classrooms will hardly make a dent in education's most intractable problems. The idea doesn't even come close to meriting the over-the-top head that Time's editors gave the article: "Reboot the School."

Intractable educational problems will begin to disappear when learners' rear ends are gotten off school furniture and allowed out where life is being lived, when learners' eyes are lifted from reference works passed off as textbooks and directed to the real world, when learners' minds are respected too much to treat them as mere storage units for secondhand, bureaucratically selected information.

Intractable problems in education will begin to disappear when kids are not just allowed to chart their own course, but are encouraged to do so, and given means to that end. Too bad there are no policymakers willing to promote that idea, and no rich philanthropists willing to put up encouragement money. **Ω**

2. Problem: Aim

Starting from scratch to find a purpose

Orlando Sentinel, March 13, 2000 (second of an eight-part series on "Rethinking Schools"):

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."*

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

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.

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**

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

Orlando Sentinel, 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?

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

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.

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**

For more on systems, see Section 9.

3. Problem: Overload

In education, sometimes less is more

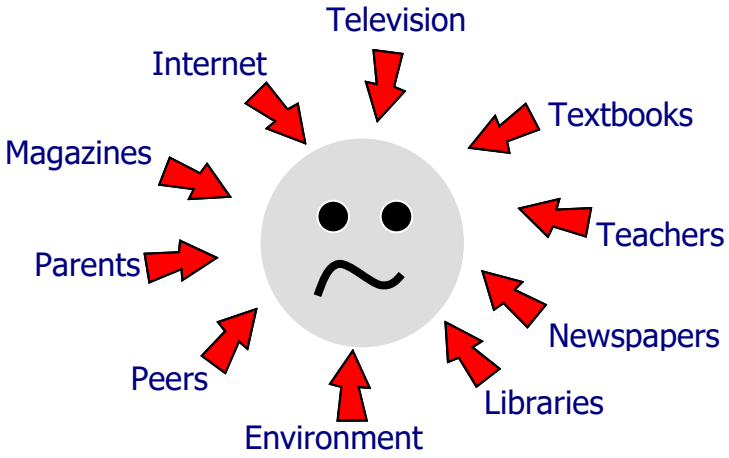
Orlando Sentinel, May 27, 1997

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.[1] 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**

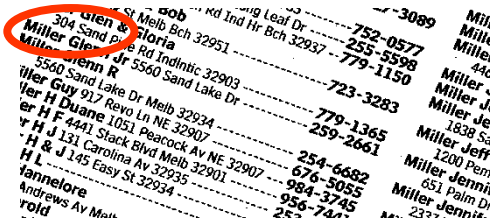
Student brains: Libraries, supermarkets, or junkyards?

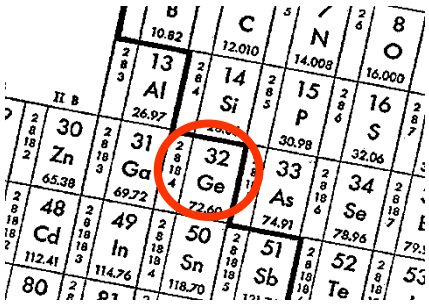
Orlando Sentinel, January 26, 2001:

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.





[1] A detailed description of that system: https://www.marionbrady.com/documents/WWL.pdf

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.

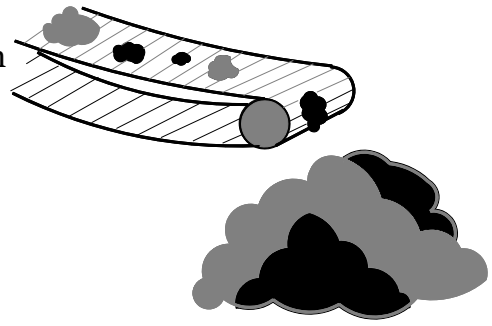
We want to improve our schools. We should, then, be examining carefully the organizing systems that shape them.

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 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**

Students' brains: Another road-building project

Orlando Sentinel, May 29, 2001:

In an earlier op-ed column [Jan. 26, 2001, above—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.

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.

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**

Most textbooks are a waste of money and paper

Orlando Sentinel, 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."

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.

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

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**

'The Procedure' and how it is harming education

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted January 12, 2014:

In a *Wall Street Journal* op-ed,[1] high-profile education reformer Lou Gerstner, Jr., wrote, "We must start with the recognition that, despite decade after decade of reform efforts, our public K-12 schools have not improved."

In a speech to the American Federation of Teachers,[2] multi-billionaire Bill Gates agreed, saying the United States has been "struggling for decades to improve our public schools," and the results have been "dismal."

In his December 19, 2013 *Education Week* blog,[3] Marc Tucker, another influential long-time education reformer, asks, "Why has US education performance flat-lined?"

Like Gerstner, Gates, and Tucker, I don't see any evidence that the army of corporate types who left business suites and corner offices to come to the rescue of American education have done anything but dumb down the public's conception of the ends of public education and the proper means to more acceptable ends.

Corporate reformers have had two decades to make their case that what ails American education is a lack of rigor, and two decades to test their theory that market forces are the surest way to kick-start that needed rigor. To that end, they've introduced competition with a vengeance—kids against kids, parents against parents, teachers

[1] Link no longer available.
[2] https://www.gatesfoundation.org/media-center/speeches/2010/07/american-federation-of-teachers
[3] http://blogs.edweek.org/edweek/top_performers/

against teachers, schools against schools, districts against districts, states against states, nations against nations.

And it hasn't worked. But like all true believers, it doesn't shake their faith that rigor is the key to quality performance, that competition is the key to rigor, and that more of it will make America the winner in the bubble-in-the-right-oval race.

I come to the reform problem from a simpler, more direct perspective. Although at one time or another I've played most of the roles connected to education—student, parent, teacher, researcher, school board member, textbook author, contributor to journals, college professor, consultant, administrator, and so on, I think of myself primarily in the role I most enjoyed and in which I learned the most—a classroom teacher of adolescents, working with kids sent to me against their will, on orders from vague authority figures, behaving as kids could be expected to behave when caged for hours at a time in a small, dull space.

For years I wrote newspaper columns for Knight-Ridder, trying to help general readers think freshly about long-ignored school problems. Below is a response to one of my columns from John Perry, a classroom teacher in central Florida. Read what he has to say and ask yourself how more rigor would solve his problem.

Marion,

Your comments about the SSS [Florida's Sunshine State Standards] hit home for me this year because I ended up teaching middle school science. It is unbelievable what we are asked to do to our students. I expected that middle school science might be divided up into, say, physical, earth, and life science in 6th, 7th, and 8th grade respectively. Well, no, even that would make too much sense. Sixth grade science is a survey course of…well, everything under the sun. We have a 776 page book loaded with very concentrated information. There are 23 chapters:

1. The Nature of Science
2. Measurement
3. Matter
4. Properties and Changes
5. Waves
6. Motion and Forces
7. Work and Simple Machines
8. Views of Earth
9. Resources
10. Atmosphere
11. Weather
12. Climate
13. Ecosystems
14. The Structure of Organisms
15. Classifying living things
16. Bacteria
17. Protists and Fungi
18. Plants
19. Plant Processes
20. Invertebrate Animals
21. Vertebrate Animals
22. Animal Behavior
23. The Solar System and Beyond

Whew! Seem like a tall order for sixth graders to absorb in one year? Even absurd? Yeah. Well, I'm on a block schedule. My students are expected to absorb all of this in ONE SEMESTER! And get this—the team I'm on (myself, a math teacher, and a language arts teacher), was formed by taking the bottom third of the reading scores in sixth grade and putting all those kids together! How do you think they respond to this textbook, with its blizzard of unfamiliar vocabulary? These kids, who most need hands-on concept building, are expected instead to stand in front of a virtual fire hose of information and be blasted. (Please excuse the mixed metaphors!)

The district has two semester exams to diagnose how my students are doing. Soon, they will be tested on FCAT [Florida Comprehensive Achievement Test]. *If they do poorly, the students, the school and I will be labeled failures. Well, there is definitely a failure here, but it isn't me or my kids.*

John

Imagine John as the best middle school science teacher in America. Put him in an expertly administered upper-class suburban school. Assign him smart, healthy, highly motivated kids, drawn from advanced placement classes. Be sure each has two college-educated, happily married parents. Limit his class to no more than a dozen, and schedule it for late morning when they're sharpest.

Now, hand John that 776-page textbook to distribute—the one organized like the contents of a dumpster at a demolition site—and assure him it covers the material that will be on the high-stakes tests.

What will happen? Almost certainly, at the end of the term every kid in John's class will ace the test, and everybody—kids, parents, administrators, school board, the local newspaper, cable news—will be impressed and happy.

Everybody except John. He won't be impressed and happy because (remember?) he's the best middle school science teacher in America, and he knows—notwithstanding the test scores—how little his students actually learned in their race to the end of the textbook. They slam-dunked the test not because they learned a lot of science but because they followed The Procedure.

The Procedure: 1. Take notes during lectures, and hi-lite key sentences in the textbook. 2. Before a big test, load the notes and hi-lited passages into short-term memory. 3. Take the test. 4. Flush short-term memory and prepare for its re-use.

It's no exaggeration to say that just about everybody in the country thinks The Procedure isn't just acceptable but essential. It's so broadly used, so familiar, so taken-for-granted, that many schools and universities go to great pains to accommodate it. Some even have rituals to enhance it.

The Procedure, of course, is called “cramming.” Do it well and it leads steadily up the academic ladder.

But here’s a question: Does the *Procedure* have anything do with educating?

Learning—real LEARNING—starts when, for whatever reason, the learner wants it to start. It proceeds if the aim is clear and what’s being learned connects logically and solidly to existing knowledge. It’s strengthened when mistakes are made, clarifying the potential and limitations of the new knowledge. It’s reinforced when it’s put to frequent, immediate, meaningful, real-world use. It becomes permanent when it’s made part of the learner’s organized, consciously known “master” structure of knowledge.

Slow down for a moment and think about it. Cramming is indisputable proof of the superficiality and inefficiency—even the failure—of what’s going on in most classrooms across America. *What’s crammed wasn’t learned or there would be no need to cram; what’s crammed isn’t learned or it wouldn’t be forgotten.*

In the real world, where it counts, the gap between crammers and learners is vast, and tends to widen over time. Unfortunately, the thus-far-successful “reform” effort to cover the standard material at a standard pace, and replace teacher judgment with machine-scored standardized tests has further institutionalized cramming and hidden the failure its use proves.

What a waste!

Here’s a fact: Information overload is just one of about two-dozen serious problems directly or indirectly connected to our 19th Century core curriculum. Sadly, no, tragically, instead of rethinking that curriculum, starting with its fundamental premises and assumptions, reformers have considered it so nearly perfect they’re determined to force it on every kid in America.

Aren’t we going at the job backwards? Shouldn’t we be doing just the opposite—developing and capitalizing on the learner diversity that enables humankind to adapt to change? **Ω**

4. Problem: Standardization

One size fits all? It doesn't work for dogs—or students

Orlando Sentinel, June 25, 2005, republished in the *Washington Post* "The Answer Sheet" blog, August 12, 2010, with the title shown in the photo below:

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?

The non-educators now running the education show say American kids are lagging ever-farther behind in science and math, and that the consequences of that for America's economic well-being could be catastrophic.

So, what is this rich, advantaged country of ours doing to try to beat out the competition?

Mainly, we put in place the No Child Left Behind program, now replaced by Race to the Top and the Common Core State Standards Initiative.[1] 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

[1] http://www.corestandards.org/

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 was beautifully republished by the New Zealand journal *Education Today*, issue 4-20, in September 2010 (complete with the photo of a Border Collie at work, shown above).

How to waste genius

Orlando Sentinel, 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**

Standardized snake oil

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted December 15, 2010 (Republished by *Truthout*, December 19, 2010)

I was, generally speaking, a fairly well-behaved kid. I've no reasonable explanation, then, for burning a hole in the wall of the one-room school I attended in the late 1930s.

It wasn't an original idea. A precedent had been set by somebody who'd come and gone before I arrived at Union School the previous year as a third grader. He (I can't imagine it was a "she") had heated the steel rod used to stoke the fire in the stove until it was red hot, pressed the end of it against the white-painted interior wood wall near the entrance door, and pushed until it burned all the way through. The result was a very neat black hole about the size of a marble.

Union School, Mason County, WV (recent photo by Brady) – abandoned but still standing.

The blackened area around the hole looked a little like fetching eyelashes.

One cold winter morning, arriving at the tiny school after the nearest neighbor had added fresh coal to the fire and gone, but before anyone else had arrived, it occurred to me that a similar hole three or four inches to the left of the existing hole offered an interesting possibility. Using a black crayon, I could add eyebrows to good effect.

I got the hole done, but not the eyebrows. Sixth grader Naomi arrived, saw the still-smoldering new "eye," and waited at the door to tattle to the teacher.

Confronted by high authority, my eyes-with-eyebrows project seemed less than wise, much less funny. I vaguely recall responding to Miss Woods' observation that I could have burned the school down by mumbling something about the big community tin drinking cup hanging on a nail beside the nearby water cooler. I think I suggested that it provided the necessary insurance against disaster.

She didn't buy it. I was sent home and told to come back with my mother or father, or both.

In the years since I burned that hole, I've stayed connected to schools and schooling as a student, teacher, administrator, college professor, writer of texts and professional books, contributor to academic journals, education columnist for newspapers, blogger, visitor to schools around the world, and consultant to publishers, states and foundations.

And for the last 20 years, I've done my best to burn holes in the myth that standardized tests are a means to the end of improving America's schools. I haven't the slightest doubt that if the testing tail continues to wag the education dog, it will kill the dog and with it the ability of future generations to cope with their fates.

It's not that America's schools don't have really serious problems. They certainly do. And I'm not talking just about big, inner city institutions surrounded by blight, encircled by barbed wire, entered through metal detectors, patrolled by cops, and churning out dropouts, future prison inmates, and other social problems.

There are many of those, but I'm not singling them out. As a mountain of research makes clear, what ails them is primarily long-term poverty and the myriad problems poverty spawns. That's a matter I'm not qualified to write about, but for those who think test scores actually mean something important, I'll note in passing that Finland always ranks near the top, and their child poverty rate is less than 3%, while America's rate is over 20% and climbing rapidly. Those who believe skilled teachers can level the education playing field enough to erase that difference in the quality of the material they're given to work with aren't just not in the game, they're not even in the ball park.

Yes, include those blighted urban schools as a target of my criticism, but include also America's many well-ordered schools in quiet, leafy suburbs. Include schools in top-scale ZIP codes that have been adopted by venture capitalists who see to it that every hint of a need is instantly met. Include schools where, before opening bells, Benz, Bentley, and BMW doors swing open and kids slide out to be greeted by name by headmasters and faculties. And include schools where chauffeur-driven limousines deliver their body-guarded charges because school policy forbids noisy arrivals by helicopter. (Yes, there are such schools.)

Consider as failing every school – public, charter, private, whatever – that assumes that corporately produced, standardized tests say something important about something important. Using test scores to guide education policy makes about as much sense as using the horoscope of whoever happens to be Secretary of State to guide US foreign policy.

That standardized tests are a useful tool for guiding education reform is a myth, pure and simple – a myth constructed from ignorance and perpetuated by misinformation, or conjured from hope and reinforced by cherry-picked data.

I grew up in Appalachia where the old adage, "You can't make a silk purse out of sow's ear" was familiar speech. Standardized tests are a "sow's ear." The only things they can measure accurately are random bits of information stored in short-term memory.

But even if every kid remembered everything taught, it's hard to imagine a more wasteful use of teacher and learner time and taxpayer money than preparing for and taking standardized tests.

When the world changed little or not at all from generation to generation and nearly everyone was illiterate, unaided memory was essential. What needed to be known existed in the memories of the elders, and the young, living in that static world, either learned it from them or suffered the consequences.

That era is long gone. It's over. Finished. It began to end when writing was developed, and its demise proceeded with the invention of the printing press, cheap books, photography, moving pictures, television, the Internet, search engines, and other means of information gathering and archiving. In today's world, tests of unaided memory are about as useful as (insert another Appalachian slang expression having to do with the anatomy of boar hogs).

Standardized, subject-matter tests are worse than a waste. We're spending billions of dollars and instructional hours on a tool that measures one thought process to the neglect of all others, wreaks havoc on the minds and emotions of teachers and learners, and diverts attention from a fundamental, ignored problem.

That problem? Longshoreman and college professor Eric Hoffer summed it up a lifetime ago: "Because the world is dynamic, the future belongs not to the learned but to learners."

Read that sentence again. Then read it again. Even if standardized tests didn't cost billions, even if they yielded something that teachers didn't already know, even if they hadn't narrowed the curriculum down to joke level, even if they weren't the main generators of educational drivel, even if they weren't driving the best teachers out of the profession, they should be abandoned because they measure the wrong thing.

The future belongs not to the learned but to learners. American education isn't designed to produce learners, and the proof of that contention is the standardized test.

America's system of education is designed to clone the learned. And motivated either by ignorance or greed, the wealthy and powerful, using educationally naïve celebrities as fronts, are spending obscene amounts of money to convince politicians, pundits, policymakers, and the public that this is a good and necessary thing.

Thus far, they've been wildly successful. If they're not stopped, those now sitting in our classrooms won't just witness America's descent into Third World status, they'll accelerate it. **Ω**

Eight problems with Common Core standards

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted August 13, 2012:

E. D. Hirsch, Jr.'s book, *Cultural Literacy: What Every American Needs to Know*, was published March 1, 1987.

So it was probably in March of that year when, sitting at a dining room table in an apartment on Manhattan's Upper East Side, my host — publishing executive, friend, and fellow West Virginian — said he'd just bought the book. He hadn't read it yet, but wondered how Hirsch's list of 5,000 things he thought every American should know differed from a list we Appalachians might write.

I don't remember what I said, but it was probably some version of what I've long taken for granted: Most people think that whatever they and the people they like happen to know, everybody else should be required to know.

In education, of course, what it's assumed that everybody should be required to know is called "the core." Responsibility for teaching the core is divvied up between teachers of math, science, language arts, and social studies.

Variously motivated corporate interests, arguing that the core was being sloppily taught, organized a behind-the-scenes campaign to super-standardize it. They named their handiwork the "Common Core State Standards" to hide the fact that it was driven by policymakers in Washington D.C., who have thus far shoved it into every state except Alaska, Minnesota, Nebraska, Texas, and Virginia.

This was done with insufficient public dialogue or feedback from experienced educators, no research, no pilot or experimental programs — no evidence at all that a floor-length list created by unnamed people attempting to standardize what's taught is a good idea.

It's a bad idea. Ignore the fact that specific Common Core State Standards will open up enough cans of worms to keep subject-matter specialists arguing among themselves forever. Consider instead the merit of Standards from a general perspective:

One: Standards shouldn't be attached to school subjects, but to the qualities of mind it's hoped the study of school subjects promotes. Subjects are mere tools, just as scalpels, acetylene torches, and transits are tools. Surgeons, welders, surveyors — and

teachers — should be held accountable for the quality of what they produce, not how they produce it.

Two: The world changes. The future is indiscernible. Clinging to a static strategy in a dynamic world may be comfortable, even comforting, but it's a Titanic-deck-chair exercise.

Three: The Common Core Standards assume that what kids need to know is covered by one or another of the traditional core subjects. In fact, the unexplored intellectual terrain lying between and beyond those familiar fields of study is vast, expands by the hour, and will go in directions no one can predict.

Four: So much orchestrated attention is being showered on the Common Core Standards, the main reason for poor student performance is being ignored—a level of childhood poverty the consequences of which no amount of schooling can effectively counter.

Five: The Common Core kills innovation. When it's the only game in town, it's the only game in town.

Six: The Common Core Standards are a set-up for national standardized tests, tests that can't evaluate complex thought, can't avoid cultural bias, can't measure non-verbal learning, can't predict anything of consequence (and waste boatloads of money).

Seven: The word "standards" gets an approving nod from the public (and from most educators) because it means "performance that meets a standard." However, the word also means "like everybody else," and standardizing minds is what the Standards try to do. Common Core Standards fans sell the first meaning; the Standards deliver the second meaning. Standardized minds are about as far out of sync with deep-seated American values as it's possible to get.

Eight: The Common Core Standards' stated aim — "success in college and careers"— is at best pedestrian, at worst an affront. The young should be exploring the potentials of humanness.

I've more beefs, but like these eight, they have to do with the quality of education, and the pursuit of educational quality isn't what's driving the present education reform farce.

An illustration: As I write, my wife is in the kitchen. She calls me for lunch. The small television suspended under the kitchen cabinets is tuned to CNN, and Time cover girl Michelle Rhee is being interviewed.

"On international tests," she says, "the U.S. ranks 27th from the top."

Michelle Rhee, three-year teacher, education reactionary, mainstream media star, fired authoritarian head of a school system being investigated for cheating on standardized tests, is given a national platform to misinform. She doesn't explain that,

at the insistence of policymakers, and unlike other countries, America tests every kid — the mentally disabled, the sick, the hungry, the homeless, the transient, the troubled, those for whom English is a second language. That done, the scores are lumped together. She doesn't even hint that when the scores of the disadvantaged aren't counted, American students are at the top.

If Michelle Rhee doesn't know that, she shouldn't be on CNN. If she knows it but fails to point it out, she shouldn't be on CNN.

It's hard not to compare Rhee with Jennifer, a friend of my oldest son. He wrote me recently:

> *…I asked Jenn if she was ready for school.*
>
> *"I'm waiting for an email from my principal to find out if I can get into my classroom a week early."*
>
> *"Why a whole week?"*
>
> *"To get my room ready."*
>
> *She teaches second graders. I ask her why she loves that grade. She laughs and says, "Because they haven't learned to roll their eyes yet."*
>
> *But I know it's much more than that. Her sister was down from Ohio for Jenn's birthday, and when she asked her what she wanted, Jenn said she needed 18 sets of colored pencils, 18 boxes of #2 pencils, 18 boxes of crayons, construction paper, name tags and so on — $346 dollars total.*
>
> *She's been doing this for 25 years. I'm sure she makes less than I do, but they could probably cut her salary 25 or 30% and she'd still want to get into her room early."*

Rhee gets $50,000 a pop plus first-class travel and accommodations for putting in an appearance to tell her audiences what's wrong with the Jennifers in America's schools, and what clubs should be swung or held over their heads to scare them into shaping up.

Future historians (if there are any) are going to shake their heads in disbelief. They'll wonder how, in a single generation, the world's oldest democracy dismantled its engine — free, public, locally controlled, democratic education.

If they dig into the secretive process that produced the Common Core State Standards, most of their questions will be answered. Ω

5. Problem: Standardized Tests

School tests: A circus

Orlando Sentinel, 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.

Educationally, the show is unlikely to 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.

> **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**

NCLB is dead and gone, but it's core keeps lingering on.

Education by recall cheats students' full mentality

Orlando Sentinel, 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**

Postscript: Machine-scored tests can also evaluate low-level application, e.g. "Identify the verbs in the following sentences, and mark them 'transitive' or 'intransitive.' However, if the mental process is any of the other six listed in this article, or one of many others (infer, compare, contrast, etc.), evaluating the quality of thought can only be done by trained teachers. Real higher-level thinking—the kind that marks true understanding of complex subjects and solves the future's problems—is far too neglected by conventional education, at our peril.

Standardized tests: Beware a rubber tape measure

Orlando Sentinel, 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**

Testing? YES! Standardized Testing? NO!

Orlando Sentinel, 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.

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....."

Student ability to merely remember and parrot back words from textbooks or lectures is mistaken for genuine learning.

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**

Unanswered questions about standardized tests

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted April 26, 2011:

Standardized tests[1] are enhancing and destroying reputations, opening and closing doors of opportunity, raising and lowering property values, starting and ending professional careers, determining the life chances of the young, and shaping the intellectual resources upon which America's future largely hinges.

You might think that with so much riding on the tests, every civic-minded person in the country would be demanding transparency, proof of validity, assurance that every item on every test had been examined from every possible perspective.

If you think that, you think wrong. The corporately engineered education "reform" campaign has been so slick that standardized testing is now taken for granted. The issue isn't to test or not to test, but how to squeeze them all in.

America has bought an education pig in a poke peddled by the U.S. Chamber of Commerce and its allies, and packaged by Congress. The animal is a freak, shaped by naiveté, political ideology, unexamined assumptions, ignorance of history, and myths.[2]

This vast experiment with kids' minds and America's future was put in place without broad national debate, without in-depth research, without trial pilot programs, and without answering questions posed again and again by those who know something

[1] http://www.washingtonpost.com/blogs/answer-sheet/post/resistance-to-test-based-school-reform-is-growing/2011/04/18/AFkb0n0D_blog.html

[2] http://www.washingtonpost.com/blogs/answer-sheet/post/the-myths-of-standardized-testing/2011/04/14/AFNxTggD_blog.html

about teaching—know about it because, unlike those making policy, they've actually taught.

Questions, it goes without saying, are important. All human-made disasters have at least one thing in common—those responsible acted without first asking good questions.

Here are some of the questions educators ask that have yet to be answered. Decide for yourself if ignoring them doesn't guarantee educational and cultural disaster:

1. Given the near-instant accessibility of information made possible by the Internet, the traditional emphasis on learners storing information in their heads no longer makes much sense. The young need to learn to process and apply information, tasks that require them to infer, hypothesize, synthesize, relate, generalize, value, and so on.

Questions: Have standardized tests made the switch from measuring how much information test-takers can remember, to measuring their ability to process and apply information? If so, are the computers that process the tests able to tell the difference between, say, good hypotheses, generalizations, and value judgments, and fair or poor ones?

2. As small children and illiterates prove, and everyone's daily experience demonstrates, there are myriad ways of learning that don't involve reading words or playing with numbers. Indeed, most of what most people know hasn't been learned that way.

Questions: Are test items that require mere manipulation of symbols robbing America of broad and deep pools of talent and experience more complex than paper-and-pencil tests can measure? Are those who learn in ways that aren't tested being stamped "Not Very Smart" and shoved aside or out?

3. In times of rapid and accelerating social change such as the present era, the ability to abandon attachment to the status quo and adapt to complicated, unexpected realities is essential to survival. Adaptation requires imagination, creativity, originality, ingenuity, vision.

Questions: Can standardized tests measure and attach useful numbers to gradations of these qualities? If they can, why are they not already doing so?

4. It's assumed that standardized tests[1] measure test-taker knowledge. What they actually measure is something else—test-taker ability to guess what the writer of a particular test item was thinking.

Standardized tests are created by and for the dominant culture. They will, then, reflect that culture. Even the sequence in which words appear in a sentence can make a difference in the ability of a test-taker reared in a subculture to guess what the

[1] http://www.washingtonpost.com/blogs/answer-sheet/post/myths

dominant-culture writer of the test item was thinking. To be fair and useful, writer and reader must be culturally aligned.

Questions: How likely is it that in a society as culturally diverse as is ours, anything even close to an acceptable level of writer-reader alignment can be achieved? Is lack of alignment a major reason for the so-called "achievement gap," or is it merely illustrating what Albert Einstein was talking about when he said that if we judged a fish by its ability to climb a tree, it would spend its whole life believing it was stupid?

Those barely begin a list of unanswered questions about standardized test items. Who decides what's important enough to test? Using what criteria? How wise is it to hand schools over to corporations or other organizations with their own agendas? Since "hands-on" learning doesn't lend itself to standardized testing, are the tests shoving education even farther away from how humans learn best? Is the drive to standardize kids stifling the human diversity essential to societal functioning?

Does limiting teacher autonomy by simplistic "remote" testing make the profession unappealing to those with the most to offer the young? Is ever-greater centralization of decision-making at odds with democratic values? Are standardized tests diverting attention from a whole range of valuable skills, such as the ability to play a musical instrument, draw a picture, tell a story, swim a stream, repair an air conditioner, nurture a plant, care for others? Where's the research proving there's a relationship between standardized test scores and making a living and a life?

These and similar questions about standardized testing are central to educating. For at least two decades, the questions have been directed to the U.S. Department of Education, Congress, a succession of Administrations, liberal and conservative think tanks, and officials in several states. I know this for a fact because I've asked the questions myself, beginning pre-Internet, when doing so required hard copy letters and U.S. postage.

The questions remain not just unanswered, but unacknowledged.

Choose your explanation for the refusal of those in authority to answer the questions. I've chosen mine: Policymaker ignorance and arrogance. It may also be that certain corporate types think standardized tests help shape an amiable, compliant workforce.

Do educators need to be held accountable? Absolutely. But using standardized tests for that purpose parallels the Vietnam-era logic of destroying a village in order to save it. **Ω**

The important things standardized tests don't measure

Washington Post, "The Answer Sheet" blog by Valerie Strauss. Posted March 1, 2015.

As my students were taking their seats, Myrna, sitting near my desk, said she'd just read a magazine article about secret societies in high school. What, she asked, did I know about them?

I knew nothing—had never even heard of them—but the matter was interesting enough to quickly engage my 11th Grade English class, so I let the conversation continue. Someone suggested making it a research project and I told them to have at it.

The school library wasn't much help, but somebody figured out how to contact the student editor of the school newspaper in a town mentioned in the article and wrote her a letter. She answered, other contacts were made, and kid-to-kid communication began. How did the societies get started? Who joined them? Why? How? Did they create problems? If so, what kind? Were the societies more than just temporary cliques? How were teachers and administrators reacting?

Answers generated more questions. My students thought, wrote, took sides, argued, learned. I mostly watched.

That happened in a class in a semi-rural high school in northeastern Ohio. The participants—those still alive—are now almost eighty years old. I'd be willing to bet that if any of them remember anything at all about the class, that research project would be it.

I wasn't smart enough to realize it at the time, but I was seeing a demonstration of something extremely important, that real learning is natural and inherently satisfying. Myrna's question kicked off genuine learning—self-propelled and successful not because the work was rigorous and the kids had grit, but because it was driven by curiosity, because satisfaction was immediate, because it was real-world rather than theoretical, because it was concrete rather than abstract, because it required initiative and action, and because it was genuinely important, dealing as it did with complex social and psychological issues shaping human behavior.

Even if it leads to dead ends, research—at least for the learner pursuing it—is intellectually productive. It's also, obviously, non-standard. The skills it develops and the insights it yields aren't predictable, even to those engaged in it. That's one of the reasons standardized tests assembled in the office cubicles of Pearson, McGraw-Hill and other test manufacturers can't do the job that most needs doing. They can't measure and attach a meaningful number to the quality of original thought.

Arthur Costa, Emeritus Professor, California State University, summed up the thrust of current test-based "reform' madness:

> "What was educationally significant and hard to measure has been replaced by what is educationally insignificant and easy to measure. So now we measure how well we taught what isn't worth learning."

The truth of that isn't acknowledged by Jeb Bush, Bill Gates, Lou Gerstner, Arne Duncan and the other business leaders and politicians responsible for initiating and perpetuating the standardized, high-stakes testing craziness. They either can't see or won't admit the shallowness of their claim that "if you can't measure it, you can't manage it." Challenged, they dismiss those who disagree with them as defenders of the status quo.

Using the scores on standardized tests to shape the life chances of kids, determine the pay and reputations of teachers, gauge the quality of school administrators, establish the worth of neighborhood schools, or as an excuse to hand public schools over to private, profit-taking corporations is, at the very least, irresponsible. If, as it appears, it's a sneaky scheme to privatize America's public schools without broad public dialogue, it's unethical.

Figuring out how to measure original thought isn't the only challenge test manufacturers need to address. Their tests:

- Provide minimal to no useful feedback to classroom teachers
- Are keyed to a deeply flawed curriculum adopted in 1893
- Lead to neglect of physical conditioning, music, art, and other, non-verbal ways of learning
- Unfairly advantage those who can afford test prep
- Hide problems created by margin-of-error computations in scoring
- Penalize test-takers who think in non-standard ways (which the young frequently do)
- Radically limit teacher ability to adapt to learner differences
- Give control of the curriculum to test manufacturers
- Encourage use of threats, bribes, and other extrinsic motivators
- Use arbitrary, subjectively-set pass-fail cut scores
- Produce scores which can be (and sometimes are) manipulated for political purposes
- Assume that what the young will need to know in the future is already known
- Emphasize minimum achievement to the neglect of maximum performance
- Create unreasonable pressures to cheat
- Reduce teacher creativity and the appeal of teaching as a profession
- Are unavoidably biased by social-class, ethnic, regional, and other cultural differences
- Lessen concern for and use of continuous evaluation
- Have no "success in life" predictive power
- Unfairly channel instructional resources to learners at or near the pass-fail "cut score"
- Are open to massive scoring errors with life-changing consequences
- Are at odds with deep-seated American values about individuality and worth
- Create unnecessary stress and negative attitudes toward learning
- Perpetuate the artificial compartmentalization of knowledge by field
- Channel increasing amounts of tax money into corporate coffers instead of classrooms

- Waste the vast, creative potential of human variability
- Block instructional innovations that can't be evaluated by machine
- Unduly reward mere ability to retrieve secondhand information from memory
- Subtract from available instructional time
- Lend themselves to "gaming"—use of strategies to improve the success-rate of guessing
- Make time—a parameter largely unrelated to ability—a factor in scoring
- Create test fatigue, aversion, and an eventual refusal to take tests seriously
- Undermine the fact that those closest to the work are best-positioned to evaluate it
- Don't work. The National Academy of Sciences, 2011 report to Congress: The use of standardized tests "has not increased student achievement."

Most people—including many educators—don't object to standardized tests, just think there are too many, or the stakes shouldn't be so high, or that some items aren't grade-level appropriate, etc.

I disagree. I think standardized tests aren't just a monumental waste of money and time, but are destroying the institution and the profession in myriad unsuspected ways.

Responsibility for evaluating learner performance—all of it—should be returned to those best positioned to do it: Classroom teachers. Period.

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Note: This is the original version submitted for publication; minor editing changes (paragraph 5) were made in the published version. MB

6. Problem: Fragmentation

The 9th problem with the Common Core standards

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted September 16, 2012. (Note that the precursor column is on page 35.)

On August 15, the Washington Post's "The Answer Sheet" ran a column by me titled "Eight Problems with the Common Core Standards."

Marc Tucker, long-time major player in the current test-based education reform effort, in an Education Week "Top Performers" blog, took me to task with a piece called "8 Problems With the Common Core State Standards? I Don't Think So."[1]

My Washington Post piece was a little over 1,000 words. Mr. Tucker's response was twice that. If I were to respond point by point to his objections to my eight criticisms of the standards— which I'd really like to do — it would almost certainly double that word count. Few readers would stick with me for 4,000 words, even if editors were willing to publish them.

I'll stand by my criticisms, but try to move the dialogue along by adding a ninth. I'd have included it before, but couldn't squeeze it into a paragraph.

Mr. Tucker buys the conventional wisdom, that the subjects that make up the core — math, science, language arts, and social studies — "cover" the important stuff that kids need to know, from which it follows that anything that nails down more precisely what actually gets covered is a good thing. Ergo: the Common Core Standards.

He says, "…the core academic disciplines (the core subjects in the school curriculum) provide the conceptual underpinning for deep understanding of virtually everything we want our students to know."

Most people agree, including most teachers, especially younger ones. That's what they've been taught, and experience hasn't yet caused them to question orthodoxy.

I disagree, not about the standards providing conceptual underpinning for the core subjects (which I've never questioned). I take issue with the contention that the standards provide "deep understanding of virtually everything we want students to know…"

I'm not alone. Buckminster Fuller, Kurt Vonnegut, Alfred North Whitehead, Felix Frankfurter, Harlan Cleveland, Neil Postman, John Goodlad, David Orr, Ernest Boyer,

[1] http://blogs.edweek.org/edweek/top_performers/2012/09/8_problems

Arnold Thackray, and dozens of other nationally and internationally known and respected people are on my side of the issue.

But we have a problem. The idea we're trying to get across isn't part of the current education reform dialogue. That means that in a few hundred words, I have to try to introduce a new (and very abstract) idea, explain why it's of fundamental importance but at odds with the standards, and offer an alternative.

Here's that idea, as articulated by Peter M. Senge, a professor at the Massachusetts Institute of Technology. In his book, *The Fifth Discipline*, he says:

"From a very early age, we are taught to break apart problems, to fragment the world. This apparently makes complex tasks and subjects more manageable, but we pay a hidden, enormous price. We can no longer see the consequences of our actions; we lose our intrinsic sense of connection to a larger whole."

That "larger whole" is reality. We want kids to make better sense of it. To that end, we send them off to study school subjects that explain various parts of it. We don't, however, show them how those parts fit together, relate, interact, elaborate, and reinforce each other. When the bell rings, off they go to study a different subject that, as far as they can tell, is little or not at all related to the one they just left.

As the brief slideshow "The Invisible Elephant"[1] illustrates, this is a first-order problem, and the Common Core Standards ignore it. Locking the core subjects in place tells the world that America thinks a curriculum patched together in 1892 by ten college administrators, a curriculum that reflects the industrial policy of the era, a curriculum that fails to acknowledge the fundamental, integrated nature of reality, is the best way to organize knowledge.

It's not. Systems theory as it developed during World War II is far better. Period. It doesn't replace the core subjects (which I've never advocated), just makes them working parts of a single, simpler, more efficient "master" mental organizer.

This is absolutely central to learning. Knowledge grows as we connect bits of it — as we discover relationships between, say, street width and sense of community, between birth order and certain personality traits, between capital investment decisions and political stability.

Compartmentalizing knowledge gets directly in the way of the basic process that makes kids (and the rest of us) smarter.

That systems thinking integrates knowledge isn't an original idea. I'm just passing it along and offering a way to operationalize it.

[1] https://www.marionbrady.com/Powerpoint/TheInvisibleElephant.swf

A little story: Years ago I realized that what educators like John Goodlad, Neil Postman, Alfred North Whitehead, Ernest Boyer and others were saying in books, articles, and speeches wasn't making any difference in what was actually happening in classrooms. Knowing it isn't always easy to translate theory into practice, I wrote a course of study for adolescents that showed how systems theory could help them see the connected nature of all knowledge and the minute-by-minute way they were experiencing it. [*Connections: Investigating Reality*, Now retitled *Introduction to Systems*—ed.]

I chose to write for middle schoolers because they hadn't yet been thoroughly programmed by traditional instruction to compartmentalize what they knew, and because an earlier project I'd undertaken for Prentice-Hall, Inc. had led to friendships with several middle school principals around the country.

I contacted them. Would they be willing to pilot my course of study and give me feedback so I could refine it?

Nobody turned me down. Everything was in place for the fall of the year, then No Child Left Behind became law, and that was the end of that. I got letters and phone calls from the principals apologizing for having to back out of their commitment. It was clear to them that raising test scores, not improving kids' ability to make better sense of experience, was now the name of the education game.

And so it remains. Over the years, with my brother's help, I've continued to play with the course of study,[1] thinking some rebel school system somewhere might pilot and help improve it, but the money and power behind the "standards and accountability" juggernaut probably make it unstoppable. The standards have been swallowed by just about everybody, and as soon as they've been digested, Pearson, McGraw-Hill, Educational Testing Service, and other manufacturers of standardized tests will be ready with contracts in hand for computerized tests in numbers sufficient to crash web servers.

The tests, of course, will build in a failure rate set by some faceless decision-maker — an easily operated spigot for meeting stockholder expectations. Open it — boost the failure rate — and up go sales of tests, test prep tools, instructional materials. And, of course, profits.

Even if I'm wrong about the eight other problems with the Common Core Standards (and I'm not), I don't see any wiggle room on this one. If I'm right, the current reform effort's centralizing of control of education, its micromanaging of classrooms by non-educators, its blocking of all innovation not tied to the core, and its reliance on destructive, simplistic tests that fail to take account of the fundamental nature of

[1] https://www.marionbrady.com/IntroductiontoSystems.asp

knowledge, and of human complexity and variability, will, in Senge's words, exact an "enormous price."

That price will be the inability of our children and our children's children to cope with a future shaping up to be more challenging than anything humans have thus far faced. **Ω**

A paradigm shift schools need now — and it's not Common Core, tech or rigor

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted November 19, 2014. (Note: This version differs slightly from that posted on the blog):

Modern education, worldwide, has lost sight of its primary mission—helping humankind survive.

Survival requires adapting to technological, environmental, demographic, and cognitive change. Adapting to change requires new knowledge. New knowledge comes primarily from the discovery of relationships between parts of reality not previously thought to be related.

Because the math-science-language arts-social studies "core" curriculum ignores important fields of study, and fails to treat those it doesn't ignore as parts of an integrated whole, it radically limits relationship-discovery options. Locking the core in permanent place with the Common Core State Standards perpetuates the most serious problem with modern education—its imagination-limiting boundaries.

Below, from my much longer list, nationally and internationally known and respected scholars weigh in on the problem:

Leon Botstein: "We must fight the inappropriate fragmentation of the curriculum by disciplines…" *The Chronicle of Higher Education*, December 1, 1982, p. 28

Neil Postman: "There is no longer any principle that unifies the school curriculum and furnishes it with meaning." *Phi Delta Kappan*, January 1983, p. 316

John Kemeny: "The problems now faced by our society transcend the bounds of the disciplines." Quoted by William Newell in *Liberal Education*, Association of American Colleges, 1983, Vol. 69, No. 3

Ernest Boyer: "All of our experience should have made it clear by now that faculty and students will not derive from a list of disjointed courses a coherent curriculum revealing the necessary interdependence of knowledge." (Paraphrased by Daniel Tanner in his review of Boyer's book *High School*. *Phi Delta Kappan*, March 1984, p. 10)

John Goodlad: "The division into subjects and periods encourages a segmented rather than an integrated view of knowledge. Consequently, what students are asked to relate to in schooling becomes increasingly artificial, cut off from the human experiences subject matter is supposed to reflect." *A Place Called School*, McGraw-Hill, 1984, p. 266

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." *Change*, July/August 1985, p. 20)

Robert Stevens: "We have lost sight of our responsibility for synthesizing knowledge." (*Liberal Education*, Vol. 71, No. 2, 1985, p. 163)

Arnold Thackray: "The world of our experience does not come to us in the pieces we have been carving out." Quoted in *The Chronicle of Higher Education*, October 1987, p. A 14

Buckminster Fuller: "American education has evolved in such a way it will be the undoing of the society." (Quoted in *Officer Review*, March 1989, p.5)

David William Cohen: "Testing companies, textbook publishers, teacher specialists, associations representing specific content areas, and other agencies all speak in different and often inconsistent voices…The U.S. does not have a coherent system for deciding on and articulating curriculum and instruction." *(Phi Delta Kappan*, March 1990, p. 522

Peter M. Senge: "From a very early age, we are taught to break apart problems, to fragment the world. This apparently makes complex tasks and subjects more manageable, but we pay a hidden, enormous price. We can no longer see the consequences of our actions; we lose our intrinsic sense of connection to a larger whole." *The Fifth Discipline*, Currency Doubleday 1990, p.3

Theodore Sizer: "The fact is that there is virtually no federal-level talk about intellectual coherence. The curricular suggestions and mandates leave the traditional 'subjects' in virtually total isolation, and both the old and most of the new assessment systems blindly continue to tolerate a profound separation of subject matters, accepting them as conventionally defined… The crucial, culminating task of *making sense of it all*, at some rigorous standard, is left entirely to [the student]." School Reform and the Feds: The Perspective from Sam. *Planning and Changing*, v22 n3-4 p. 248-52 1991

Thomas Merton: "The world itself is no problem, but we are a problem to ourselves because we are alienated from ourselves, and this alienation is due precisely to an inveterate habit of division by which 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." *Contemplation in a World of Action*, Paulist Press, 1992, p.153)

David W. Orr: [Formal schooling] "…imprints a disciplinary template onto impressionable minds and with it the belief that the world really is as disconnected as the divisions, disciplines, and subdivisions of the typical curriculum. Students come to believe that there is such a thing as politics separate from ecology or that economics has nothing to do with physics." *Earth in Mind*, Island Press, 1994, p.23

The Common Core State Standards, high-stakes testing, school choice, vouchers, value-added measurement, replacing public schools with charters, abolishing teacher tenure, busting unions, winning international competitions, instilling grit, increasing rigor, putting mayors in charge, grading schools, adopting new technology, flipping classrooms, increasing funding, going back to basics, firing the worst teachers, (your favorite silver bullet here _____) –none of those will do what needs doing.

Schools are in the knowledge business. Not until curricula respect the holistic, systemic nature of knowledge will they begin to meet their responsibility. Deal successfully with the problem, and the schooling that emerges will be so illuminating, so powerful, so relevant, so useful, so satisfying, so easily taught and learned, it will change everyone it touches.

Note: A free e-book, *What's Worth Learning?* (http://www.marionbrady.com/documents/WWL.pdf) on the subject explores the problem. A free adolescent-friendly course of study, *Introduction to Systems* (http://www.marionbrady.com/IntroductiontoSystems.asp) illustrates a solution. **Ω**

7. Problem: Misguided Reform

How ed reformers push the wrong theory of learning

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted August 24, 2010. *(Note: This was reprinted by Truthout on September 24, 2010.)*

In alphabetical order: Mike Bloomberg, mayor of New York City. Eli Broad, financier and philanthropist. Jeb Bush, ex-Florida governor and possible 2012 presidential contender. Arne Duncan, U.S. Secretary of Education. Bill Gates, business magnate and philanthropist. Joel Klein, chancellor of New York City schools.

In education issues, mainstream media sometimes call these gentlemen, "The New Progressives." They're major movers and shakers in the current reform effort.

None is, or has ever been, a teacher. Many think that's a very good, even a necessary thing. It's widely believed that American education is a mess, that teachers deserve most of the blame, and that they either can't or won't clean the mess up. What's needed, it's thought, are no-nonsense leaders – CEOs from business, lawyers, politicians, ex-military officers.

The New Progressives are on a roll. Their views are sought after and respected by congressional committees. They have money, and cash-starved school districts will do whatever it takes to get some of it. Their press conferences are well-attended. Most newspaper editorial boards share their perspective, so their op-eds get published. The Common Core State Standards Initiative[1] they strongly supported -- if not helped engineer -- has already been adopted by more than half the states. Leading Democrats and Republicans are on board. Those who question their top-down approach to reform have been neutralized by labeling them "obstacles to progress," "reactionaries," "union shills."

A recent press release provides an example of the New Progressives' long reach: "NBC Universal presents 'Education Nation,' an unprecedented week-long event examining and redefining education in America." The event will be held in Rockefeller Center in September, 2010. The two leaders with top billing: Bloomberg and Duncan.

The New Progressives and their fans have something else in common besides running the education reform show. They share a big idea – a theory about how humans learn.

Let's call it "Theory T." "T" stands for "Transfer."

Theory T didn't emerge from successful teaching experience, and it's not backed by research, but it has something even more useful going for it: The Conventional Wisdom.

[1] http://www.corestandards.org/

It's easily the New Progressives' most powerful asset, for much of the general public (and a disturbing percentage of teachers) already subscribe to it. Because its validity is taken for granted, Theory T doesn't even have to be explained, much less promoted.

Theory T says kids come to school with heads mostly empty. As textbooks are read, information transfers from pages to empty heads. As teachers talk, information transfers from teachers' heads to kids' heads. When homework and term papers are assigned, kids go to the library or the Internet, find information, and transfer it from reference works or Wikipedia. Bit by bit and byte by byte, the information in their heads piles up.

At an August conference in Lake Tahoe, California, Bill Gates. clinched his Theory T credentials ."Five years from now," he said, "on the web for free you'll be able to find the best lectures in the world."

Let the transfer process begin!

Measuring the success of Theory T learning is easy and precise – just a matter of waiting a few days or weeks after the transfer process has been attempted and asking the kid, "How much do you remember?"

No research says how much of what's recalled at test time remains permanently in memory, nor to what practical use, if any, that information is later put, but that's of no concern to Theory T proponents. Their interest in performance ends when the scores are posted.

There's another, less familiar theory about how humans learn. Those who subscribe to it – mostly teachers who've spent many years working directly with learners – aren't backed by big money, don't get mainstream media attention, aren't asked to testify before congressional committees, and can't organize week-long affairs in Rockefeller Plaza, all of which help explain the second theory's unfamiliarity.

Those who accept the alternative to Theory T don't think kids come to school with empty heads, believe instead that the young, on their own, develop ideas, opinions, explanations, beliefs and values about things that matter to them. As is true of adults, kids' ideas and beliefs become part of who they are, so attempts to change them may come across as attacks on their identity and be resisted.

Teaching, many long-time teachers know, isn't a simple matter of transferring information into a kid's head, but a far more complex, multi-step process. The teacher has to (a) "get inside" that head to figure out what's thought to be true, right, or important, (b) understand the kid's value system well enough to offer ideas sufficiently appealing to warrant taking them seriously and paying attention, (c) choose language or tasks that question old ideas and clarify new ones, (d) get feedback as necessary to decide how to proceed, (e) load the whole process up with enough emotion to carry it

past short-term memory, and (f) do this for a roomful of kids, no two of whom are identical.

If that sounds really difficult, it's because it is. If it were easy, all kids would love school because learning is its own reward. If it were easy, young teachers would be successful and stay in the profession. If it were easy, adults wouldn't forget most of what they once supposedly learned. If it were easy, the world would be a much better place.

Most of what we know, remember, and use, we didn't learn by way of Theory T. We learned it on our own as we discovered real-world patterns and relationships – new knowledge that caused us to constantly rethink, reorganize, reconstruct, and replace earlier knowledge.

Let's call this relating process "Theory R."

Theory R is why little kids learn so much so rapidly, before traditional schooling overwhelms them with Theory T. Theory R is why Socrates was famous, why project learning, internships and apprenticeships work so well, why the Progressives of a hundred years ago were so adamant about "hands on" work and "learning by doing," why real dialogue in school is essential, why knowledge of a subject doesn't necessarily make a teacher effective, why asking good questions is far more important than knowing right answers, why tying national standards to a 19th Century curriculum is stupid, why standardized tests are a cruel, anti-learning, Theory T joke.

The educationally naïve New Progressives have engineered an education train wreck that, if allowed to continue, will haunt America for generations. The young, beaten with the "rigor" stick, are being trained to remember old information when our very survival as a nation hinges on their ability to create new information.

Theory T and Theory R have implications for every major issue in education – building design, budgets, classroom furniture arrangements, textbooks, schedules, class size, the role of corporations, the kinds of people attracted to teaching, how kids feel about themselves – everything. Add to that list the newest Big Thing for the New Progressives – "value-added assessment."[1] Theory R tests look nothing like today's machine-scored Theory T tests.

Theory R people, appalled by the current thrust of reform, have been trying for at least six presidential administrations to get Theory T people in Washington to discuss how humans really learn. No luck. So sure are the New Progressives that those who disagree with them are self-serving defenders of the educational status quo, they're unable to see themselves as the true reactionaries.

Sooner or later it will become obvious even to Theory T true believers that their theory only works in a world in which tomorrows are exactly like yesterdays.

[1] http://voices.washingtonpost.com/answer-sheet/accountability

Unfortunately, when that realization comes, it's unlikely that any teachers who understand Theory R will still be around. **Ω**

Are charter schools really innovative?

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted September 22, 2010.

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

So did I. Indeed, not long thereafter, 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 believe America's broad-based system of public schools is a bedrock of the Republic, and that the country has gotten a better return on its investment than it deserves. But I also believe that major changes are long overdue, that fresh thinking is essential, and that serious problems are being made worse by simplistic reforms being pushed by self-serving corporate interests working through politicians.

One of those reforms is driven by an assumption that charter schools are wellsprings of new ideas. Unfortunately, with rare exceptions, that's not the case. I've yet to actually see something happening in a charter that couldn't be happening in a traditional public school. If there are exceptions, give credit to a local or state bureaucracy "loose" enough to permit it.

Official policy, not lack of educator imagination, not laziness, not union obstinacy, not anything else, is the main reason schools function very much as they did a century ago. Put the blame where it belongs.

There are several reasons why most charters differ little or not at all from traditional public schools. Here are four:

1) Innovation and experimentation aren't what motivate most of the people seeking charter approval.

For several years I subscribed to an Internet "listserv" that gave charter enthusiasts across the United States an opportunity to chat. It didn't take long to discover where 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 (as is almost always the case), it's not an innovation.

What's needed, then, isn't another charter, but a procedure for finding out what interesting or promising idea is being explored somewhere, checking to see if it's actually working as advertised, and if it is, providing the support necessary to put it in place locally.

2) Charter schools aren't ordinarily a source of great new ideas (at least in Florida) because most of them have been created not to experiment and innovate, but to sell houses or eventually peddle them to the regular school system (at, of course, a profit).

As I learned firsthand, developers usually know little and care even less about educational innovation. They just know that most people who buy upscale like the sound of "charter school."

Charter legislation often stipulates that only local, non-profit groups are eligible. So what do developers do? They create a non-profit organization to get the charter, then the organization hires a for-profit company to run the school.

During the years of my peak interest in and enthusiasm for charters, three out of four newly approved ones in Florida were being run by companies with practices so standardized they were using the same glossy promotional brochures in other states. They were "McCharters," and they were in the school business not to experiment and innovate but to make money. I don't see any evidence that such isn't still the case.

It's ironic: Legislation originally intended to strengthen public schools is now being used as a sneaky way to privatize them.

3) In very few states are the entities that grant charters really knowledgeable about education's deep-seated problems.

Neither are they sufficiently open to unorthodox approaches to approve applications that don't meet fairly traditional public and bureaucratic expectations.

I've been involved in education as teacher, college professor, administrator, writer of textbooks and professional books, consultant to publishers, states, and foundations, and visitor to schools as far west as Japan and as far east as the Greek islands.

For what I'm convinced are sound reasons, I've come to favor shorter school days, the elimination of textbooks, standardized tests, grade cards, grades, traditional school buildings, single-teacher classes, the required "core" curriculum, and other policies and

procedures. Would I be able to get a charter? Hah! Not a chance!

4) Charter schools aren't usually sources of great new ideas, and aren't likely to become such, because of subject-matter standards and high-stakes, standardized 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 kind of people they want their students to be and become. Yes, they want them to be knowledgeable. But they also want them to be curious, creative, self-aware, empathetic, confident, courageous, resourceful, in love with learning, and possessing what Albert Schweitzer called "reverence for life."

They devise a curriculum, apply for and are granted a charter. A year or two down the road, there's a collision of aims and priorities.

The state says to the educators, "We're giving you tax money. In return, we're holding you accountable. Your students have to take the state's annual standardized 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, empathetic, confident, courageous, resourceful, in love with learning, and capable of wonder?"

"Yes."

"And now you're telling us that a standardized, one-shot, paper-and-pencil, multiple choice, bubble-in-the-oval, machine-scored test of short-term memory of the contents of a few school subjects—you're telling us that a computer is going to spit out a number that tells us whether or not we're succeeding!? You've gotta be kidding!"

The charter school movement has been billed and sold as a strategy for strengthening public education via experimentation and innovation. What it's done instead is remind us of the ubiquity of the Law of Unintended Consequences.

But that shouldn't surprise anyone. That's because, generally speaking, those most determined and successful in promoting charters rarely know much about educating. They've just bought the view of the late conservative economist Milton Friedman that privatizing public schools and forcing them to adopt market forces will shape them up.

It doesn't hurt, of course, that a side benefit would be the weakening of unions, and the broadening of corporate access to the more than half-trillion dollars a year America spends on education. **Ω**

The record of charter schools and chains? Too spotty, ideology driven, and tainted by corruption to justify the damage being done to a public school system that was once the envy of the world. For overwhelming evidence, see Diane Ravitch's blog and books.

'Race to the Top's' 10 false assumptions

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted October 23, 2009

"Race to the Top? National standards for math, science and other school subjects? The high-powered push to put them in place makes it clear that the politicians, business leaders, and wealthy philanthropists who've run America's education show for the last two decades are as clueless about educating as they've always been.

If they weren't, they'd know that adopting national standards will be counterproductive, and that the "Race to the Top" will fail for the same reason "No Child Left Behind" failed—because it's based on false assumptions.

False Assumption 1: America's teachers deserve most of the blame for decades of flat school performance. Other factors affecting learning—language problems, hunger, stress, mass media exposure, transience, cultural differences, a sense of hopelessness, and so on and on—are minor and can be overcome by well-qualified teachers. To teacher protests that they're scapegoats taking the blame for broader social ills, the proper response is, "No excuses!" While it's true teachers can't choose their students, textbooks, working conditions, curricula, tests, or the bureaucracies that circumscribe and limit their autonomy, they should be held fully accountable for poor student test scores.

False Assumption 2: Professional educators are responsible for bringing education to crisis, so they can't be trusted. School systems should instead be headed by business CEOs, mayors, ex-military officers, and others accustomed to running a "tight ship." Their managerial expertise more than compensates for how little they know about educating.

False Assumption 3: "Rigor"—doing longer and harder what we've always done—will cure education's ills. If the young can't clear arbitrary statistical bars put in place by politicians, it makes good sense to raise those bars. Because learning is neither natural nor a source of joy, externally imposed discipline and "tough love" are necessary.

False Assumption 4: Teaching is just a matter of distributing information. Indeed, the process is so simple that recent college graduates, fresh from "covering" that information, should be encouraged to join "Teach for America" for a couple of years before moving on to more intellectually demanding professions. Experienced teachers

may argue that, as Socrates demonstrated, nothing is more intellectually demanding than figuring out what's going on in another person's head, then getting that person herself or himself to examine and change it, but they're just blowing smoke.

False Assumption 5: Notwithstanding the failure of vast experiments such as those conducted in eastern Europe under Communism, and the evidence from ordinary experience, history proves that top-down reforms such as No Child Left Behind work well. Centralized control doesn't stifle creativity, imply teacher incompetence, limit strategy options, discourage innovation, or block the flow of information and insight to policymakers from those actually doing the work.

False Assumption 6: Standardized tests are free of cultural, social class, language, experiential, and other biases, so test-taker ability to infer, hypothesize, generalize, relate, synthesize, and engage in all other "higher order" thought processes can be precisely measured and meaningful numbers attached. It's also a fact that test-prep programs don't unfairly advantage those who can afford them, that strategies to improve the reliability of guessing correct answers can't be taught, and that test results can't be manipulated to support political or ideological agendas. For these reasons, test scores are reliable, and should be the primary drivers of education policy.

False Assumption 7: Notwithstanding the evidence from research and decades of failed efforts, forcing merit pay schemes on teachers will revitalize America's schools. This is because the desire to compete is the most powerful of all human drives (more powerful even than the satisfactions of doing work one loves). The effectiveness of, say, band directors and biology teachers, or of history teachers and math teachers, can be easily measured and dollar amounts attached to their relative skill. Merit pay also has no adverse effect on collegiality, teacher-team dynamics, morale, or school politics.

False Assumption 8: Required courses, course distribution requirements, Carnegie Units, and other bureaucratic demands and devices that standardize the curriculum and limit teacher and learner options are products of America's best thinkers about what the young need to know. Those requirements should, then, override individual learner interests, talents, abilities, and all other factors affecting freedom of choice.

False Assumption 9: Notwithstanding charter schools' present high rates of teacher turnover, their growing standardization by profit-seeking corporations, or their failure to demonstrate that they can do things all public schools couldn't do if freed from bureaucratic constraints, charters attract the most highly qualified and experienced teachers and are hotbeds of innovation.

False Assumption 10: The familiar, traditional "core curriculum" in near-universal use in America's classrooms since 1893 is the best-possible tool for preparing the young for an unknown, unpredictable, increasingly complex and dangerous future.

Our alternatives for America's future are effective education or catastrophe. If amateurs continue to control American education policy, put your money on catastrophe. It's a sure thing. Ω

Merit pay problematic

Money is not ultimate motivator for teachers

Orlando Sentinel, 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#!

Are we still capable of educating for 'us-ness?'

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted October 15, 2010 (Note: This piece was reprinted by *Truthout* on October 17, 2010.)

Ronald Reagan delivered some one-liner doozies,[1] one of which is still a favorite of several members of Congress and talking heads on cable news:

"The nine most terrifying words in the English language are: 'I'm from the government and I'm here to help.'"

It's an interesting perspective, particularly when placed alongside another quote, one from Abraham Lincoln's Gettysburg Address. Those who had died on that battlefield, Lincoln said, contributed to a great cause-preserving "*government of the people, by the people, for the people.*"

A rational alien would assume, wrongly, that these two views of government came from two very different countries.

For a democracy to function, its citizens need to feel some sense of "us-ness," togetherness, community. They need to be willing, especially when the chips are down, to put the common good ahead of excessive individual interest. A difficult, ever-changing balance has to be maintained between individual rights and collective responsibility. Too much of either invites disaster.

Listening to one of my several Libertarian neighbors a few days ago, and reading how many new billionaires and new food stamp recipients 2010 has produced, has me wondering if we have enough left of a shared concern for "the general welfare" to hang on to government of, by, and for the people.

Evidence seems to be piling up that, more so than in many other societies, we're long on looking out for Number One and short on caring about others; long on privacy fences and gated communities, and short on concern for those beyond and outside them; long on individual liberty, and short on a sense of social responsibility and interest in community building.

[1] https://www.thoughtco.com/ronald-reagan-quotes-2733513

In short, we're short on what it takes to maintain a democracy.

I'm wondering why.

Is it in our genes? If you think about it, that doesn't seem entirely unreasonable. Most of those who chose to come to America during its early years must have differed a little from those they left behind. Unlike their brothers and sisters, they were willing to trade familiarity, family, and friends for an unknown future. That suggests differences having implications for community building and democracy. It's conceivable that many of us haven't fallen very far from our ancestral tree.

Or was it geography? Our immigrant ancestors found a vast, sparsely populated frontier. The idea of "living beyond the sound of another man's axe" obviously had appeal, an attitude not conducive to community building and democracy.

Or timing? Many of our ancestors came to America during the Industrial Revolution, a revolution made possible by easily accessed water power, timber, oil, coal, and other resources, and two oceans to protect us while we developed them. During that era, high-profile, self-made men, rags-to-riches stories, and the popularity of the theory of survival of the fittest, reinforced the idea that it was every man for himself.

Or was it what some historians and sociologists call the "Protestant Work Ethic"[1] – an assumption that hard work, salvation, wealth and success, were all parts of a package deal especially assembled by God for Americans? That particular interpretation of ancient scripture downplayed the story of the Good Samaritan and the need for caring for "the least" among us, so those who bought (and continue to buy) the "Ethic" aren't saddled with any serious community-building obligations.

Or maybe it's our economic system, the functioning of which depends heavily on our willingness to accept its demands, load up the van, and move somewhere else to work, retire, or just start over.

Maintaining a viable democracy requires an educated citizenry willing, able, even eager, to talk about matters like these, matters having to do with who we are as a people, why we do the things we do, and where we're headed. Those conversations require at least some understanding of the past, national character, economics, politics, government, science, religion, and so on-intellectual tools that allow us to trace the trends of our era, the curves of history, the causes and consequences of change.

Those were the kinds of conversations thoughtful educators used to try to encourage, the kinds of intellectual tools they once tried to help the young develop.

Now, not so much.

[1] https://www.britannica.com/topic/Protestant-ethic

If you want to mark a date on the calendar when that happened, a good one would be September 27-28, 1989. That's when state governors met in Charlottesville, Virginia, at a big "Education Summit" (no educators invited), and lent their considerable influence to the process of transferring control of education from local school boards and the communities they served to corporations, pausing in Congress just long enough to translate simplistic educational theory and a narrow concern for American industry into the law of the land.

That transfer of control may (or may not) have been a good-faith effort to deal with problems the locals were being slow to address. But if down the road there are still people able to write history, the transfer will be remembered as a major factor in the transition of America from a democracy to a plutocracy, and the nation's consequent decline as a force for good as the military-industrial complex unapologetically clinched its control.

Democracy that doesn't start with education and a sense of community, doesn't start. Period. With Congress as America's school board, and members of the Business Roundtable and the U.S. Chamber of Commerce cutting the checks that help elect and keep the members of that board in office, democracy is dead.

Full disclosure: I have a dog in the education reform fight. Back in the 1960s I wrote a journal article about a way to address a problem every kid in America has with school: information overload. Over the years, student seat-time hours have increased, textbooks have gotten much fatter, drills and tests have multiplied, and homework has become more onerous.

As a consequence, the amount of abstract, disconnected information dumped on kids has increased far beyond even the best student's ability to cope. Many billions of dollars and hours are invested in stuffing kids' heads with information, and as soon as exams are over they flush almost all of it.

My article dealt with the educational potential of General Systems Theory[1] as it had developed during World War II. It could, I argued, make it possible for kids to organize, connect, and make useful sense of what seemed to them to be thousands of odds and ends of random, disconnected information.

The article caught the interest of a couple of big wheels at a major publisher. To make a very long story very short, three or four books and many years later I put together a little course of study designed to help adolescents see that what seemed to them to be separate, isolated school subjects were really several working parts of a logically integrated, mutually supportive, extremely useful knowledge-organizing system.

[1] See page 58.

I mentioned the (free) course of study in a couple of journal articles, and some middle and high school principals around the country contacted me about piloting it. Then along came the assault on America's teachers, the No Child Left Behind legislation, and an organized corporate campaign to mandate the use of market forces on a social institution for which their destructive potential far exceeded their usefulness.

I was left with letters and phone calls of apology from principals saying they were sorry, but they couldn't pilot my program. If they hoped to keep their jobs, they had to concentrate on proving that their teachers had standards and were accountable.

Am I appalled by the anti-democratic centralization of educational decision making, the radical narrowing of the curriculum, the scapegoating of teachers, the misapplication of market forces, the casual destruction of already-weak communities in the name of school "turnarounds"? You betcha!

But adding greatly to my frustration is the willingness of people who see themselves as "enlightened progressives" (including many educators), to buy into the radically regressive education reform program being promoted by corporate interests with massive help from Washington.

I resent being written off as an obsolete educator-nostalgic, unwilling to let go of the past, unable to appreciate the wisdom and policies of Michelle Rhee, Joel Klein, Arne Duncan, and other education-reform heroes of naïve, educationally challenged mainstream media.

Yes, you've heard this from me before. But the failure of those now setting policy to respond to my arguments says they're not listening, or not understanding, or are so sure they know what they're doing they don't need to pay attention to someone who was wrestling with issues about which they consider themselves expert before many of them were born.

So I'll keep it short, simple, unambiguous:

1. We educate in order to survive.
2. We assign most of the responsibility for educating to public schools.
3. The public-school curriculum drives instruction.
4. That curriculum is seriously flawed. (It's necessary but not sufficient.)
5. Its flaws have been powerfully reinforced by the standards and accountability fad.
6. The new Common Core Standards that the feds are pressuring the states to adopt will lock the flawed curriculum in rigid, permanent place.
7. A standardized, permanent curriculum is closed to innovation.
8. A curriculum closed to innovation can't adapt to change.

9. Failure to adapt to change elevates stupidity.
10. Stupidity guarantees our demise. Period. **Ω**

How Bill Gates can be an education hero

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted November 17, 2011:

A couple of days ago I watched and read the transcript of Fareed Zakaria's CNN primetime special, "Restoring the American Dream: Fixing Education." Zakaria talks to Bill Gates,[1] whose five-billion-plus investment in schools has bought him a seat at the head table of education reformers.

If I'd gotten any response from my previous attempts to correspond with Mr. Gates, I'd write him again. Here's a draft of what I might say:

Writer Malcolm Gladwell says [in his book *Outliers*] it takes 10,000 hours to become really competent in a job. The day you were born — Oct. 28, 1955 — I was 28 years old. It was a school day, so I'd have spent it teaching in a high school in Ohio. My total time on the job probably now comes to about 80,000 hours. That, of course, doesn't necessarily mean anything. I could be a slower learner than you are.

But I continue to try. I visit schools here and abroad, talk to kids and teachers, write books, op-eds, newspaper columns, and journal articles, and correspond about education with people on every continent.

You've even picked up the tab for some of that. Twice, some years ago, an organization you helped finance flew me to their headquarters and asked for advice. I'm sorry to say I wasted your money. In matters educational, I'm what Gladwell calls an "outlier." They thought my ideas were too unorthodox to take seriously.

It's obvious that much of corporate America's interest in education is self-serving, best explained by the adage, "Follow the money." That's understandable and acceptable until it becomes the tail wagging the education dog.

However, I don't think that's where you're coming from. And, since I don't accept fees for consulting, and the teaching and learning materials I produce can be downloaded from the Internet at zero cost, it's clearly not where I'm coming from either. My hand isn't out with the palm up.

With that out of the way, may I share a few thoughts?

[1] https://www.washingtonpost.com/blogs/answer-sheet/post/how-bill-gates-throws-his-money-around-in-education/2011/11/06/gIQAXqrasM_blog.html?utm_term=.6a9988d4c426

I think it's fair to say that Lou Gerstner— along with you, an early leader of the standards and accountability education reform effort[1]—was right when he wrote in a Wall Street Journal op-ed[2] that the reform effort has been a bust. I'd go farther and argue that it's done, and continues to do, enormous damage to the young, but I won't go into that here. I just want to offer a possible explanation for that failure, and do it from a business management rather than an educational perspective.

I'm sure you're familiar with the work of the late Douglas McGregor, but a reminder may help. His 1960 book, *The Human Side of Management*, is considered one of the most influential books on management principles ever written. In it, he describes two very different assumptions about human nature, labels them "Theory X," and "Theory Y," and discusses their implications and ramifications for productivity.

Theory X managers, he said, assume that most people dislike work, avoid it if possible, tend to be irresponsible, and need tight controls in the form of penalties and rewards to keep them from deviating from organizational goals.

Theory Y managers assume that work is natural, satisfying, and rewarding, and that if organizational goals are clear and acceptable, most people, given sufficient autonomy, will take the initiative, seek responsibility, and bring imagination, creativity, and ingenuity to their work.

Read those two paragraphs again, please, substituting the word "learning" for the word "work."

McGregor said that people who are managed in accordance with either theory tend to develop behavior that matches the theory. You know a lot about feedback loops. Give some serious thought to that one, and its implications for, say, performance gaps and school discipline problems.

The educators I think you want and surely need on your side are those who know from years of firsthand classroom experience the costs and limitations of Theory X and the productive potential of Theory Y. But instead of enlisting them, the reform efforts you've been promoting, and the promotional strategies you've used, drive them up a wall.

Corporate interests, Congress, and state legislatures push Theory X with a vengeance — No Child Left Behind; Race to the Top; standardized, high-stakes tests; teacher pay tied to test scores; school closings; the Common Core Standards; school systems headed by mayors, CEOs, and retired military officers; teachers accused of "the soft bigotry of low expectations;" states prostituting themselves to compete for federal

[1] https://www.washingtonpost.com/blogs/answer-sheet/post/a-primer-on-corporate-school-reform/2011/10/26/gIQAyWrUKM_blog.html?utm_term=.5145b06ce4fb

[2] https://www.wsj.com/articles/SB122809533452168067

dollars; letter grades assigned to schools; public naming and shaming; constant yammering about "raising the bar" and "rigor!"

Every single one of those is straight, undiluted Theory X.

Theory X has brought public schooling to crisis. Theory X will eventually destroy it.

If you want to make a real and permanent difference in what goes on in kids' heads, accept the fact that you've been backing the wrong horse. Use your enormous influence and resources to get policymakers in Washington and state capitols to back off X — dump seat-time rules, required-subject rules, fill-out-a-form-for-everything rules, everybody-on-the-same-page rules, my-way-or-the-highway rules, and begin moving toward Theory Y.

Unleash what America's schools always had too little of, but the little they once had made our schools the envy of the world — enough Theory Y going on behind closed classroom doors to capitalize on kid and teacher imagination, creativity, and ingenuity.

If you want to see that theory in action, check out the new "studio school" movement[1] in the United Kingdom. Or "project learning" here in America. Just a few days ago, George Wood, superintendent of the Federal Hocking Local School District in Stewart, Ohio, painted a word picture[2] of the possibilities of that idea.

What I'm asking you to do will be really, really hard. Just about everybody — including, probably, most educators—will try to "yes, but" it to death. Of those yes-buts, the one that will seem the most intractable will be insistence that the familiar "core curriculum" — the one adopted in 1893, the one now being locked in permanent place with the Common Core Standards[3]— has to be taught, and doing so takes most of the school day, leaving little time for anything else.

Taking issue with that contention is the main reason I've been labeled an "outlier." For almost fifty years I've been repeating what respected scholars have been saying for centuries: Adequate sense can't be made of the world by chopping it into little pieces and studying the pieces without regard for how they fit together and interact.

And I've said that problem can be easily solved, that systems theory as it developed during World War II can weave together, logically, all present and future academic subjects and fill in the gaps between them to form a much simpler, more efficient and effective, less time-consuming (and less expensive) general education. Here's one example [the free course *Introduction to Systems*[4]]. If you're willing to give the example

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[1] http://www.ted.com/talks/geoff_mulgan_a_short_intro_to_the_studio_school.html?utm_source=newsletter_weekly_2011-09-27&utm_campaign=newsletter_weekly&utm_medium=email

[2] http://www.washingtonpost.com/blogs/answer-sheet/post/what-college-and-career-ready-really-means/2011/11/07/gIQAazyaxM_blog.html#pagebreak

[3] http://www.washingtonpost.com/blogs/answer-sheet/post/why-common-core-standards

[4] https://www.marionbrady.com/IntroductiontoSystems.asp

more than a cursory glance, do so not looking for math, science, language arts and social studies instruction. Instead, think of school subjects simply as tools for making better sense of the world and how we experience it — as means rather than ends.

"Human history," said H. G. Wells, is "a race between education and catastrophe." The more than five billion bucks you've spent thus far trying to improve American education suggests you think as I do, that catastrophe has a big lead.

Be a *real* game changer. Be a hero. Promote Theory Y with the same enthusiasm you've brought to Theory X. Given institutional inertia, you won't live long enough to see all or even most schools change very much. But from even limited success will come the kids best equipped intellectually and emotionally to save us from ourselves. Ω

8. Solution: Active Learning

Discovery, inquiry, active learning, project-based learning, constructivism—various terms that mean just about the same thing—all refer to learners moving beyond passive information absorption to something far more intellectually challenging and effective. An ancient Chinese proverb summarizes the principle: "Tell me and I'll forget. Show me and I'll remember. Involve me and I'll comprehend." Active learning can and should be the basis for academic study, beginning at or before adolescence.

A true test of a student's ability? Just doing it

Orlando Sentinel, July 17, 2004

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."

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.

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.)

(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**

Teacher accountability? It's about time

Posted 19 April 2010

t r u t h o u t | Op-Ed

Once upon a time teachers assigned grades, and that was pretty much that. Oh, occasionally a kid would argue that a particular grade was unfair, or complain so loudly that parents or an administrator would get involved, but that was relatively rare.

About a generation ago, acceptance of teacher judgment about the quality of student work began to disappear. Waving the "standards and accountability!" banner, leaders of business and industry convinced politicians that this generation's teachers (unlike those they remembered from their own schooling) couldn't be trusted to evaluate learner performance. Today's teachers, they were sure, suffered from "the soft bigotry of low expectations."

What drives the campaign to discredit teacher judgment isn't clear. Some are convinced there's a long-running, behind-the-scenes attempt to undermine confidence in public schools to pave the way for privatizing them. Others think the loss of faith has been engineered by testing companies to expand the lucrative market for standardized tests and test prep materials. Still others blame it on naive policymakers who don't understand the vast limitations of machine-scored tests.

Whether for one of these or some other reason, "accountability" is now a major issue. It's widely believed that if America doesn't shape up, scientists and engineers from

beyond our borders will soon be eating our technological lunch. Accompanying that belief is a second one, that the best way to keep track of how America stands in relation to the competition is to give the same test to every kid on the planet and compare the scores.

We have a problem. We've put all our quality-monitoring eggs in the standardized testing basket, but the only thing computer-scored tests can measure with absolute precision is short-term memory. Short-term memory has its uses, but a good one doesn't turn a kid into a good mathematician, good scientist, good engineer, or good anything else. Expertise and accomplishment require intention, interest, insight, imagination, creativity, and probably a brain wired in a particular manner, all combined in a way little understood, incapable of being directly taught, and impossible to measure with a standardized test.

We seem to be over a barrel. To maintain educational quality, we need to monitor and measure performance. But learner qualities and capabilities most deserving of being evaluated are far too complex for our crude tests to monitor.

Fortunately, the barrel is of our own making, and can be rolled aside. Philosopher and mathematician Alfred North Whitehead, in his 1916 Presidential Address to the Mathematical Association of England, pointed the way. "The secondhandedness of the learned world," he said, "is the secret of its mediocrity." When kids are merely trying to remember something read in a textbook or heard in teacher talk, they're in the secondhand-knowledge business. When they're figuring out how to make sense of something complicated and important that can be seen and touched, they're in the firsthand-knowledge business. Switching from secondhand to firsthand student work changes the game and therefore everything that follows, including the kinds of tests that are necessary.

A firsthand-knowledge assignment for a high school social studies class: "How are major decisions about your school's day-to-day operation made, and what general conclusions and attitudes about decision-making and governing might you carry into adulthood as a consequence?"

A firsthand-knowledge assignment for a high school science class: "What's happening to the solid waste your school generates, and if the system for dealing with it continues to function as it presently does, what will be the likely consequences for future generations?"

A firsthand-knowledge assignment for a high school humanities class: Graffiti fits dictionary definitions of literature. Reading "between the lines," what does local graffiti have to say about the interests, concerns, and problems of its creators? Do they differ from yours? How? Why?

That's firsthand, real-world work, and what comes out of it is firsthand knowledge. It's unquestionably relevant. Its intellectual challenges are qualitative rather than quantitative. It forces secondhand knowledge to play its proper, supportive role. Its intellectual payoff is immediate and continuous. It connects directly to larger issues of life, liberty, and happiness. It erases the arbitrary, artificial, intellect-limiting boundaries between school subjects. And the shift of emphasis for learners from simple memory exercises to complex logic tends to shake up perceptions of who's smart and who's less so in surprising and healthy ways.

By any measure, firsthand work is work worth doing. But it's work that, by its very nature, can't be standardized, so evaluating it can't be standardized. No way can Educational Testing Service, McGraw-Hill, Pearson, or some other remote corporate entity write a machine-scored test to determine the quality of what's happening in the heads of kids as they wrestle with firsthand, real-world work.

How, then, can performance be monitored? In the same way performance was monitored for the decades before the campaign to discredit teachers began: by returning respect and authority to those best positioned by time and experience to make the judgment calls - returning it to classroom teachers.

Blamed by business leaders for problems over which they have no control, scapegoated by platitude-prone politicians, ignored by educationally challenged policymakers, mauled by mainstream media unwilling to look past the conventional wisdom, it's possible that classroom teachers have lost confidence in their ability to evaluate student work. But as long as those in authority think that sorting, labeling, and assigning numbers to kids has something to do with educating, classroom teachers are the only people who know the game and the players well enough to meet their demands.

Are teacher judgments subjective? Of course. So what? For comprehensiveness, reliability and usefulness, no other approach to performance evaluation comes even close. (And it's a helluva lot cheaper.)

It's years of time and many billions of dollars too late to undo the damage done to the young by the standardized testing fad, but next school year would be a good time for an aroused citizenry to demand that a salvage operation be undertaken. Ω

To expand thinking skills beyond recall and low-level application, the learning resources must be “unprocessed;” either the real world or (if the reality is distant in time or space) minimally-mediated primary sources. Second-hand sources such as the content of most science or social-studies textbooks impede real in-depth thinking by learners. Using first-hand resources—along with thought-provoking questions—leads directly to active learning. **Three things are intimately interrelated: active**

learning, high-level thinking, and use of complex, unprocessed reality or primary sources as the main learning resources. Each requires the other two. Free exemplar courses: https://www.marionbrady.com

The right — and wrong — role for teachers

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted April 15, 2013:

Bill Gates spent $45 million trying to find out what makes a school teacher effective. I've studied his Measures of Effective Teaching (MET) project,[1] and think it ignores a matter of fundamental importance.

Consider: What makes an effective lawyer, carpenter, baseball player, surgeon?

The answer is that it depends—depends on what they're being asked to do. An effective divorce lawyer isn't necessarily an effective criminal defense lawyer. A good framing carpenter isn't necessarily a good finish carpenter. A good baseball catcher isn't necessarily a good third baseman. A good heart surgeon isn't necessarily a good hip-replacement surgeon.

Put lawyers, carpenters, baseball players, and surgeons in wrong roles, test them, and a likely conclusion will be that they're not particularly effective. So it is with teachers. Put them in wrong roles, and they probably won't be particularly effective.

Gates' faith in test scores as indicators of effectiveness makes it clear that he buys the conventional wisdom that the teacher's role is to "deliver information." But what if the conventional wisdom is wrong?

Here's an American history teacher playing the "delivering information" role:

"What were the Puritans like? Many of the things they did—and didn't do—grew out of their religion. For example, they thought that all people were basically evil, and that the only way to keep this evil under control was to follow God's laws given in the Bible. Anyone who didn't follow those laws would spend eternity in Hell."

Later—a few minutes, hours, days, or weeks—it's the learners' turn to play their role. They take a test to show how much of the delivered information they remember. If it's a lot, the teacher is labeled "effective." If most of it has been forgotten, he or she is "ineffective."

Let's call this "Teacher Role X."

Now, suppose the teacher doesn't play that role—delivers no information at all about Puritan beliefs and values or anything else—instead says, "I'm handing you copies of several pages from *The New England Primer*, the little book the Puritans used to

[1] http://www.metproject.org/

teach the alphabet. Get with your team, and for the next couple of days try to think like a little Puritan kid studying the pages. What do you think you'd grow up believing or feeling that's like or not like your present beliefs and values?"

That's it. The teacher may be an expert on Puritan worldview, but offers no opinion, just wanders around the room listening to kids argue their assumptions, defend their hypotheses, elaborate their theories and generalizations, getting ready to later make their case to the other teams.

Let's call this "Teacher Role Y."

Which teacher —the one delivering information (X), or the one requiring kids to construct information for themselves (Y)—is more effective?

Here's Bill Gates, chief architect of the present education reform movement, giving his answer to that question: "*If you look at something like class sizes going from 22 to 27, and paying that teacher a third of the savings, and you make sure it's the effective teachers you're retaining, by any measure, you're raising the quality of education.*"

Clearly, when Gates says it's just as easy to deliver information to 27 kids as it is to deliver it to 22, he's taking the teacher-as-deliverer-of-information role for granted. Just by talking a little louder, Role X teachers can deliver information to the additional five students. Give them bullhorns, and they can deliver to 127. Give them television transmitters or the Internet, and class size is irrelevant. Salman Khan's online math tutorials reach millions.[1]

For Role Y teachers, however, every additional learner after the first makes the job harder. They're trying to gauge the nature and quality of learners' thought processes; assess depth of understanding; set and maintain a proper pace; decide whether to move on, go back, or go around a learning difficulty; determine learner attitudes toward and appreciation of the subject; trace the evolution of communication, collaboration, and other skills; and note honesty, tenacity, and other character traits that a good education is expected to develop.

[1] https://mathspig.files.wordpress.com/2011/07/khan-1.jpg

Role X teachers may care about those matters, but if they're standing behind a podium in a lecture auditorium, talking to a television camera, or teaching a class via the internet, caring is the most they can do. Real learning is a relationship-based experience. The effectiveness of Role X teachers won't change significantly unless somebody invents technology that's capable of, say, delivering a kiss remotely that has the same effect as the real thing.

Notwithstanding the assumption that Teach for America recruits or others who know a subject well can teach it, teaching—real teaching—is exceedingly complex, difficult work. That Role Y history teacher in my example had to decide that understanding a group's worldview is important enough to warrant devoting two or three days to it, and be able to explain, if challenged, why the study of worldview is relevant and important. He or she then had to find a vehicle (in this case, *The New England Primer*) that was intellectually manageable by adolescents of varying ability levels, dealt with the required content, required use of a full range of thought processes, and engaged kids sufficiently to be intrinsically satisfying.

Then the real work began—"reading" kids' minds—analyzing their dialogue, interpreting facial expressions and body language, and sensing other cues so subtle they're often below ordinary levels of awareness—cues that may relate to the learner's mood, ethnicity, prior experience, peer and family relationships, social class, and so on—the whole of the challenge further complicated by the fact that no two kids in any class will be alike.

It takes years for those skills to develop and become "second nature."

Teacher Roles X and Y are played not just in the teaching of history but in every subject, and the roles are poles apart. Indeed, so distinctive are the two approaches they create two entirely different classroom cultures, each with enough consequences—expected and unexpected—to warrant at least a half-dozen chapters in a book.

The performance of students taught by Role X teachers can be evaluated by machine-scored standardized tests. Machines can't come even close to evaluating the performance complexities of Role Y teachers. That's why the testing fad and everything that relates to it—the Common Core State Standards, student ranking, school grades, timed standardized tests, merit pay, pre-set test failure rates, and so on—drive Role Y teachers up a wall.

Failure to distinguish between teacher-centered and student-centered approaches to educating makes the conclusions of Gates' Measures of Effective Teaching project of limited usefulness at best, misleading at worst. That failure also generates problems within the ranks of teachers, creating a chasm of misunderstanding that more than a century of professional dialogue has thus far been unable to bridge.

Decades of firsthand experience with both Roles X and Y in my own teaching and that of teachers for whom I've been responsible leave me without the slightest doubt that, notwithstanding its continued use, much Role X instruction amounts to little more than ritual. Unfortunately, Role X is what No Child Left Behind, Race to the Top, and other policies being forced on teachers by corporate interests and politicians are reinforcing.

Given the wealth and power behind those misguided efforts, the refusal of their advocates to listen to experienced teachers or respect research, and the assumption by the likes of Rupert Murdoch that current reforms will build a money machine for investors,[1] it seems likely that present X-based education "reform" efforts will be the only game in town.

I can think of only one sure-fire way to take control of public education away from Washington and state capitols, return it to educators and local community control, and open the door to broad dialogue and genuine reform. The young hold a wrench which, dropped into the standardizing gears, will bring them to a near-instant stop. If even a relatively small minority agree (as some already have) to either refuse to take any test not created or approved by their teachers, or else take the tests but "Christmas-tree" the ovals on their answer sheets, the data the tests produce will be useless.

Conscience-driven students who do that will be owed the gratitude of a nation. They'll have put the brakes on a secretive, destructive reform effort based on a simplistic, teacher-centered, learner-neglecting conception of educating.

I can anticipate some of the conventional-wisdom reaction to what I'm advocating—that it's irresponsible, that kids are too immature to evaluate the quality of their schooling, that I'm undermining the authority structure that holds the institution together.

Before hanging negative labels on me, ask yourself: Is a system of education that limits intellectual performance to the thought processes that machines can evaluate, adequately equipping the young to cope with the future they're inheriting? **Ω**

Note: This article was republished by *Truthout* and *Alternet*.

We said that active learning, high-level thinking, and use of complex, unprocessed reality or primary sources were all required to promote effective learning. Traditional core content can be used in non-traditional, bureaucratically friendly ways for this purpose, but too few teachers feel they have sufficient autonomy to experiment.

Active learning is essential. However, to deal with complexity, learners also need conceptual tools. That's what the next section is all about.

[1] 2018 note: That assumption cost Murdoch a bundle.

9. Solution: Understanding Systems

A struggle for schools to think outside the box

Orlando Sentinel, April 3, 2000 (Part five of an eight-part series on "Rethinking Schools")

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 zigged 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.

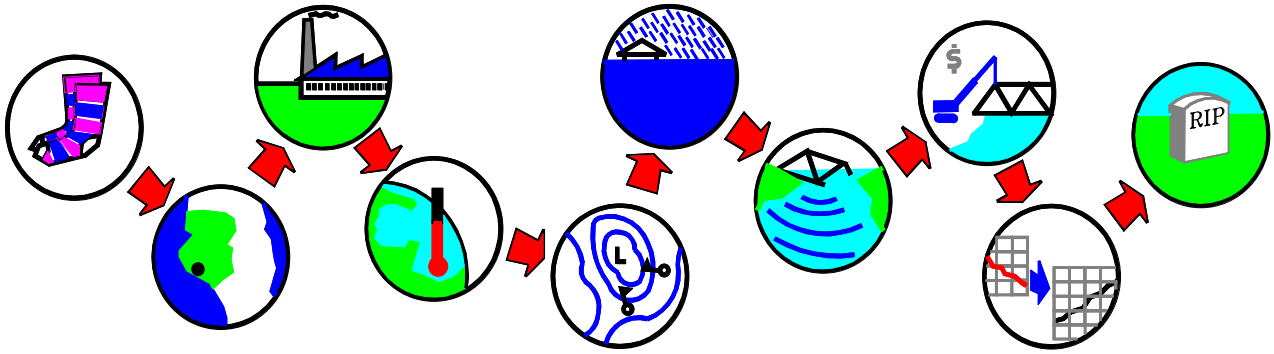
Because education, finally, is about what's taught and learned, a new curriculum theory is the logical place for reform to start. Respected educators have been talking about the need for such a theory for more than a century. Unfortunately, policymakers haven't been paying attention.

- **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

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.***[1]



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**

Those last two sentences summarize the neglected educational problem that Marion Brady has been pointing to for over half a century. (HLB)

[1] Emphasis added.

If you only read one article by Marion, this should probably be the one (HLB):

Why Common Core isn't the answer

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted January 31, 2014:

As far as I know, no one asked the general public's opinion about the Common Core State Standards for school subjects. My guess would be that if polled, most people—including most educators—would say they just make good sense.

But not everyone is a fan.[1] Few oppose standards, but a significant number oppose the Common Core State Standards. Those on the political right don't like the fact that—notwithstanding the word "State" in the title—it was really the feds who helped to railroad the standards into place.

Resisters on the political left cite a range of reasons for opposing the standards—that they were shoved into place without research or pilot programs, that they're a setup for national testing, that the real winners are manufacturers of tests and teaching materials because they can crank out the same stuff for everybody—just to begin a considerably longer list.

Three cheers for those on the political right. Three more for those on the left. May the chaos in Washington and state capitols over education policy help the public realize that, in matters educational, the leaders of business and industry and the politicians who listen to them are blind bulls in china shops.

I began pointing out problems with subject-matter standards beginning with a 1966 article in an education journal, the *Phi Delta Kappan,* and have been at it ever since. A list[2] on my homepage summarizes a few of the problems. Here, however, I want to focus on just one problem which, unless it's addressed, could ultimately be fatal to the education system.

I'll start by affirming what I believe most thoughtful educators take for granted: The main aim of schooling is to model or explain reality better. As you read, don't lose sight of that. The aim of schooling isn't to teach math, science, language arts, and other school subjects better, but to expand understanding of reality and the ability to think about it.

When I use the word "reality," I'm being concrete and specific. What I can see out of the window directly in front of me is a slice of it. I live on the west bank of the Indian River Lagoon on Florida's east coast. Not really a river, the lagoon is a body of brackish water that stretches fifty or so miles north and about twice that to the south. Off the end of my dock it's about two miles wide.

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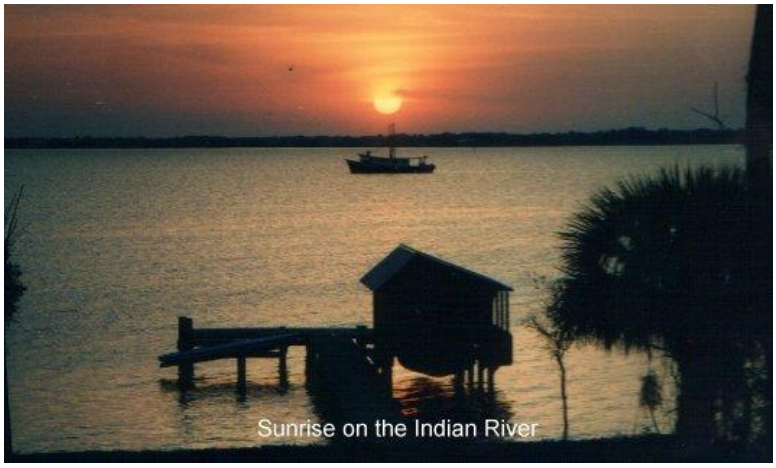
[1] http://www.washingtonpost.com/blogs/answer-sheet/wp/2014/01/27/why-support-for-common-core-is-sinking/

[2] http://www.marionbrady.com/documents/Problems-CCSS.pdf

This bit of reality costs me money, and continues to do so, but its moods are a source of pleasure, its sunrises are often spectacular, and its easy access by boat to some local restaurants, the Atlantic Ocean and the rest of the world, are all pluses. I have, then, reasons to try to understand this particular bit of reality. (Be patient. I'm getting to the point.)


Sunrise on the Indian River

Thirty years ago, when I started building my house, I could often almost walk across the river stepping from clam boat to clam boat. The only clam boats I see now are on trailers in back yards.

Buoys marking underwater crab traps used to dot the river. The traps are gone because most of the crabs are gone.

There was a time when the fish in the Lagoon were so plentiful I've had dinner-sized mullet jump into my boat. That no longer happens.

Sea grasses used to cover much of the lagoon's sandy bottom. Now, the stretch of grassless sand that says the lagoon is sick extends for perhaps a quarter of a mile beyond my dock and keeps expanding. All else being equal, my property is losing value.

What's happened? Here's an over-simplified version:

1. When I began building my house, only one house light was visible at night across the river on Merritt Island. Mangrove thickets lined the shore for miles in both directions. Now, there are dozens of lights, and many manicured lawns stretch down to the water's edge.
2. Much of the property on both sides of the river (including mine) isn't part of a municipality. Everyone has a septic system.
3. The soil up and down the coast is mostly sand. The outflow from septic tanks, and the fertilizers and chemicals used to maintain lawns, easily percolate down to the water table, then seep into the river.
4. Nitrogen and phosphorus compounds in the fertilizer and sewage feed unnatural algae blooms, blocking the light from sea grasses and using up dissolved oxygen needed by marine life.
5. Dead organisms turn into black muck, discouraging new grass growth.

6. Property owners, reasoning that their fertilizer and sewage have negligible effect, say, “I’m taxed enough already. Why should I pay for sewage lines and treatment plants?”

As I said, I have a serious stake in understanding the reality I’ve been describing. Unfortunately, no subject in the core curriculum can give me that understanding. I have to assemble it myself using content drawn from demography, geology, botany, mathematics, sociology, law, chemistry, hydraulics, political science, psychology, economics, meteorology, and other fields.

Then comes the hard part—*exploring the relationships between those fields*.

Choose something to think about—anything—and the above applies. Whatever you’ve chosen to understand can’t be thoroughly understood in isolation because it’s part of a system. That system will have many parts, the whole will be greater than the sum of those parts, and, to add to the sense-making challenge, the whole is dynamic. While you’re trying to make sense of it, it’s changing.

Compared to most of the complex realities facing humankind, what’s happening to the reality visible out my window is small potatoes. But making sense of it (and *all other realities*) requires a particular kind of thinking—a kind of thinking that makes civilized life possible. *However, the Common Core Standards don’t promote that kind of thinking. That means it won’t get taught, which means it won’t get tested, which means we’re not really educating, which means too much to even try to summarize.*

This is why Alfred North Whitehead, in his 1916 Presidential Address to the Mathematical Association of England, told educators they needed to “eradicate the fatal disconnection of subjects which kills the vitality of the modern curriculum.”

This is why Harlan Cleveland wrote: “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.”

This is why John Goodlad, after a massive, multi-year study of American high schools culminating in a 1984 McGraw-Hill book titled, *A Place Called School*, wrote, “The division into subjects and periods encourages a segmented rather than an integrated view of knowledge. Consequently, what students are asked to relate to in schooling becomes increasingly artificial, cut off from the human experiences subject matter is supposed to reflect.”

This is why dozens of other scholars[1] have been saying the same thing for at least the last several hundred years: What we’re doing isn’t working!

[1] https://www.marionbrady.com/documents/QuotesFragmentation.pdf

The systemic nature of reality, the seamless way the brain perceives it, the organizing process that aids memory, the relating process that creates new knowledge, the conceptual networking that yields fresh insights, the meshing of two seemingly unrelated ideas that underlies creativity—all rely on holistic, systemically integrated and related thought. *And it's not being taught*.

Before today's education "reformers"—in a spectacular fit of hubris—took over America's schools, progress in modeling reality more simply and accurately was being made based on general systems theory[1] as it had developed during World War II. *No Child Left Behind* and *Race to the Top* kissed that progress goodbye. Policymakers assume there's nothing wrong with the core curriculum adopted in 1893, so shut up and study, kids.

Maybe we can work our way out of the hole we've dug for ourselves,[2] but it can't be done by following orders handed down by authorities in Washington and state capitols, orders that ignore the nature of knowledge, the history of education, the wisdom of hard-earned expertise, the conclusions of research, the nature of human nature, simple management principles, and common sense.

Pushback against a system now abusing the young and wasting their potential is decades overdue. Teachers need autonomy, freedom to experiment, and opportunities for meaningful dialogue with each other and the communities they serve that they don't now have. For most, however, pushing back in today's economy and retribution-prone school culture comes at a price few can afford to pay.

Political power must be exercised, but parents, grandparents, and thoughtful, caring citizens are the only ones with enough clout to exercise it effectively. They need to recognize poor policy when they see it, organize, and act appropriately. **Ω**

Easily-learned natural systems concepts are keys to understanding complex reality.

What Henry Ford knew

Orlando Sentinel, 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

[1] http://www.communicationcache.com/uploads/1/0/8/8/10887248/general_systems_theory_-_the_skeleton_of_science.pdf

[2] A free course of study for this: https://www.marionbrady.com/IntroductiontoSystems.asp

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.

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…

ORLANDO SENTINEL ARCHIV

Henry Ford sits behind the wheel of an early automobile offered for sale by the Ford Motor Co.

"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 could see 'connections,' could see how short-term sacrifices could have long-term benefits.

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**

Finding patterns and relationships are the first steps to understanding systems. That process is largely missing from the conventional curriculum.

The suggestion of "systems" as the central focus for learning opens the door to sub-concepts that can organize every kind of knowledge. Systems have settings or environments, components (e.g. people), interactions, and driving forces (e.g. shared ideas and values). Each of these sub-concepts can be elaborated to any required degree. And each of the four affect all the others, causing change over time. These are conceptual tools for the study of galaxies, molecules, neighborhoods, nations. In human systems, the sub-concepts are the five familiar elements of stories that are central to sense-making: **Who? What? When? Where? Why?** These are our *primary* organizers of sense; academic disciplines and school subjects are secondary organizers, elaborating and integrating our primary organizers. Early understanding of this rather obvious fact creates a rock-solid conceptual foundation for an unsurpassed mental model of reality.

See https://www.marionbrady.com/Books.asp, *What's Worth Learning?* For an in-depth discussion of fundamental systems concepts. They're central to the free curricula we've created: https://www.marionbrady.com/Systems-Based-Learning-Courses.asp.

10. Solution: The School as Learning Resource

What real learning actually looks like in class

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted June 18, 2014:

Part One

The main theory shaping traditional schooling says teaching means delivering information. Critics say that's a poor theory, but its adequacy is so taken for granted that billions of private and taxpayer dollars are being spent, millions of kids and teachers are being battered, and the future of America is being put at risk, by schemes based on the theory. Incredibly, the No Child Left Behind and Race to the Top programs were put in place without a single pilot or experimental program to check the validity of the "deliver information" theory.

Like many long-time educators, I think the theory is simplistic at best and flat wrong at worst. That very wise teacher, the late John Holt, pinpointed the problem in a 1984 article in the magazine *Growing Without Schooling*. "Learning is not the product of teaching," he wrote. "Learning is the product of the activity of learners."

When I finally accepted that obvious fact, I stopped delivering information and started giving small teams of learners something difficult to do. I became an advocate of project-based learning (PBL).[1] Its merit is firmly established. Research, common sense, and well-performing PBL programs in America and abroad make clear the merits of schooling that allows kids to move beyond the forced passivity of reading and listening, get up from their desks, and undertake real-world, hands-on tasks that teach as only firsthand experience can.

But acceptance is slow. Very slow. The conventional wisdom says teachers deliver information. Teachers are trained to deliver information. Media images of classrooms show teachers delivering information. Powerful people—Presidents of the United States, governors, chief state education officers, Congress, Bill Gates, Arne Duncan, the Waltons, and so on—think educating means delivering information. The publishers of textbooks are in the information-delivery business, and the manufacturers of standardized tests create tools to measure how much information is being delivered.

(There's growing resistance to the testing juggernaut, but mostly because of over-testing, not because the "delivery" aim is being questioned.)

There is, however, a problem with project learning. Schooling that doesn't teach the usual content of the core curriculum in the usual way isn't acceptable, and projects

[1] http://en.wikipedia.org/wiki/Project-based_learning

don't do that. They have intellectual depth but not the breadth to cover the information delivered (albeit poorly) by the core curriculum.

So I've a proposal—a project so all-encompassing and difficult that learners undertaking it have no choice but to make continuous use of the core subjects. They learn and *remember* it, because they're involved in a project they consider important.

That project: Designing and carrying out a long-term study of the school they attend, and using their growing knowledge of their school to improve it.

Schools have histories, infrastructure, purposes, and problems. They have populations, patterns, and procedures. They have community relationships and responsibilities. They have a culture. The possibilities for description and analysis are vast and varied.

For example, schools use energy—electricity, and probably, directly or indirectly, some form of fossil fuel. Developing real, in-depth understanding of the sources of that energy, how the school uses it, how much it costs, how efficient it is, how it impacts the environment, and so on, doesn't just lead to geology, chemistry, physics, economics, politics, and other fields, it relates and integrates them in ways not possible when those fields are studied in isolation from each other as schools ordinarily offer them.

Consider: The school models the larger world in all its incredible complexity. Making sense of it has learners doing, with help from professionals, what they'll be doing for the rest of their lives in their jobs, in the organizations to which they belong, in their neighborhoods and communities, and in their country. It has them doing what all humans, consciously or subconsciously, continuously do—ask themselves, "What's going on here, how can I make the most sense of it, and put that sense to good use?"

Consider: Asking kids to use their growing understanding of the school to propose ways to improve its performance not only shows a level of respect for their capabilities that pays off in myriad, often unexpected ways, it can be a major source of fresh thinking.

Consider: When what's learned is concrete rather than abstract, when it's immediately useful instead of "this will be on the test," when knowledge is forged by dialogue with peers and coaches, so much more is accomplished in so much less time it allows the entire school day to be rethought. With the basic skills and concepts of a general education covered by the project, there's time for advanced classes for those for whom they're appropriate, time for electives discarded by present reforms, time for extra-curricular activities, time for magnet schools to expand instruction in their specializations, time for apprenticeships, work-study arrangements, and other, not-yet-invented alternatives to "seat time.

Finally, consider that schools are comprehensive, integrated sociocultural *systems, and such systems, writ large and called "cultures" and "civilizations," are the*

makers of meaning and the shapers of human history. What better way to grasp the "big picture" of life on planet Earth than by intensive study of a small-scale but near-perfect manifestation of it?

All that from a teaching resource that's instantly accessible and doesn't cost a dime.

***

Part Two: How "active learning" looks in a real school

In Part One, I argued the merit of project-based learning, with particular emphasis on a project that had small teams of learners designing and carrying out a detailed, long-term study of the school they attend, and using their growing knowledge to improve it.

What follows are parts of an email from a working educator, William Webb, director of The Center for Educational Options in Henry County, Kentucky. His school, he says, "is heavy with students who've given up on schooling. Frustrated and often angry, they come to us as in-school drop-outs, present in body (because the law requires it), but absent in spirit."

His first concern (as it should be for all educators) isn't academics but in "creating a sense of community." He does this by teaching a set of social skills (communication and assertiveness, emotion-management, problem-solving, conflict-resolution and working in groups) known to be central to positive, successful work and community interactions."

Teaching life skills in the context of community, he says, "takes advantage of innate needs for belonging, competence, and efficacy. As such, students understand intuitively that the skills they are learning are useful and meaningful."

But it's a school, so the core subjects must be taught. For that, he described his experience using the course of study, *Connections: Investigating Reality*[1], in the manner described in Part One.

Here's more of his post:

> *...we introduced our students to the notions of "patterns" and "connectedness" and the dynamics of "systems." To grasp these abstract concepts as they apply to relationships between human behavior and physical environments, the students decided to acquaint themselves in a more mindful way with a small commons area located between our building and the high school. Working in teams of four, the students were first asked simply to describe the area linguistically.*

[1] Revised and retitled *Introduction to Systems*, but all the activity Webb describes applies equally to the newer version of the course. See https://www.marionbrady.com

They were mildly surprised to realize that a simple verbal description was not simple at all. The boundary of the area was established beforehand, and yet descriptions varied considerably from group to group. Landmarks that seemed important to one group were virtually ignored by another. Estimates of distance were wildly inaccurate.

Words chosen to describe some aspect of the environment were imprecise and vague ("There's a small hill a little bit behind us that's pretty steep."). Listening to each group's verbal descriptions, no one needed a curriculum or assessment expert to define the "lesson targets." The important questions were obvious. How do we account for the differences in descriptions? How do we reconcile these differences to come to a shared perception of our environment? Why is it important to be precise in describing our surroundings? How do our differing perceptions of our immediate surroundings influence the way we interact with each other? These and many other questions were asked and answered in the follow-up discussion to this "simple" exercise.

Moreover, student involvement during this discussion was profoundly different from typical high school classroom interactions. Freed from the cognitive task of memorizing facts, our students argued and conceded and elaborated and prioritized and paraphrased and deduced and just about every other verb that the Bloom taxonomists say are important to learning.

And they were doing it in the context of an authentic task with real-life implications. Once the students had settled on a verbal description of the commons area, they were asked to draw a diagram of the area to scale. Not one student had any experience with that exercise. Most were math-phobic, having been spectacularly unsuccessful in the math courses taught in the traditional classroom. But having spent the past few days thinking about their environment in a more mindful way, they were motivated to tackle this assignment.

Armed with 50' tape measures, they had little trouble measuring the lines that defined the area's boundary. But connecting those lines in a scaled representation of the area presented some challenges. One challenge was the way an adjacent building jutted into the space the students were detailing. In order for the scaled drawing to come out right, the angle that the building "interrupted" the space had to be accurately defined—and it wasn't an obvious right angle. With no way to use a protractor, the students were stymied.

Attempts to use their limited knowledge of geometry to find a mathematical solution were futile. Solutions on the Internet were too technical in their language to be helpful. And then, in a flash of insight, one student (whose math skills had been assessed by standardized testing measures as being in the lowest "novice" range) ran into the classroom and returned with a block of modeling clay which he

proceeded to shape around the building's corner. Once he had "modeled" the angle in this way, it was a simple matter of transferring the angle to a piece of paper which could now be measured with the protractor.

Voila!! The satisfaction this student felt at finding that solution and the affirmation he received from his classmates was a brand new experience. He felt smart. He was smart—and Connections *gave him a chance to demonstrate that smartness in a way the traditional curriculum never had.*

One other example:

As previously mentioned, the students were asked to draw a scaled diagram of the commons area they had chosen to investigate. This, of course, was a ratio and proportions exercise most likely introduced to students in elementary school. But our math-challenged students approached the assignment as if they had been asked to prove the Pythagorean Theorem. A freshman girl (let's call her Kayla) with a neurotic aversion to all things mathematic, watched quietly while the other three (somewhat mathematically challenged) members of her group struggled to work through the steps for converting their measurements to the scaled drawing.

After looking at their measurements and the size of the graph paper they were required to use, they decided that 8 feet of measured distance should be 1 inch on the drawing. There were dozens of measurements—2'9", 47'3", 9'4", etc. The teachers were no help. The students were on their own to figure this out. Normally, Kayla tuned out when presented with an assignment from a math book, engaging in all manner of avoidance (and class distracting) behaviors. But this was different…a problem, for sure, but not just a math problem. So, Kayla listened differently and she watched as different strategies were tried, and then—she got it! "We gotta make everything inches, and then we have to divide by 96!"

She showed her group mates. It was a special moment and nearly impossible to describe. Normally a bit histrionic in her actions, Kayla seemed more centered, more authentic, in her excitement and enthusiasm at discovering this hidden skill. She was clearly enjoying feelings of competence that she rarely experienced in the school setting, let alone while doing math. She liked how it felt. She insisted on doing all the conversions herself, working without a break through part of her lunch period to finish.

Connections*, with its emphasis on creating the type of "sense-making" opportunities in which the brain strives innately to engage, provides a much broader landscape for their occurrence. For those truly interested in addressing the inefficiencies in our current educational system, this course of study is a sensible, doable place to start.*

Educators who feel their first obligation isn't to raise test scores but to help the young make the most-possible sense of themselves, others, and the world, should find *Introduction to Systems* (the new version of *Connections*) worth exploring. It's a first of its kind and begs for continuous inputs from working classroom teachers, but it's a start. And it's free, needing merely to be downloaded: https://www.marionbrady.com/IntroductiontoSystems.asp. **Ω**

Education reform: An ignored problem, and a proposal

Posted June 25, 2010: *t r u t h o u t | Op-Ed*

The "standards and accountability" education reform effort began in the 1980s at the urging of leaders of business and industry. The reform message preached by Democrats, Republicans, and the mainstream media is simple. 1. America's schools are, at best, mediocre. 2. Teachers deserve most of the blame. 3. As a corrective, rigorous subject-matter standards and tests are essential. 4. Bringing market forces to bear will pressure teachers to meet the standards or choose some other line of work.

Competition - student against student, teacher against teacher, school against school, state against state, nation against nation - will yield the improvement necessary for the United States to finish in first place internationally.

Major Reform Premises

Education policy, the new reformers argue, should be "data driven." Standardized tests produce the necessary data in the form of scores. The scores are valid because the tests are valid. The tests are valid because they're keyed to standards. The standards are valid because they're keyed to the "core curriculum." And the core curriculum's validity has never been questioned.

Or, to sequence the logic differently: tradition legitimizes the core curriculum, the core curriculum legitimizes certain school subjects, those subjects legitimize the standards, the standards legitimize the tests, the tests legitimize the scores, and the scores legitimize the reform strategy.

Imagine an inverted pyramid, with the reform effort resting on the assumption that the math-science-language arts-social studies "core" prepares the young for what's shaping up to be the most complex, unpredictable, dangerous era in human history.

Simple. Logical. Wrong.

The Problem

The core was adopted in 1893. Custom and the conventional wisdom notwithstanding, it's deeply flawed. (1) It directs random, complex, often abstract information at learners at rates far beyond even the most capable learner's ability to cope; (2) It minimizes or even rejects the role that free play, art, music, dance, and social experience play in intellectual development; (3) It is so inefficient that it leaves little time for apprenticeships, internships, co-ops, projects, and other links to the real world and adulthood; (4) It neglects extremely important fields of study; (5) It has no built-in mechanisms forcing it to adapt to social change; (6) It gives short shrift to "higher order" thought processes; and (7) It makes no provision for raising and examining questions essential to ethical and moral development.

The core (8) has no agreed-upon, overarching aim, (9) lacks criteria establishing what new knowledge is important and what old knowledge to disregard to make way for the new, (10) makes educator dialog and teamwork difficult by arbitrarily fragmenting knowledge, (11) overworks learner memory at the expense of logic, (12) emphasizes reading and symbol manipulation skills to the neglect of other ways of learning, (13) is keyed to students' ages rather than to their aptitudes, interests, and abilities, (14) doesn't move learners steadily through ever-increasing levels of intellectual complexity, and (15) ignores the systemically integrated nature of knowledge and the way the brain processes information.

As it's usually taught, the core (16) penalizes rather than capitalizes on individual differences, (17) encourages futile attempts to quantify quality and other simplistic approaches to evaluation, (18) fails to adequately utilize the single most valuable teaching resource - the learner's first-hand experience, (19) requires a great deal of "seat time passivity" at odds with youthful nature, (20) is inordinately costly to administer, (21) emphasizes standardization to the neglect of the major sources of America's past strength and success - individual initiative, imagination, and creativity - and, (22) fails to recognize the implications of the very recent transition from difficult learner access to limited information, to near-instantaneous learner access to prodigious amounts of information.

If, as the *No Child Left Behind* legislation, *Race to the Top*, the *Common Core State Standards Initiative*, and the conventional wisdom assume, the core is sound, the present education reform strategy is probably on the right track. But if poor performance isn't a "people problem" but a *system* problem - a poor curriculum – these programs are at best a diversion and at worst counterproductive. They maintain and reinforce the same curriculum that helped bring schools to crisis.

Any *one* of the 22 problems noted above is serious enough to warrant calling a national conference to address it, and the present curriculum suffers from *all* of them. If

the young and their parents really understood how poorly they're being served, they'd be in open revolt.

The most useful thing Congress and state departments of education can do is abandon authoritarian, centralizing initiatives and legislation that dictate what's taught. By propping up an obsolete, dysfunctional curriculum, they're making a very bad situation much worse.

A Proposal

Facts must be faced. First, the traditional curriculum is a confused, incoherent, disorganized mess. Second, standards and tests do nothing whatsoever to improve it. Third, it can't be fixed by "top down" mandates from Congress, state legislatures, or district offices. The fix will have to come "bottom up" and spread from school to school, propelled by its success with average teachers working in ordinary classrooms with learners of all ability levels.

The idea with the most potential for triggering fundamental education reform isn't new. Alfred North Whitehead stated it succinctly in his 1916 Presidential address to the Mathematical Association of England. The education establishment, he said, "must eradicate the fatal disconnection of subjects which kills the vitality of the modern curriculum."

That hasn't happened. Thinkers have been saying for centuries that it's not possible to educate - help learners make better sense of reality - by breaking it apart and studying the parts. The reason is obvious: It's the parts *and* their relationships that explain reality. Think "jigsaw puzzle." The more pieces fitted together, the more sense the puzzle makes. What's taught needs to form an organized, logically coherent, systemically integrated structure of knowledge, and do it in a way every kid can understand. Until that happens, schools at all levels will continue to waste learner time and potential at a criminal rate.

A few educators, sensitive to the problem, try to integrate knowledge using themes, projects, problems, concepts and other information organizers. Good work often results, but learners are still sent on their way without a comprehensive, seamless, functional mental map of reality.

As unlikely as it may seem, there's a simple fix for the curriculum- an easy way to weld its seemingly unrelated parts into a coherent whole. Most of the core's 22 problems stem from a wrong aim. As the *Common Core State Standards Initiative* makes clear, policymakers think education's aim is to improve math, science, language arts and social studies instruction, but they're wrong. The main aim of education is to help learners make more sense of experience - of themselves, each other, the world, and reality. Proper standards don't say what a kid should know about this or that school subject; they say what kind of person it's hoped an education will help the kid become.

Get the aim right, and the 22 problems go away. Get the aim right, and learners will stop being bored or frustrated and dropping out. Get the aim right, and attendance officers, cops in hallways, and pay-for-performance schemes won't be needed. Get the aim right, and taxpayers will stop defeating school bond issues, politicians will stop firing simplistic reform bullets, and the public will realize that "the race to the top" can't be won by beating up on teachers and kids. Get the aim right, and the deepest of all human drives - the need to know, to understand, to make more sense of life - will take over and propel a true education revolution.

There's an easy way to pursue education's proper aim - improving learner ability to make sense of reality. An ideal laboratory is already in place. It puts school subjects to work. It's "hands on." It's instantly accessible. It adapts to every ability level. It's unfailingly relevant. It requires learners to use every known thought process. It stimulates imagination and creativity. It erases the artificial walls between school subjects and between the "two cultures" - the sciences and the liberal arts. Its use requires no special teacher training or expertise. Using it doesn't cost a dime. In fact, the laboratory's efficiency can both radically reduce general education costs and free up time for instructional options and innovations not now possible.

That laboratory is the school itself, and its immediate environment. It's all there - a rich, concentrated, "representative sample" of reality, a "textbook" every kid can read, understand, and use.

If teachers and learners see the task as making more sense of immediate experience, if they use their school as the initial focus of study to create a descriptive, analytical "template," and if they're then challenged to make the school a true *learning* organization, an education revolution will be inevitable. A social institution all but paralyzed by a static curriculum and bureaucratic ritual will become dynamic, adaptive, and creative, capable of playing its proper role in shaping learners and guiding collective action.

The major instructional strategy is simple - teachers and students learning by doing what all humans must do in order to survive - asking and answering questions about what's happening, why, and what should be done next. Geography, math, economics, physics, history, and so on, stop being abstract bundles of information to be memorized to pass a test, get a job, or win admission to college. School subjects become practical, useful tools for making sense, helping learners construct sophisticated models of reality they'll use every day for the rest of their lives.

The questions asked are whatever learners can think of to ask. ***What's a school for? Where, exactly, is this one? What does it look like on Google Earth? When was it built? How is it constructed? What's the size and shape of the space it occupies? How many students does it serve? How does its ethnic composition compare to the larger society of which its population is a***

sample? What's the school's purpose? Who says so? Is it succeeding in doing what it's supposed to do? Why or why not? How much does it cost to operate? Who pays? How do they feel about that? Why? Who owns it? What resources does it use? Where do they come from, with what environmental consequences? How does its climate control system work? What waste does it generate, where does the waste go, and where will it be when I'm 60 years old? How many people run the school? What do they do? Who makes which decisions? Should they or somebody else be making those decisions? Why? How do taxpayers feel about what they're getting for their money? [Emphasis added]

Then, questions of a different sort, questions that turn learners' attention inward, raising consciousness, supporting the transition from mere "knowing," to "knowing what they know." ***What's the best way to organize all the information being generated by our questions and answers? Is a system of mental organization important? Are school subjects good information organizers? Is there a better approach? How does what I forget differ from what I remember?***

The skills of observation and description developed by this kind of work, the analytical strategies devised, the complex thought processes exercised, the causal sequences traced, the mental models constructed, are those learners will use for the rest of their lives to make more sense of workplace, community, town, region, nation, and world.

Finally

There's a "looseness" in learning by actually *doing* that's worrisome, even unacceptable, to many both in and out of education. It runs counter to the current reactionary, get tough, tighten-the-rigor-screws school reform effort. Some see it, mistakenly, as soft, anti-bookish, child-directed, John Dewey-Progressive. It's at odds with the ancient, naive assumption that the elders know enough about individual human potential, the range of differences in the young, and the shape of the future to decide what should be taught.

There's some truth in that assumption, of course, but not nearly enough to support the traditional core curriculum and the present effort to standardize learners rather than capitalize on their differences.

Whitehead again, same speech: "The second-handedness of the learned world is the secret of its mediocrity." The transition from second-hand to firsthand knowledge, from two-dimensioned text about reality to three-dimensioned reality itself, from "How much do you remember?" to, "How much sense can you make of what's happening right here, right now?" wouldn't be easy. Many educators, fearful of abandoning the familiar, or fearful that their specialization had been slighted, would resist. Those making billions

from standardized testing and test preparation materials would lobby furiously against change. Letters to editors would continue to say that kids should be in their seats, facing front, quietly writing down teacher words. Ideologues in reactionary think tanks and legislative chambers would continue to insist that the rigor of market forces could cure all educational ills.

But those reactions to genuine change are unlikely, because genuine change is unlikely. Over the last two decades, corporate America has spent millions in a sophisticated campaign to convince politicians and the public there's nothing wrong with American education that vouchers, charter schools, merit pay, standardized testing, alternative teacher licensing, and union destruction, can't cure. They're now in the final stages of wrapping up a successful effort to install national standards in preparation for national tests.

That done, Thomas Jefferson's dream will be dead. Corporate America will be America's school board, and the heavy hand of 19th Century industrial standardization will snuff out the last small flames of individuality, imagination and creativity that have survived *No Child Left Behind*.

"Human history," said H. G. Wells, "is more and more a race between education and catastrophe." As any day's newspaper surely affirms, catastrophe has a commanding lead. In the next few months, Congress will very likely clinch it.

Note: An example of an integrated curriculum for adolescents and older students is available free: http://www.marionbrady.com/ (See link to *Introduction to Systems*.) **Ω**

A salvage operation for public education

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted February 19, 2011:

Many years ago an elderly widowed aunt brought into our family a replacement uncle. Dan, she said, had once been deputy state superintendent of schools. Before that, he'd been a high school principal and a county superintendent.

The little I know about Uncle Dan comes mostly from pins, plaques, and other contents of a cardboard box left with a cousin after he and my aunt died. That he did well financially, including serving on bank boards, might suggest to those familiar with southern-style politics that he at least knew his way around the hallways of the state capitol.

In the cache of memorabilia was a sort of diary written and given to Dan by a friend who signed it "JH." Recalling a situation in which JH had found himself in 1913—a high school principal at odds with his boss—he'd written:

"The board and superintendent had developed in the school what I for lack of a better term call a mechanistic tendency. The general idea was that if tests were given every day, and long examinations once a month, if grades were then marked to the third of one percent, if the principal would keep all papers and send in to the superintendent all the individual grades, somehow education of a very rare sort would result."

Ninety-eight years have passed since 1913, and the two very different views of educating of JH and his superintendent continue to frame the debate.

Today, aligned with the superintendent, are high-profile corporate managers who shape much of the conventional wisdom about educating. All share the view that educating is a simple matter of opening up heads, pouring information in, and checking gauges to see how things are going.

Lou Gerstner[1], an early, important figure on the corporate-manager side of the faceoff, says educating is just a matter of "delivering information." Bill Gates bubbles with enthusiasm about making available on the Internet the lectures of the world's great authorities on various subjects.

Facing off against the managers are many of America's most experienced educators, all arguing that this level of ignorance about educating will do America in.

Sadly, there seem to be no words or concepts shared by the two groups that make meaningful communication possible. The term JH used—mechanistic—comes at least as close as other words to capturing the corporate-manager view of teaching and learning. Gerstner and Gates are mechanists. They see in the tell-them-and-test-them process a beautifully simple, easily executable design for educating. And, because that design fits with and is reinforced by pop culture myths about the ability of free-market forces to cure all social ills, it's an easy sell to the mainstream media and the public.

But "mechanistic" fails to bridge the gap in understanding between corporate managers and educators. Indeed, bridging that gap may be impossible. An apocryphal Chinese story has it that 2,000 years ago, a young teacher, attempting to defend himself to village elders angry about his departure from traditional instruction, explains: "If I tell them, they forget. If I show them, they remember. If I let them do it for themselves, they understand."

Two thousand years says the communication problem between the managers who think mere telling teaches, and educators who know from hard experience that it doesn't, isn't likely to disappear anytime soon.

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[1] http://online.wsj.com/article/SB122809533452168067.html

But the stakes are too high not to try to find a way around the faceoff, so I've a proposal.

No one—not even the most enthusiastic fan of traditional education—argues that humans don't learn from experience. The main objection is (and has always been) that learning by doing is just too inefficient. There's only so much time in the school day, say the managers, and there's so much to "cover." Compacting it for quick delivery by lecture, text, or technology just makes the most sense.

After all, why should every kid reinvent the wheel?

Here's my proposal: Set aside an hour or so a day for out-of-seat, out-of-classroom, "real world" experience. (Think of it as a cheap, easily reversed experiment.)

There are practical considerations, of course. Kids accustomed to years of rigidly imposed "seat time" can't just suddenly be turned loose to wander around. And in an hour or so they wouldn't be able to wander very far anyway.

Add to that the fact that there's no longer money for field trips, and if there were, field trips generate lots of complicated logistical, insurance, and supervision problems.

Then, add yet another fact, that enhancing the kind of self-direction that makes wandering around productive isn't something American education has ever been encouraged to do. Adult guidance will be necessary.

This means that whatever "real world" experience kids get will have to take place within the existing physical boundaries of the school.

Which, it turns out, have a surprising lot to offer. Useful math is about quantifying reality, and there's enough reality on school property to keep kids quantifying forever.

For their part, the physical sciences are all about making sense of the material universe, and school boundaries offer a big enough sample of that universe to pursue a doctoral degree in whatever physical science one chooses.

Finally, anyone who's ever gotten as far as first grade has come into firsthand contact with enough social complexity for a lifetime of study.

That covers the content of the traditional core curriculum. It's all there—tangible, instantly accessible, waiting to be measured, analyzed, and described, using skills already familiar to educators.

This isn't Mickey Mouse work. Its inherent complexity, its immediate potential for making an important social institution work better, and its relatability to the larger world which it models so thoroughly and conveniently, sees to that.

There's so much wrong with traditional schooling it's tempting to say it's beyond salvaging. Its very system of organization—based as it is on 19th Century Prussian military theory—is upside down. Those who know the most about the system—kids and

teachers—have the least power to change it. Its continued use of a rigid, standardized curriculum designed to produce compliant workers for a system of industrial production that America will never see again, assures irrelevance. Its failure to put in place multi-year, manageable-sized groups of learners guided by small instructional teams, builds in instability and lack of continuity.

The list of problems with today's schools could extend for pages, but no system of education on Earth is better suited to maintaining democracy, or has more potential for developing individual and collective potential, than free, universal public education.

That makes a salvage operation essential. The first step is to reject centralized, top-down corporate control. Bill Gates may mean well, but he's not qualified to be America's education czar.

The second step is accepting that kids walking around with tape measures, meters, trowels, sketchpads and the like are going to learn more in an hour or so than kids glued to their seats for six hours as they're bombarded with secondhand information about which most could care less.

Give teachers and kids some moving-around room, some real autonomy, and in 10 years' time American education will be the envy of the world. **Ω**

Improving schools with 'The Project'

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted September 9, 2011:

A few days ago I got an email from Phil Cullen. Before he retired, Phil was director of Primary Education for the state of Queensland, Australia. He now lives in New South Wales.

Responding to something I'd posted on my website,[1] he wrote:

"I was visiting an Outback, one-teacher school of 21 pupils in Windorah. At the morning tea break, they were climbing and swinging on the windmill tower, a simple construction of iron…four long legs, some cross beams and triangles for strength. When they returned to the room, I asked them to draw the tower. Not one child did. They played all over it every day, but no one had seen it…"

They'd seen it, of course, but the too-familiar tends to slip below ordinary levels of awareness. After a while we stop seeing pictures on walls, patterns in carpets, views from windows, even family members and friends.

[1] https://www.marionbrady.com

What's true of our eyes is true of our ears. We stop hearing the ticking of a clock, the hum of a fluorescent light, the wind and road noise when we're driving.

And it's true of our noses and mouths. Those who live downwind from a dump can't smell the odors, and after a few days of drinking chemically treated water the taste disappears.

Interesting. "Experience is the best teacher," we say, and it's true. We learn to pound nails by pounding nails while thinking about pounding nails, learn to drive a car by driving a car while thinking about driving, learn to think about experience by experiencing and thinking about what we're experiencing.

Everything we know about what's happening to us comes to us through our senses, but as soon as the senses do their job, they turn themselves off. Why isn't this obstacle to learning — our blindness to the too-familiar — a matter of major interest to educators? As far as I can determine, the problem illustrated by Phil's little unmet assignment isn't even talked about, much less addressed.

I was reminded of this a day or two ago as I read the transcript of a speech[1] by David Coleman, an author of and cheerleader for the Common Core State Standards[2] being promoted by "reformers." It was loaded with advice to teachers, but it wasn't advice about how to help kids make more sense of experience. It was about helping them make more sense of "text" — words that grew out of somebody else's experience.

Students, he said, have to be made to pay closer attention to text. They need to read "complex text," be exposed to "academic text," be challenged by "difficult text," and climb "staircases of text complexity."

It goes without saying that kids need to know how to read. But something is surely wrong with an education that puts reading about experience ahead of experiencing experience.

I have a proposal. We think of schools as places where the young are prepared for life. I say we discard that idea and instead think of them as full-blown, rich, fascinatingly complex, real-world slices of life.

Let's treat schools themselves as powerful learning resources, as things to poke, prod, measure, examine, investigate, analyze, describe, take apart, and put back together differently to see if they work better.

Simple questions focusing on immediate school experience can result in hours of deep, effective learning. For example, "What's the per-day cost of getting everyone in this class to school and back?" or "What ethnicities are represented in this school's

[1] http://usny.nysed.gov/rttt/resources/bringing-the-common-core-to-life.html
[2] http://voices.washingtonpost.com/answer-sheet/national-standards

population, how many are in each group, what's their history, and how are the groups evolving?"

It makes no difference if schools are old or new, large or small, rural or urban, public or private, magnet or charter, ordered or chaotic, thoroughly wired or technologically primitive, loved or hated. The actual buildings and grounds, the people who spend their days there, the routines they follow, the beliefs and values that explain their actions, and the systemic relationships between these various "moving parts," model in miniature the world that schooling is supposed to help the young understand.

Let's use the schools we have to operationalize the schools we need, call it "The Project," and make it the only universally required course.

No other project will stretch learner intellect farther. No other project will make more direct, effective, memorable use of reading, writing, math, history, physics, economics, and every other school subject. No other project will be more relevant, do a better job of making abstract ideas concrete, adjust more readily to individual needs and abilities, offer ranges of difficulty more appropriate for every kid, or even come close to it in return on educational investment.

Equally important, no other project will more thoroughly engage emotion. Challenging kids and their teachers to put The Project to real-world use by continuously improving their own school shows a respect for firsthand experience and those who have it that's presently non-existent.

It maximizes autonomy—the engine of imagination, creativity, ingenuity, and successful adaptation to social change. It puts our actions where our mouths are when we talk about liberty, democracy, and individual worth. It replaces top-down mandates (which have never, ever improved classroom instruction), with the only kind of innovation that works and sticks—bottom up.

And it breaks through the too-familiar-to-see barrier to learning.

What's not to like?

If you're concerned about all that material you studied in school that you don't think The Project would "cover," accept the fact that "covering the material" isn't educating. It's ritual. Covering the material is what has brought education to crisis. It's what drives mile-wide-inch-deep "learning" that evaporates as soon as tested. It's why adults retain so little of what they were once "taught." It's what underlies the institution's fad-prone but static nature.

The Project won't take more than a couple of hours a day, will link logically to all traditional content, and leave the rest of the time for capitalizing on America's greatest asset and hope for the future — individual differences.

Freed from "seat time" laws and an onerous list of required subjects, schools can get serious about individualizing instruction, developing specialized courses, meeting local needs, making extra-curricular activities curricular, and breaking free of innovation that merely gives old ideas new names.

If America is to have an educational system as good as Finland's,[1] we'll have to get serious about educating, follow Finland's lead, attract the cream of the crop to the teaching profession, and let them alone so they can do their job.

If America is to have an educational system better than Finland's, we have to get past the assumption that rigorous math, science, language arts, and social studies instruction add up to a quality education; past the notion that educating is mostly a matter of transferring information; past the denigrating idea that the point of it all is just to prepare the young for college or work.

Humanness has far more to offer than that, and America is better positioned than Finland and every other country to explore its potential because we're ethnically diverse. If we treat that as a wonderful educational asset to exploit rather than a liability to be minimized by standardization and social pressure, we'll go back to the head of the class.

One more thing: Accountability. Those hostile to public schooling have blown it far out of proportion, so the public demands that the matter be addressed. Because The Project will trigger thought processes far too complex and idiosyncratic to be evaluated by standardized tests, contracts will have to be cancelled. Period. There's no way that test items written in cubicles at McGraw-Hill, Pearson, Educational Testing Service, or at any other remote site, can cope.

But that's no problem. The job can be returned to those who had it before corporate heads, rich philanthropists, and politicians undermined respect for and confidence in them — classroom teachers. They're on top of the problem. They talk to their students every day, read their papers, watch their body language, listen to their dialogue, laugh at their jokes, cry at their misfortunes, look over their shoulders as they work. No one else is more qualified than teachers to say how well students are doing.

And using the already employed will save taxpayers billions of dollars. **Ω**

[1] http://voices.washingtonpost.com/answer-sheet/research/will-firing-5-10-percent-of-te.html

Beyond tests: How to foster imagination in students

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted November 23, 2013:

Teachers teach to tests. Up until a few years ago, that wasn't a problem because most teachers wrote their own. When business leaders convinced Congress that teachers couldn't be trusted, testing was handed over to commercial manufacturers.

Those paying attention know that the high-stakes testing craze has pushed hundreds of thousands of kids out of school, trivialized learning, radically limited teacher ability to adapt to learner differences, and ended many physical education, art, and music programs. It unfairly advantages those who can afford test prep, makes Congress America's school board, creates unreasonable pressures to cheat, closes neighborhood schools, taints the teaching profession, and blocks all innovations except those the results of which can be measured by machines—just to begin a much longer list.

In books, journal articles, op-eds, columns and blog posts, I've explored many of these and other problems created by the new testing policies, but I don't remember calling attention to a problem created by today's emphasis on "minimum competence." It deserves serious thought.

Stripped to essentials, here's how minimum competency testing works: Authorities make lists of what they think kids should know. The lists are given to teachers, along with orders to teach what's on them. Standardized tests check to see if orders are being followed. Somebody (not educators) sets arbitrary pass-fail cut scores, and kids who score above the cut are considered "minimally competent."

Sound reasonable? Most people seem to think so. But schools concentrating on minimum competence can't turn out kids smart enough to deal with the problems they're going to inherit. Schooling's proper emphasis is on maximum performance, not minimum competence, but most educators' minds are on something else—the penalties for failure to lift kids above minimum competence levels. Those penalties are so harsh that devising strategies to avoid them has become educator Job One.

Few school administrators will admit it, but one avoidance strategy has them assigning their best people to the kids clustered around the pass-fail cutline, trying to nudge them up into minimum competence territory. This, of course, can work, but it comes at the expense of all the other kids in the school—those considered hopelessly below or safely above that pass-fail line.

Maximum performance

Maximum academic performance lies in a direction where few seem to be looking, and fewer still are offering instructional materials designed to get there. To avoid being

dismissed as too far out in education la-la land to take seriously, I'll let Albert Einstein point the direction, then I'll suggest a way to get there.

"Imagination," said Einstein, "is more important than knowledge. For knowledge is limited to all we now know and understand, while imagination embraces the entire world, and all there ever will be to know and understand."

Consider: We can't do anything about the past. It is what it is, and there's no changing it. The most we can do is try (certainly harder than we now are) to make useful sense of it. But the future is a different matter. Its arrival is inevitable, we have at least some control over it, the importance of exercising that control wisely is self-evident (except perhaps in Congress), and if schools don't teach how to do it, it's not going to get done—at least not on a scale sufficient to save our skins.

To that end, there's no getting around the central role played by imagination. If probable, possible, and preferable futures can't be imagined, the skills necessary for coping with those alternatives aren't going to be developed. And if those skills aren't developed, America will continue its downward educational trajectory.

Below are four imagination-stimulating learning tasks written for middle or high school project teams. All four meet criteria that many years of working with adolescents tell me are important. (a) The tasks are intellectually challenging but doable. (b) They're concrete rather than abstract. (c) They're real-world rather than theoretical. (d) They make use of all school subjects. (e) They require thinking-out-loud dialogue. (f) Most kids find them interesting enough to arouse emotion. (**G**) They require learners to switch from *mentally storing existing knowledge, to creating new knowledge*.

I made that "g" big to call particular attention to the sentence that follows it. If traditional education had been more defensible, if it had always required kids to construct new knowledge, the last quarter-century of corporately driven educational turmoil would never have happened. It would have been obvious to those now running the education show that they didn't know enough about educating to take control of policy.

Assignments:

(1) *Much of what humans accomplish is done by organizations. Armies protect from enemies, legislatures write laws, manufacturers produce goods, contractors build roads, religious congregations promote spiritual values, hospital staffs care for the sick, and so on.*

Given the importance of organizations, understanding them is essential. You should know why and how they form, how they differ, why some are efficient and others not, how decisions are made, why all of them tend to become obsolescent, etc.

Your school is a convenient organization to examine. Work with your team to design an outline or plan to guide study of "My School"—everything you can think of that relates to it in any way. When you've finished, combine your plans with those of other teams to create a master plan, then use it to organize your descriptions and analyses.

Finally, use what you've learned to make recommendations to administrators or the school board for how the organization could do better what it's supposed to do.

Organizations are complicated. Take your time, do the job right, and realize that what you're doing will help you for the rest of your life as you take what you learn to workplaces and the world beyond school.

(2) *Almost certainly, the immediate area around your school is changing—gradually getting dirtier or cleaner, prettier or uglier, safer or more dangerous, more or less of a "community," etc. List questions and step-by-step procedures you'd follow to find out what's changing, how, why, and with what possible long-term outcomes.*

(3) *Choose one of the following policies and create a flow chart identifying its probable consequences for a nearby neighborhood. Extend the flow chart to identify the probable consequences of those initial consequences, and the further consequences of* ***those*** *consequences:*

- *Every family must grow at least a little—say, at least an eighth—of the food it eats.*
- *No person can generate more than one pound of waste per week that can't be recycled.*
- *Except in an emergency, no able-bodied adult can use a motorized vehicle for a commute of less than a mile.*

(4) *A local official has proposed zoning changes that would allow families to run small businesses in their homes or live in their places of business. In a series of numbered points, argue the pros and cons of the zoning change.*[1]

I know from many years of firsthand classroom experience that these kinds of projects work. They don't just stimulate interest, imagination and creativity, they

[1] These tasks are taken from or are similar to those found in the course of study *Introduction to Systems,* http://www.marionbrady.com/IntroductiontoSystems.asp.

Notwithstanding the fact that the course is free in exchange for useful feedback from teachers, it doesn't get used or even piloted because commercially produced standardized tests can't evaluate this kind of learner performance.

integrate and make active use of every school subject, bring out unexpected intellectual strengths, and almost always reorder perceptions of relative student ability.

But there's a problem: Most educators aren't free to use such activities because standardized tests can't evaluate what the kids do. The work they produce is too complex, too original, too idiosyncratic to be scored by a machine. This, more than anything else, explains my opposition to the current thrust of test-based "reform."

Arne Duncan, Michael Bloomberg, Bill Gates, Joel Klein, Jeb Bush, and others now involved in setting school policy across America demand that decisions be "data driven." They cite an old business adage: You can't manage what you don't measure.

To these reformers, "data" largely means scores on standardized tests. Those scores (despite test manufacturers' warnings) increasingly determine educator reputation, employment, and pay. They assign letter grades to schools, grades that often affect real estate values, redistribute state funding, rationalize parent-trigger legislation, and enable other devious privatizing schemes. The scores justify closing neighborhood schools or converting them to charters. They get misused by politicians, and channel billions of dollars of public money into corporate coffers to buy consultant services, tests, and test prep materials.

That's what test scores do. What they don't do, what they can't do, what they'll never be able to do, is measure what's easily the most valuable outcomes of a good education—imagination and creativity.

(I note in passing that piling all the above consequences on the shoulders of the young goes a long way toward explaining why test-inundated kids get depressed, sick, cry, soil their underwear, vomit, hate themselves when they can't finish a test or don't know answers, tune out or drop out when their scores say they're not minimally competent.)

Today's reformers refuse to admit that they have anchored their mandates in false premises. They're so sure that what the young need to know is known, so sure that standardized tests can evaluate the quality of non-standard thought, so sure that competition can do for education what it sometimes does in business, they won't even talk to those of us who disagree. Over the last quarter-century they've built a multi-billion dollar juggernaut based on those three false premises, and it's rapidly burying America in intellectual mediocrity.

Parents and concerned citizens have a choice. They can stand quietly aside as business leaders, lawyers, hedge-fund managers and politicians, cheer-led by mainstream media, continue down

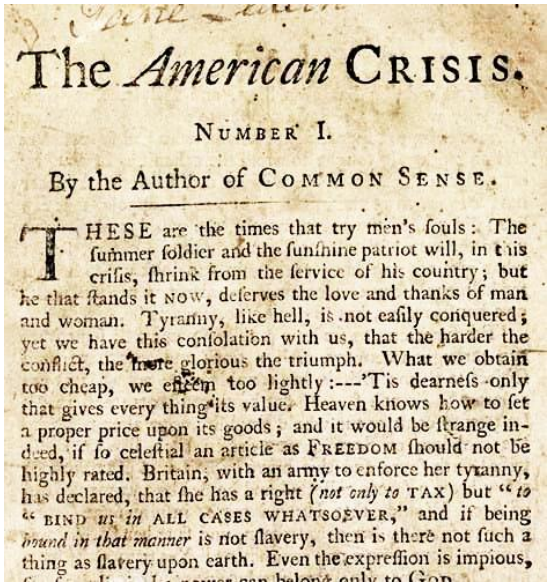
the super-standardizing education road, wasting billions of dollars and trillions of learning hours on tests that can't measure abilities essential to survival and success. Or they can accept the centrality of imagination and creativity in humankind's struggle to achieve its potential, and demand that minimum-competency testing be replaced with maximum-performance tasks.

It's one or the other because the two are incompatible. **Ω**

11. Paradigms for Progress

A REAL paradigm shift in education

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted on February 11, 2013:



The *American* CRISIS.

NUMBER I.

By the Author of COMMON SENSE.

THESE are the times that try men's souls: The ſummer ſoldier and the ſunſhine patriot will, in this criſis, ſhrink from the ſervice of his country; but he that ſtands it NOW, deſerves the love and thanks of man and woman. Tyranny, like hell, is not eaſily conquered; yet we have this conſolation with us, that the harder the conflict, the more glorious the triumph. What we obtain too cheap, we eſteem too lightly:---'Tis dearneſs only that gives every thing its value. Heaven knows how to ſet a proper price upon its goods; and it would be ſtrange indeed, if ſo celeſtial an article as FREEDOM ſhould not be highly rated. Britain, with an army to enforce her tyranny, has declared, that ſhe has a right (*not only to* TAX) but "*to* "BIND *us in* ALL CASES WHATSOEVER," and if being *bound in that manner* is not ſlavery, then is there not ſuch a thing as ſlavery upon earth. Even the expreſſion is impious,

I envy Thomas Paine's way with language. I've been searching for years for words that would have the impact of those he penned in his 1776 pamphlet, "The Crisis."

Admittedly, "These are the times that try men's souls," and the words that followed, weren't a howling success. Only about a third of the colonists agreed with Paine's call for revolution. Another third wanted to stick with England. The remaining third were neutral or apathetic.

What Paine was able to do that I can't do is sell an idea to at least enough people to make something happen. I need to convince not a third of readers but, say, a tenth, to call their legislators and tell them to dismantle the education "reform" machine assembled in Washington by business leaders and politicians.

Long before corporate America began its assault on public schooling, American education was in trouble. Educators were, however, increasingly aware of the problems and were working on them. When Bill Gates, Jeb Bush, Mike Bloomberg, Arne Duncan, Michelle Rhee, and other big name non-educators took over, that worked stopped.

What I want people to understand is that the backbone of education — the familiar math-science-language arts-social studies "core curriculum" — is deeply, fundamentally flawed. No matter the reform initiative, there won't be significant improvement in American education until curricular problems are understood, admitted, addressed, and solved.

Few want to hear that. Reformers are sure America's schools would be fine if teachers just worked harder and smarter, and reformers are sure the teachers would do that if merit pay programs made them compete for cash. They seem incapable of understanding that classroom teachers are doing something so complicated and difficult that even the best of them are hanging on by their fingernails. If they knew how to do better, they'd be doing it. Would surgeons operate differently if they were paid more?

Would commercial airline pilots make softer landings if they made more money? Would editorial writers write better editorials if their salaries were raised?

Teachers are doing the best they can with the curriculum they've been given. Here (in regrettably abstract language) is the curricular problem at the top of my list:

Change is in the nature of things; it is inevitable. Human societies either adapt to change or die. The traditional core curriculum delivers ***existing*** *knowledge, but adapting to an unknown future requires* ***new*** *knowledge. New knowledge is created as relationships are discovered between parts of reality not previously thought to be related. The arbitrary walls between school subjects, and the practice of studying them in isolation from each other, block the relating process essential to knowledge creation.*

Stick with me here. This isn't complicated, just different from the usual school fare.

(1) **Change is in the nature of things; it is inevitable**. The earth heats and cools. Seasons come and go. Water tables rise and fall. Human populations increase, decrease, migrate. New tools change the ways societies function. People multiply, resources diminish, and waste builds. Civilizations appear and disappear. This is — or should be — the usual content of the core curriculum.

(2) **Human societies either adapt to change or die.** Ancient Mesopotamia, Greece, and Rome are no more. A century ago, the Elks, Eagles, and Masons were popular organizations. More recently, Kodak, Bethlehem Steel, and Sony dominated whole industries. If we value our way of life, we need to understand the dynamics of change, but it's not in the core curriculum.

(3) **The traditional core curriculum delivers *existing* knowledge, but adapting to an unknown future requires *new* knowledge**. Obviously, what will need to be known in the future isn't yet known, from which it follows that it can't be taught. However, the *process* by means of which new knowledge is created *can* be taught.

(4) **New knowledge is created as relationships are discovered between parts of reality not previously thought to be related.** Levels of respect for elders and rates of societal change are related. Elapsed time since death and level of isotopes in fossil remains are related. Exposure to lead and learning difficulties are related. *Discovering and exploring relationships, not mentally storing information, educates.*

(5) **The arbitrary walls between school subjects, and studying them in isolation from each other, block the relating process essential to knowledge creation**. If astronomers only studied the heavens, and oceanographers only studied the ocean, the relationship of moon, sun, and tides would remain unknown. Technological and economic change profoundly impact values, beliefs, and behavior, but study of their connections is missing from the curriculum. Again: Discovering and exploring relationships, not mentally storing information, educates.

(6) **What needs to be known in the future can't yet be taught, but the *process* by means of which that knowledge is created can-and must-be taught.** Traditional instruction places far too much emphasis on content. The problem isn't just that what students need to know can't be known. The unreasonable amount of information dumped on them, the brief life in memory of most of it, and easy electronic access to a near-infinite amount of it, make merely delivering information a poor use of time. Focusing on the real world rather than on second-hand textbook versions of reality, and understanding the process by means of which sense is made of that world, are keys to new worlds of performance.

Standardized, high-stakes tests are the single greatest obstacle in the way of curricular improvement. Sold to the public as a necessary club to hold over teachers' heads, the tests are dumbing down kids at a spectacular rate. The problem isn't test overuse. The problem is their inability to measure what most needs to be measured.

Standardized tests are to accountability what a finger in the wind is to a weather station. What they measure — information stored in memory — is useful, but for kids facing an unknown future, that's not nearly enough. They need to know how to create new knowledge. That knowledge will be *original*, and standardized tests can't evaluate original, non-standard thought.

Unwilling to trust teacher judgment, we've handed their responsibilities to machines incapable of making judgment calls.

Tell business leaders and politicians to put their own houses in order and give education back to educators. **Ω**

A radical idea to transform what kids learn in school

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted May 15, 2012:

Exxon-Mobil is airing education-reform television ads. In the one I've seen most often, implicit and explicit messages are simple and clear: (a) We live in a dangerous, technologically complex world. (b) Our lives, liberties, and happiness hinge on our ability to cope with that world. (c) Coping requires mastery of math (d) On standardized math tests, America ranks 25th in the world. (e) Be ashamed and afraid. (f) Get behind corporate education reform efforts.

I've no confidence in the standardized tests that produced that ranking or the ranking itself. Scores on tests that can't measure the qualities of mind and spirit upon which survival depend are useless. And oversimplifying statistics to support an ideology-driven agenda is inexcusable.

I agree, however, that America needs good mathematicians.

How many? The U.S. Bureau of Labor Statistics says, “Employment of mathematicians is expected to increase by 16 percent from 2010 to 2020…There will be competition for jobs because of the small number of openings in this occupation.”

Take math teachers out of the mix, and the number of mathematicians America needs is tiny. If one kid in each high school in the country became a professional mathematician, it would glut the market.

So, what’s now different in math education as a consequence of corporate pressures? Math requirements have been boosted for every kid. School days and years have been lengthened to expand math instruction time. Recess, art, music — even other academic subjects — have been dropped or scaled back to allow more time for math drill. Math courses have been moved down a grade level to make them tougher. Reading instruction has been refocused to emphasize “informational text” of the sort mathematicians might use. Constant testing monitors math performance, and failing a single high-stakes math test can keep even an honors student from getting a high school diploma.

Stupid. Running every kid in America through the math gauntlet to get a handful of mathematicians is like buying a bakery to get a loaf of bread. But even if thousands were needed, it makes no sense to force everybody to line up and run that gauntlet. Putting a kid with superior math ability and potential in a class with thirty-plus other kids will either hold her or him back or drag the thirty-plus forward at a rate beyond their ability to cope. How smart is that?

What the reformers have done in math they want to do across the board — push every kid through the same narrow standardizing hole in every subject. It can’t be done, and it shouldn’t be done, but it’s being tried on a monumental, nationwide scale.

And when it doesn’t work, instead of blaming THE SYSTEM, teachers and kids are punished.

Shaping THE SYSTEM, of course, is the belief that studying a mix of pre-selected, required subjects provides a comprehensive, well-rounded education. That’s an admirable aim, but it’s never even come close to being met. When, long ago, big guns in education policymaking sat down around a conference table to decide what courses students had to pass to get a high school diploma, they didn’t start from scratch and look at all possible options. They chose from an existing, much shorter list set by custom, reinforced by familiarity, unsupported by research or an articulated philosophy.

Over time, that list of school subjects has acquired an extremely powerful label. It’s called “the core curriculum,” and the assumption that it does indeed provide a comprehensive, well-rounded education is simply taken for granted. So firm is the place “the core” holds in the public mind, there wasn’t a peep from the mainstream media

when the National Governors Association and the Council of Chief State School Officers rammed through something they called "The Common Core State Standards Initiative."

Disregard the word "State" in that title. For all practical purposes, the core is now America's national curriculum. The governors and school officers who pushed the Initiative think that standardizing the curriculum provides "a consistent, clear understanding of what students are expected to learn…" Corporate interests also think it's a good thing, but for a different reason: It standardizes the education market, thereby significantly upping profit potential.

The secretive, long-running, organized, well-financed campaign to centralize, standardize, and privatize American education is on track. To follow the campaign, follow the money.

Standardized or not, there are at least two dozen reasons why faith in the core curriculum is misplaced.[1] Here are three:

(1) Humankind's hope for the future lies, as it always has, in the richness of human variability. We differ in experience, situation, aspirations, attitudes, abilities, interests, motivations, emotions, life chances, prospects, potential, and luck. To survive and prosper, these differences need to be exploited to the maximum. The core curriculum minimizes them.

(2) Knowledge is exploding at an ever-accelerating rate. Whole new fields of study unimagined even a few years ago are emerging. The explosion isn't just going to continue, it's going to accelerate. Thinking we know enough to lock ANY curriculum in place — much less one that's more than a hundred years old — is either naïve or malicious.

(3) The future is unknowable. Period. Even if it were possible to standardize and program kids, we don't know — NOBODY knows — what they'll need to know next week, much less for the rest of their lives. They may need technical skills no one now has, or the ability to survive on edible weeds and a quart of water a day. Neither the Common Core nor the tests that manufacturers are able to write can take adequate account of an unknown future.

What's an alternative to today's mandated, standardized curriculum? An elective curriculum.

By "elective," I don't mean offering kids a couple of options if they pass all their math, science, language arts and social studies courses, or are willing to stick around after hours. I mean that, starting no later than middle school, kids set their own schedules, going in whatever directions their interests, abilities, and respect for parental and teacher opinion lead.

[1] https://www.marionbrady.com/articles/2011-WashingtonPost11-1.pdf

Of course, that's not going to happen. Bureaucrats, pointing to statutes, would quickly shut down any school that gave kids real freedom of choice. Politicians would resurrect the accusation they once used to sell No Child Left Behind, that teachers were guilty of "the soft bigotry of low expectations." Policymakers would argue that workforce needs trump individual needs. Corporations making billions selling "solutions" to the educational problems they're helping create would threaten to cut off political campaign contributions. Many (maybe most) educators, comfortable in their niches, would defend those niches by pointing to personal successes.

And all will dismiss my proposal by arguing that kids don't know what's best for them.

There's some truth in that. Kids have needs they aren't able to articulate (a particular interest of mine). But given freedom to choose, their choices will be far wiser than those spilling out of the Trojan horse the American Legislative Exchange Council and its allies slipped through public education's gate — the Common Core State Standards Initiative.

That Initiative solves no significant problem. It is itself the problem. Its quick, unquestioning acceptance by most of the education establishment and the general public is yet another manifestation of the widening authoritarian streak in American character.

Boycott the tests, and hammer the clueless politicians who support them. Do that, and they'll suddenly discover an interest in talking to people who actually know something about educating.

When that dialog begins, you can do future generations and the world an enormous favor: Insist on a post-elementary-level curriculum that's at least 90% elective. Let human nature do its thing. **Ω**

Assumptions teach lesson about school reforms

Orlando Sentinel, 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.

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.

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

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**

A good teacher?

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted October 11, 2012:

A few weeks ago I flew into Buffalo, New York, rented a car, and drove down to northeastern Ohio for a high school class reunion — the 55th — for students I'd taught when they were 9th graders in 1952.

They told me stories about myself, some of which I wish they'd kept to themselves, but what they had to say got me thinking about the teacher I once was.

I have a lousy memory, but it's good enough to tell me that, notwithstanding assurances that I was their favorite teacher (what else could they say?), I hadn't really been a good one.

I certainly wasn't a good teacher in 1952. No first-year teacher is a good teacher.

I wasn't a good teacher in 1958 either. Some people thought I was; they had spoken sufficiently highly of me to prompt a superintendent from a distant, upscale school district to come and spend an entire day in my classes, then offer me a considerable raise if I'd come and teach in his district.

I did. But I can clearly recall leaning against the wall outside my room during a class change and saying to Bill Donelly, the teacher from the room next door, "There has to be more to it than this."

The "this" was what I was doing — following the standard practice of assigning textbook reading as homework, then, next day, telling kids my version of what the

textbook had covered. Pop quizzes and exams told me how much they remembered. (According to reunion attendees, not much.)

I still wasn't a good teacher in 1963, but some people thought I was. I'd again been recruited, this time to teach in the "demonstration" school on the campus of a big state university.

Maybe I'm a slow learner, but I didn't start to feel good about what I was doing until about 1970. What helped make that happen were a few, almost casual, words.

Once again, I'd been recruited, this time by a textbook publisher. They'd contracted with a husband and wife team to produce a series of textbooks, and the team had run out of steam about halfway through the project. The publisher hoped to salvage the series, thought I could do it, and offered to pick up my salary if I'd take a leave of absence and work on it.

I hedged. I wasn't sure I could deliver, so we agreed that, with my brother's help, I'd produce something. If they liked it, and an independent panel of their choosing liked it, then we'd talk about a contract.

Three months later we submitted our stuff. It was good enough. But someone on the outsider review panel wrote a comment that pushed me around a corner. Permanently.

Referring to a particular activity, he or she said the student was being asked merely to, "Guess what's on my mind."

I think the main reason I was recruited to ever-better positions was the degree to which I fit the "good teacher" stereotype. I looked and acted the part. I could hold a class's attention. I liked kids. I had useful, non-school, "real world" experience. The only things I'd really enjoyed when I was in high school were the extra-curricular activities, so the kids and I had in common the feeling that much of what we were doing was something to be endured.

I met most of the standard, "good teacher" criteria well enough, but I eventually concluded that when I played that role there wasn't much real learning going on. Whoever tossed off that short comment almost 20 years into my teaching career had put a finger on my problem: What was in my head wasn't important. What mattered was what was going on in kids' heads.

I changed. In fact, I changed so much that if I were still teaching in a high school of the sort most policymakers seem to think is good and an evaluator came in with a checklist to evaluate me, I'd probably soon be looking for other work.

I moved my desk to the back of the room and shoved it into a corner, with no room to get behind it. I traded student desks for easily moved tables and chairs. I stopped using textbooks. I told the principal my classes might be meeting elsewhere than in my room. I protested administrative insistence on lessons plans for the week ahead, arguing

that I couldn't know what to do on Thursday until I saw what had happened (or not happened) on Wednesday. I gave a one-question test at the beginning of the year, and asked the same question at the end of the year.

But the single biggest change: I shut up and sat down, which is where today's evaluator would be most likely to find me. I came to believe that my most successful classes were those in which I felt no need to talk at all. I gave tough assignments — tough not because they required a lot of work but because they required a lot of thought, no less from me than from the kids. And because I felt I needed to know about the quality of that thought, I put them in small conversational groups where they were comfortable "thinking out loud." I either just listened, or became just another group member. The really good days were those when the groups challenged each other's thinking, and I just sat and watched them have at it.

The work hung together and built toward an aim everyone clearly understood. In journal articles I wrote at the time, I often summed it up with some version of this:

"Each of us has acquired from our society a conceptual model of reality. The most important task of a general education is to help us understand that model, the models of those with whom we interact, and the range of alternative models from which we might choose."

That, I believed and believe, is true "basic education."

In the 1960s, in high contrast to today's top-down mandates, federal education policy encouraged educators to think and dream. And they did, coming up with some wonderful ideas that quickly found their way into classrooms.

And bombed. Looking back, the reason was clear — failure to heed the biblical warning about putting new wine into old wineskins. For example, the university at which I was teaching at the time developed kits of hands-on materials that helped kids figure out for themselves certain principles of physics. They peddled them to commercial manufacturers of educational materials, who packaged them beautifully, wrote glowing (and true) sales pitches about what kids could learn from playing with the equipment, and sold them.

Most of the materials ended up on shelves in schools across the country. Some of them are probably still there under layers of dust, artifacts of a genuine revolution that never happened.

Because, when it comes to change, you can't do just one thing. Switching from passive to active learning — which is what that 1960s effort was all about — had, at the very least, implications for classroom furniture, textbook use, length of class period, student interaction, teacher understanding, learner-teacher relationships, methods of evaluation, administrator attitudes, parental and public expectations, bureaucratic forms and procedures.

Those didn't change, so the new teaching materials, not being "system friendly," were rejected. Worse, when system inertia caused the new materials to fail, there was a "back to basics" swing of the pendulum, and the seeds of today's simplistic reading and math grind were sown.

Some random questions prompted by reminiscing: Why won't the teacher effectiveness fad meet the same fate—change nothing because it tries to change just one thing? Might that not explain the supposed failure of the Gates Foundation "small schools" initiative? Is the present fixation on teacher characteristics reinforcing teacher-centered education rather than student-centered education? Are "effective" teacher qualities the same from kindergarten through 12th grade? Are the walls being erected by present reform efforts so high that real improvement is even farther out of reach?

And what explains the fascination with and faith in data and quantification that's driving education "reform" in America, the United Kingdom, Australia, and New Zealand? The Gates Foundation is spending $45 million on a project titled Measures of Effective Teaching (MET). MEASURES of Effective Teaching! Is there something in our shared cultural heritage that causes us to think that everything can be measured and a useful number attached to it?

The new big thing in reform circles is that every education-related decision must be data driven. Why do we resist the fact that, more often than not, the inherent complexity of quality makes it impossible to quantify it? Is resistance to that fact a crippling cultural trait? **Ω**

Note: *This op-ed piece was originally given a title by Valerie Strauss: "How long it took one teacher to become great." The word "great" does not appear in the article.*

The right way to teach history

Washington Post, "The Answer Sheet" blog by Valerie Strauss; posted September 25, 2013:

Mr. Martinez, middle school American history teacher, slips his roll book into a desk drawer and looks up at his class.

The students eye him quietly, for they've learned that he frequently does or says something surprising. If they aren't attentive, they might miss it.

The attentiveness isn't lost on Martinez. After a well-timed pause, he touches a key on his computer, and projected on the screen in the front of the room is a huge image of a yellowed, authentic poster announcing job openings for Pony Express riders.

"WANTED," the poster says, "YOUNG, SKINNY, WIRY FELLOWS not over eighteen. Must be expert riders, willing to risk death daily. Orphans preferred. Wages $25 per week."

Martinez watches his students' eyes sweep down the poster. Then, pausing just a moment, he asks, "Any takers?"

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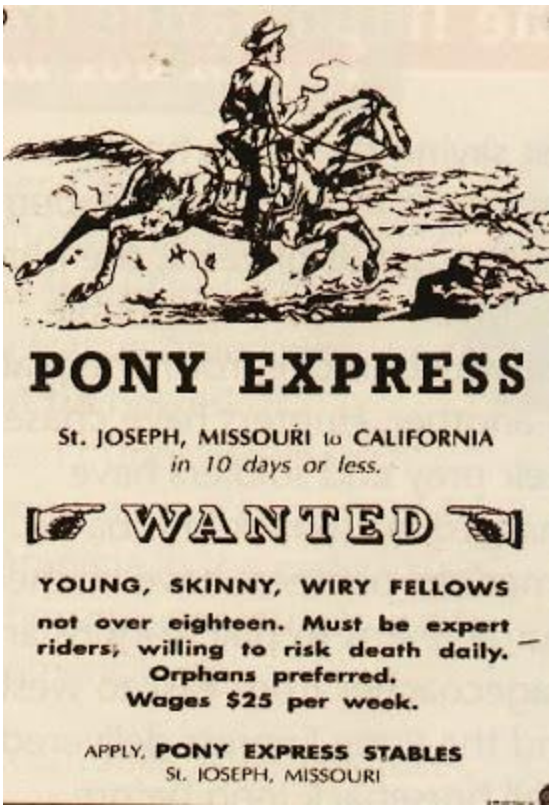

There are good reasons for studying American history. Martinez' style suggests he favors the benefits to be had from what the publishers of history textbooks sometimes advertise as "making the past come alive" — history as literature, history that engages the emotions, history in the form of an exciting, perhaps inspiring story.

That use of history fills an important need. In order for a society to function, its members must feel connected — have a sense of "us-ness." Without it, individual interests overwhelm collective interests. Taxes are resisted. Roads, bridges, parks, schools, libraries, and so on, don't get built, or, if built, aren't maintained. Without that sense of relatedness, social institutions that provide protection, insure justice, maintain the environment, and so on, aren't created, or, if created, aren't sufficiently supported.

It seems fair to say that — except when America is under attack — our feelings of "us-ness," of "one nation, indivisible," aren't particularly strong. Congressional actions, for example, frequently illustrate a level of national divisiveness sufficient to paralyze governing, or even cooperate sufficiently to explore the benefits of various health insurance programs.

Stories of a shared past create and reinforce an essential sense of community and strengthen supportive values and beliefs. Remembered heroes tell the young what traits of character are admired. Remembered difficulties, hardships, and crises tell citizens about potential problems and dangers that can't be adequately dealt with except by collective action.

Sadly, even before the current education "reforms" shoved the study of history aside, the subject seemed to maintain its place in the curriculum more from inertia than a sense of its importance. Student surveys almost always put it at the top of the list of boring, irrelevant subjects, and most students would have a hard time putting together a convincing argument in its defense. History texts — in order to get past textbook selection committees — have to be written in a bloodless, impersonal style or are

considered too subjective to be acceptable. Few parents know much history, display an interest in it, or communicate to their kids a sense of its importance. Ideologues gut textbooks by demanding that they be free of criticism of American policies and actions.

If contributing to societal survival is a legitimate aim of education, what present education policy is doing to the study of history is unacceptable. The main generator of really hard-to-solve social problems is social change. The past offers no ready-made formulas or strategies for solving the problems that change creates, but it's the only school subject that deals with societies holistically, the only school subject that subsumes all other school subjects, the only school subject that offers a perspective broad enough to make adequate sense of who we are as a nation, and the roles we play on the world stage.

If study of America's past is to get the attention it deserves, treating it as a story to be told is probably best left to documentaries and other products of filmmakers and television producers. What history teachers can do that media specialists can't do — or can't do well— is challenge kids to a sustained effort to use their brains for something other than trying to remember what they think is likely to be on a test. Learners need to identify and explore patterns and regularities in our collective behavior, need to question unexamined assumptions about who we are, need to trace the trends of the era, and so on. Stories can move us, but when we're trying to make more sense of what's happening, why, and what might happen next, a more analytical, scientific approach to study of the past is necessary.

Consider: A look at almost any newspaper's front page is likely to provide evidence of the need for a better understanding of the process of polarization. Why do small differences that should lead to productive dialogue between friends, between husbands and wives, between neighbors, between management and labor, between political parties, between nations and among groups of nations — why do small differences so frequently spiral so far out of control that productive dialogue is impossible?

America's past offers ample resources for studying the process of polarization.

Consider: Mainstream media often tell everyone in the country about the kidnapping or murder of a photogenic female, provide day-by-day coverage of a celebrity's trial for some alleged minor offense, and trace in detail the sex life of a politician belonging to the political party not favored by the news outlet. Meanwhile, invisible under our feet and largely ignored, the water table essential to our way of life drops inch by precious inch to fatten the bottom line of a bottled-water producer or a golf course owner.

Only by getting our priorities in order and studying change over time — as history does — do matters such as these get the attention they deserve.

Consider: American history has important things to say about the consequences of various patterns of wealth distribution, about unintended negative consequences of well-meant legislation, about the systemic effects of changes in the percentage of the population in various age groups, about problems triggered by technological change, about the relationship between economic diversity and economic stability, about reactions to thwarted individual autonomy, about decision-making concentrated in too-few hands, about the limitations of market forces, about the push and pull of un-examined cultural assumptions.

The past contains no easy answers, no ready-made conclusions, no precise parallels to today's situations, but it's ridiculous to suppose that America can function as it ought if its citizens are ignorant of the dynamics of change and unaware of probable future problems created by forgotten missteps.

To be valued as it ought to be valued, American history instruction needs to move away from "the story" toward the study of important changes that have affected — and will continue to affect — the way of life we seek. That's a significant shift. However, this won't solve the other problem with history as it's usually taught: its failure to engage learners in any effective way.

The core of the problem is *the textbook* — a huge, backpack-stressing compendium of pre-digested, secondhand information that students are expected to remember, at least long enough to pass a test. History textbooks are loaded with conclusions, leaving learners little to do but try to store them in memory, a task at odds with kids' basic natures. Too many history classes resemble the famous scene in the movie "Ferris Bueller's Day Off" with Ben Stein lecturing on economic history to zoned-out teens.

Instead of making the past come alive, kids need to come alive. Moving to active learning using un-interpreted primary sources, and requiring real investigation and deep analytical thought is a key to developing that engagement. Focusing on historical principles that kids can use "right here, right now," is another.

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Note: For examples of the kind of instructional materials for history that I think would do the job that needs doing, I invite readers to take a look at: http://www.marionbrady.com/AHH.asp [*Investigating American History*].

In the spirit of open source, the materials are free, a feature your local school system administrators might find both unusual and attractive. **Ω**

Note: Since this Op-Ed piece was written, we've added a world history course, [*Investigating World History*] also available free (as with all our materials) to educators for use with their own learners. This course also features active and project-based learning. There's very little narrative—learners analyze primary source data to identify systemic relationships and principles of historical change.

An any-century curriculum

Note: A somewhat "calmer" version of the following piece, titled “A big unexplored idea in school reform,” is at: Washington Post, “The Answer Sheet” blog by Valerie Strauss, posted June 11, 2013:

The big new thing in education reform is the *Common Core State Standards*—lists of what kids are expected to know and be able to do in math, science, language arts, and social studies.

Not everyone is a fan. Gene Glass**,** former president of the American Educational Research Association, calls the *Standards* “idiots’ solution to a misunderstood problem. That problem: an archaic curriculum that will prepare no child for life in 2040 and beyond.”

I’m with Dr. Glass. I oppose the *Standards* because they reinforce rather than rethink a curriculum that can’t do the job.

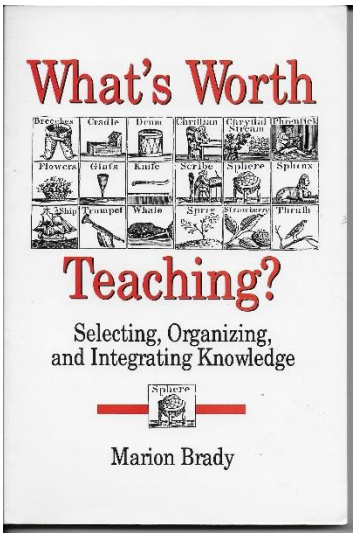
Evidence of the traditional general education curriculum’s inadequacy is overwhelming. As every adult surely knows from firsthand experience, it dumps so much raw, disorganized information on learners that most of it is quickly forgotten. It neglects important new fields of knowledge. It has no agreed-upon aim. It tries to dumb kids down to performance levels simple enough to be tested by machines. It chops up information, ignoring the seamless way the brain learns. It doesn’t engage kids’ emotions. It’s time-consuming and unnecessarily expensive.

That barely begins a list of serious problems with the 19th Century curriculum being locked in permanent place by the *Standards*. Worse, the high-handed, sneaky, fear-based strategy being used to force those *Standards* on America’s teachers and kids make it all but impossible to explore alternative curricula. Resisting the Common Core Standards juggernaut can end one’s career in education.

Full disclosure: I have a dog in this fight. I’ve written books, chapters for others’ books, dozens of journal articles, myriad op-eds, and years of nationally distributed newspaper columns, all calling attention to a simple, no-cost way to salvage the traditional curriculum. But up against bureaucracy and institutional inertia, up against lobbyists for test manufacturers and education publishers, up against the millions being spent by the Gates, Walton, and Broad Foundations to reinforce the educational status quo, up against the naiveté and hubris of the U.S. Secretary of Education and policymakers for both political parties, up against wishy-washy teacher unions, my dog can’t get out of the kennel. School administrators are so paralyzed by fear I can’t even get pilot programs in place to test the idea about which I’ve written hundreds of thousands of words.

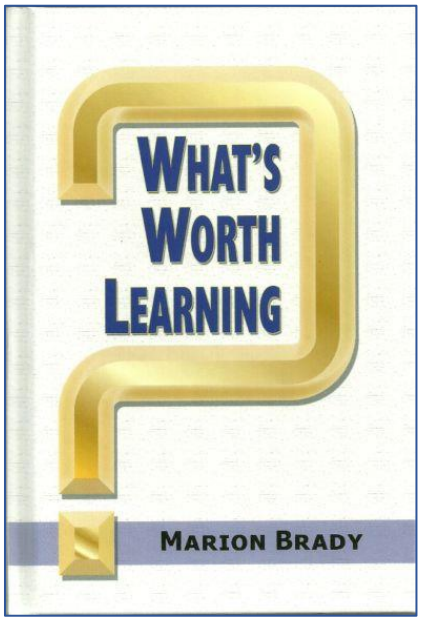
In a review of my first book [*What's Worth Teaching?*] on the subject (State University of New York Press, 1989), Dr. Philip L. Smith, editor of SUNY Press's *Philosophy of Education* series, wrote:

[This is] a well thought out, beautifully presented defense of humanistic general education… I see the audience going well beyond professors of education or students of curriculum. I think it should be read by primary and secondary school teachers, by administrators, school-board members, and the general public. Many of these people want more from their schools than specialized academic preparation or narrow vocational training. Brady gives them something more. She [sic][1] provides a serious, concrete proposal for civic education and the development of the human spirit. To my knowledge there is nothing now available in print that is even of mediocre quality to compete with it… Serious-minded educators who begin to read this book are very likely to finish it, and to be influenced by it for the better. Those who are not serious-minded—if there is any hope for them at all—might start to be serious-minded if they read it.



Who decides what's taught? Generally speaking, nobody. What's taught is taught because it's what has long been taught. Period.

That's the main reason meaningful change in the curriculum is all but impossible. Reformers, either not understanding that sense can't be made of a dynamic world using a static curriculum, or else understanding but deliberately pursuing a dark objective, cripple young minds with ill-conceived policies.



I'm angry enough about the beating America's teachers and kids are taking from those policies, worried enough about America's future, and frustrated enough with the educational naiveté and hubris of those now controlling American education to do something I wouldn't have done when I was younger and poorer. Hoping to trigger a long-overdue dialogue about what the young are being taught (and not taught), and why, I've bought back from my publisher the rights to my most recent book, *What's Worth Learning?,* and put it online as an e-book, free for the downloading.

[1]More than once Marion Brady has been the victim of chauvinism because of his name. It's been apparent that some male academics (who would almost certainly insist they weren't biased) have dismissed his written views because they've assumed that he is a woman. (HLB)

It's a quick read:

Part One: What's wrong with the "core" curriculum—12 pages.

Part Two: A "fix"—45 pages.

Part Three: Meshing the fix and the core—15 pages.

Part Four: Notes on teaching—19 pages.

Recognizing the enormous difficulty of translating a genuinely new idea into classroom instruction, an appendix to *What's Worth Learning?* titled *Introduction to Systems,*[1] offers an illustrative course of study suitable for adolescents and older students.

I'm convinced that classroom teachers—not test manufacturers, not publishers of textbooks and other educational materials, not leaders of business and industry, not the U.S. Department of Education, not federal, state, or municipal politicians—are best positioned to develop and maintain the general education curriculum. No one else is better able to adapt it to learner abilities, take account of local conditions and resources, capitalize on individual differences, and evaluate learner performance.

But teachers need tools they don't now have—a clear, defensible aim, a shared vocabulary, a sound philosophy, a comprehensive conceptual framework, a working teaching model, and a way to communicate with each other about the work they share. For this reason, in the spirit of "open source," I've also put the course of study online.

Links to both the book and course of study are below.

But first: For about the last twenty-five years, the main obstacles to acceptance of genuinely fresh thinking in education have been erected by amateurs—business leaders, lawyers, economists, celebrities, state and federal legislators, mayors and other politicians—who know little about educating, don't know how little they know, and refuse to talk to those who've spent their working lives eye-to-eye with students, all the while thinking hard about what they were doing.

But professional educators erect their own obstacles to fresh thinking. From failed efforts to get my peers to give serious thought to a simple but different idea, I've identified at least some of the reasons for their resistance.

First, my idea is dismissed because it's threatening. It calls into question the undergirding premise that shapes school organization, teacher training, textbook design, testing, and much else. For many, maybe most educators, the idea even threatens their identity. That's not much of an incentive to read or think about the idea.

[1] Formerly *Connections: Investigating Reality,* revised and title changed 2017. https://www.marionbrady.com/Systems-Based-Learning-Courses.asp

Second, the idea is dismissed because it sounds too simple to take seriously. A few sentences before that long quote above from Philip Smith, he wrote, "Let me begin by saying that I liked this manuscript very much. Before I studied it I did not expect that I would. It appeared to be rather pedestrian, even simple-minded. Nothing could be further from the truth."

"Before he studied it," Smith dismissed the idea. If he hadn't been asked to read the book manuscript, he wouldn't have done so. It's sad but true that most teachers don't read much, and those who do aren't likely to want to read about an idea that initially strikes them as too simple to take seriously.

Third, the idea doesn't "compute" for most people, especially educators. Accepting it requires imagination and a genuine paradigm shift—replacing a taken-for-granted idea about the nature of knowledge with an idea to which no thought has been given. Those who've studied paradigm shifts know that mere words don't trigger them.

Fourth, the idea is ignored by those whose assistance it most needs—creative, original thinkers. Always unhappy with the status quo, they devise alternatives. But immersed in their creations, they often suffer from what's sometimes called the NIH (Not Invented Here) Syndrome. They've little or no interest in someone else's idea.

Here, simply stated, is the idea I've been pushing for nearly a half-century, the idea that suffers from that worst of all possible fates: It's neither accepted nor rejected. It's ignored:

The brain copes poorly with disorganized information, and school subjects are poor organizers.

The brain uses a better system, helping kids lift their natural organizer into consciousness and make intentional use of it makes them a whole lot smarter.

Download the book. (No strings, no cost, no signup, no ads): *What's Worth Learning?*

Download the illustrative course of study. (Same deal): *Introduction to Systems*. **Ω**

One way to help solve America's major curriculum problem

Washington Post, "The Answer Sheet" blog by Valerie Strauss, posted February 24, 2014:

In my January 31st post[1] on this blog, I joined Rene Descartes, Buckminster Fuller, Kurt Vonnegut, Jr., Alfred North Whitehead, Felix Frankfurter, Thomas Merton, Neil Postman, John Holt, Harlan Cleveland, Ernest Boyer, John Goodlad, and dozens of others saying that the Common Core Standards are reinforcing an idea that's doing great damage to education.

Of course, most of the scholars I named, being dead, didn't actually mention the Common Core, but they left no doubt about how they'd have reacted to education policies that ignore the fundamental nature of the world that schooling is supposed to help the young understand.

Massachusetts Institute of Technology Professor Peter M. Senge summarizes the problem on page three of his best-selling book, *The Fifth Discipline*:

"From a very early age, we are taught to break apart problems, to fragment the world. This apparently makes complex tasks and subjects more manageable, but we pay a hidden, enormous price. We can no longer see the consequences of our actions; we lose our intrinsic sense of connection to a larger whole."

If Senge and the others are right that adequate sense can't be made of the world by slicing it into little pieces and studying the pieces without regard for how they fit together and interact, it follows that modern education worldwide isn't meeting its major responsibility.

What this means (at least to me) is something that almost nobody who has a stake in education wants to hear. Current controversial issues—standards, accountability, benchmarks, teacher quality, evaluation, length of school day, the nature of rigor, school grading, test design and uses, value-added measurement, Race to the Top, international comparisons, etc.—are sideshows. They may have slight effects one way or another on performance, but by diverting attention from the main problem, they're doing more harm than good.

Solving the problem of the traditional curriculum's too-narrow scope would change those issues so much that every one of them would have to be rethought.

That's probably not going to happen, so I'm not optimistic about the future of American education. We're a society that's never been particularly interested in the life of the mind. Our sense of community—"us-ness"—has withered, and with it the ability to

[1] See page 83.

solve shared problems. We're not embarrassed by a level of poverty that makes it almost impossible to adequately educate a quarter of the young. Dominated by corporate interests focused on short-term profit, we refuse to acknowledge the near-certainty of a future that will challenge humankind's ability to survive. We expect good work from teachers locked at the bottom of a bureaucracy that gives them no voice in and no control over decisions central to their effectiveness.

And we think the rich and powerful know more about educating than educators. Most people, for example, still don't know that manipulating test scores to flunk more and more kids is just one of many sneaky strategies engineered to convince the citizenry that public schools should be handed over to McCharter chains (with taxpayers continuing to pick up the tab, of course).

My expectations are low, but if, as I believe, a minor tweak can go far toward solving our major curriculum problem, if it can significantly improve what goes on in learners' heads, if it costs nothing to adopt, if it requires no change in staffing, facilities, or equipment, and if it necessitates no special knowledge or training, I argue that the tweak deserves a trial.

Unfortunately, testing it is against the law, law supported by both political parties, the National Governors Association, the Council of Chief State School Officers, the U.S. Chamber of Commerce, the American Legislative Exchange Council, the Center for American Progress, Exxon-Mobil, the Waltons, the mainstream media, Arne Duncan, Bill Gates, Mike Bloomberg, Jeb Bush, and many, many others. In educational matters, they've put their faith in market forces and their money on test-and-punish reform policies, and gotten Congress to bless that faith with legislation. Educators who don't fall in line are likely to find themselves looking for other lines of work.

The tweak I'm advocating is below. It's addressed to educators, but it's in plain English because non-educators—particularly those who vote—are the only effective counter-force to those now setting education policy. The general public needs to understand the tweak and decide if it warrants pressuring politicians to allow educators to check it out.

One: Accept that something is seriously wrong with traditional schooling. Learning is natural, pleasurable, and satisfying, but what most schools do is so at odds with those emotions it requires all sorts of social and legal pressures to keep them operating.

Two: Accept that myriad internationally known and respected scholars may be right. Think of school subjects as pieces of a jigsaw puzzle that make a lot more sense to kids when they can see the whole that a simple system for connecting the pieces makes clear.

Three: Add a class at the middle or high school level that uses the core subjects to do what everybody is already doing, and needs to do better—make sense of immediate experience. Personal interpretations of what's happening "right here, right now,"

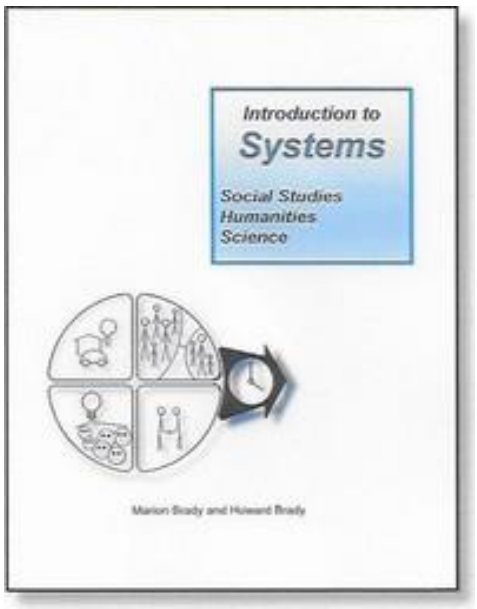
determine what people do next, and what people do next determines the courses of lives and shapes human history. Here are several ways to put such a class in place without lengthening the school day or year or going outside the boundaries of familiar school subjects.

Four: Find a teacher or teachers on staff willing to meet with the class, not to "teach" it, but to join it as "coordinator and co-learner."

Five: Accept that the unfamiliar nature of the classwork—making more sense of the everyday, of the utterly familiar, of life as it's being lived—differs from traditional schooling enough to require a little handholding.

Six: Download (it's free) *Introduction to Systems*,[1] and see it as an example of a sequence of thought-provoking puzzles or problems that help learners organize knowledge and make sense of it in a simpler, more natural way than school subjects allow.

Seven: Consider the advantages of a general education curriculum that, unlike commercially produced materials, continuously evolves and improves as teachers and kids, in electronic touch with each other,[2] talk about how to make that curriculum better.



That's it. Those who familiarize themselves with *Introduction to Systems* or the general idea it promotes[3] will, I think, discover that it not only gives learners a broader and deeper general education than the core curriculum, but that it does so in far less time. When that happens—when educators have more time to think about ways to give depth and dimension to books and lectures[4]—the potential for a genuine revolution in the quality of schooling presents itself.

For example: 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 in their favorite band. A few can run a less-than-five-minute mile. But most can't, and couldn't even if it earned them their choice of any pair of sneakers in the sporting goods store. There are kids who can paint an image well enough to peddle it, but most can't produce anything beyond refrigerator door postings.

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[1] https://www.marionbrady.com/IntroductiontoSystems.asp (Originally *Connections: Investigating Reality*)

[2] https://www.marionbrady.com/IntroductiontoSystems.asp (See discussion links)

[3] https://www.marionbrady.com/articles/journal/2004-ThinkingBigKappanDec.pdf

[4] https://www.marionbrady.com/documents/Enhancing--Mini-Courses.pdf

What's true for singing, running, and painting is true for solving algebraic equations, writing stories, thinking like a chemist, and all other fields of study. It's only when kids show up for school that common sense is suspended and, in the name of a vague, not-thought-through idea called "a well-rounded education," every kid, no matter abilities, interests, demonstrated skills, life situation, or anything else, is herded through the standard academic hoops.

Wouldn't it make far more sense if schools got their general education expectations out of the way in an hour or so, then identified and grouped the math whizzes, the mechanically inclined, the artists, the writers, those involved in projects, and so on, assigned teachers to the groups, and let them go as far as they can go as fast as they can go?

Education is long overdue for what business types sometimes call "disruptive innovation," but the bureaucratic depth and complexity of systems of public education, and simplistic policies set by amateurs in state legislatures and Congress, block real innovation. My suggested status quo-accommodating tweak is an easy sell to a great many experienced educators, but it isn't being tried because present conceptions of "reform" are so narrow and rigid, and failure to fall in line is so certain to trigger a punitive response.

Here's this blog's takeaway: *It's impossible to understand a dynamic, systemically integrated world using a static, fragmented curriculum*.

I challenge education policymakers and pundits who disagree with that statement to either make their case, publicly, in the same medium in which they're reading these words, or get behind a campaign to allow public school teachers and administrators to experiment with innovations that can't be evaluated by machine-scored, multiple choice, standardized, subject-matter tests. **Ω**

Links (no cost, no advertising, no strings attached[1]):

Marion's website: https://www.marionbrady.com/

What's Worth Learning? https://www.marionbrady.com/Books.asp

Course: *Introduction to Systems:* https://www.marionbrady.com/IntroductiontoSystems.asp

Course: *Investigating American History:* https://www.marionbrady.com/AHH.asp

Course: *Investigating World History:* https://www.marionbrady.com/WorldHistory.asp

Course: *Investigating World Cultures:* https://www.marionbrady.com/InvestigatingWorldCultures.asp

[1] For educators using these materials with their own learners.

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