

# **Back to the *Real* Basics**

## **Education reform and the traditional curriculum**

**The human brain has a sophisticated system for organizing and integrating knowledge. Making deliberate use of that system would significantly improve student intellectual performance.**

**This contention, and its implications, have been extensively explored in my books, journal articles, and newspaper columns. For links to those sources, and for reaction from across America and abroad, go to:**

**<http://home.cfl.rr.com/marion/mbrady.html>**

Marion Brady

## **BACK TO THE REAL BASICS**

### **Education Reform and the Curriculum**

“Standards!” “Accountability!” “Raise the bar!” “Rigor!” “No excuses!”

The slogans and catchwords of would-be school reformers are exploited by politicians, broadcast by radio talk-show hosts, plastered on car bumpers, underlined by newspaper editorialists, elaborated in the popular press, and taken seriously by much of the general public.

They’re also favorite themes of those leaders of business and industry who, in the 1980s, began to elbow professional educators aside and work through Congress to take over education reform. There’s little or nothing wrong with American education, these leaders are certain, which can’t be made right by tightening institutional screws.

Notwithstanding the arguments of experienced professional educators, the conventional wisdom insists that teachers and students deserve most of the blame for poor school performance. The conventional wisdom also has it that market forces are the key to improvement. Let Adam Smith’s “invisible hand” work the miracles in education it sometimes works in the marketplace. Stiffen competition — student against student, teacher against teacher, school against school, system against system, state against state, nation against nation. Test. Rank. Reward. Push. Punish. Publicize. Penalize.

And when this strategy fails, privatize.

All of which is ironic, for in the world of business, the most respected opinion leaders long ago concluded that poor performance nearly always indicates not a “*people* problem” but a *system* problem.

And a system problem there is. Unless that problem is recognized, unless it’s accepted that market forces don’t address it, unless it’s realized that tightening the screws on the status quo is reactionary and counterproductive, America’s schools — public, private, parochial, charter, virtual, whatever — won’t just fail to improve. They’ll eventually self-destruct.

#### **The major source of problems**

All complex social institutions have problems, the most serious of which usually stem from the process of “institutionalization.” Newly created problem-solving organizations tend to adopt highly effective problem-solving procedures to which, understandably, they become devoted. When, as is always the case, social change alters the nature of the problems the organization was created to address, solving those problems may become less important than protecting the familiar, once-effective procedures.

This process is well along in education. Every society’s first priority — its basic reason for educating — is survival. Survival requires making sense of experience.

The attempt to make more sense of experience gave rise to the academic disciplines and the school subjects based on those disciplines. Now, however, protecting and polishing those subjects has become more important than solving the problems which led to their creation. Yes, specialized studies are essential. (Indeed, many *more* should be offered.) But they need to be continuously re-keyed to real-world problems, and that isn't happening. We teach the young to solve quadratic equations, diagram sentences, name the state capitals, and much else, not in the pursuit of life, liberty, happiness or sense-making, but because it's what we did last year, and the year before that, and the year before that.

Until we re-think and rework the curriculum devised by the Committee of Ten in 1893, education "reform" — standards and accountability, raising the bar, imposing rigor, rewarding and punishing — will produce little but political noise, student hoop-jumping, educator burnout, ever-escalating costs, and increasing societal inability to meet the demands of an unknown future.

The challenge isn't, as the conventional wisdom assumes, to master the content of a random assortment of school subjects, but to produce citizens with a substantial understanding of themselves and the societies which shaped them, able to anticipate the probable and possible long-term consequences of their actions, aware of the trends of the era and the implications of those trends, equipped to weigh costs against benefits and connect effects with causes, sensitive to moral and ethical issues, respectful of individual and societal differences and mindful of the myriad potential benefits of those differences, proficient in specific fields but not at the cost of an understanding of the whole of which those fields are parts, and aware and supportive of the processes which create and expand these qualities and characteristics.

### **SPECIFIC CURRICULAR PROBLEMS**

A curriculum is the reason there are schools. Everything else — staffs, schedules, buildings, budgets, vision statements — is just support system.

It might be supposed, then, that if discipline is poor, if students are dropping out, if good teachers are leaving the profession, if bond levies are being defeated, if test scores over the long term are flat — the curriculum would get a great deal of attention as a possible major *cause* of those symptoms of poor performance.

It doesn't. In fact, a survey of current reform proposals makes it clear that the curriculum is getting no serious attention at all. A bit of folk wisdom may explain why. "A fish," according to an old saying, "would be the last to discover water." Today's education reformers, immersed in the traditional curriculum for their entire school experience, literally can't imagine alternatives to it.

If schools are to be saved from terminal inertia and inevitable failure, the myriad problems with the curriculum must be admitted and directly addressed. Here are some of those problems:

1. An acceptable curriculum will be guided by a clear, overarching aim. No such aim is presently in place.
2. Reality is systemically integrated, and the brain perceives it seamlessly. The curriculum — which is supposed to model reality — ignores its holistic nature.
3. Knowledge is exploding, but no criteria establish what new knowledge is important, or what old knowledge should be dropped from the curriculum to make room for the new.

4. Recent years have brought new and useful insights into how the brain processes information, but the discoveries are largely ignored.
5. Research confirms a relationship between intellectual development and physical activity, art, music, varied experience and so on, but the curriculum treats these as “frills” rather than essential.
6. The present curriculum is shaped primarily by expert opinion in a handful of disciplines. Intellectually, there’s little students can do with this secondhand information except try to remember it. Thought processes other than recall — classifying, hypothesizing, generalizing, synthesizing, valuing, and so on — are largely neglected.
7. The curriculum is inefficient. Lip service is given to student differences, but general education requirements are so time-consuming there’s little opportunity to develop individual abilities and pursue individual interests.
8. The traditional curriculum casts students in passive roles, as absorbers of existing knowledge rather than as active creators of new knowledge. The future, unknowable, demands a curriculum that teaches how to *construct* knowledge.
9. No convincing case is being made for the relevance of the content of the traditional curriculum. “You’ll need to know this next year,” “It’s in the book,” and “This will be on the test,” aren’t arguments likely to convince students that school work merits their time, effort, and emotional commitment. Problems with boredom, disengagement, classroom discipline, attendance, dropouts, walkouts and so on, are inevitable consequences of a dysfunctional curriculum.
10. All humans have and use a system for organizing knowledge shaped by their society. To make sense, to be remembered, and to be useful, everything taught must fit into this system. If it doesn’t, it goes into short-term memory and soon disappears. This knowledge-organizing framework isn’t “surfaced” so students can examine, refine, and make deliberate use of it.
11. The traditional curriculum neglects vast areas of knowledge of critical importance in personal decision making and in drafting wise public policy.
12. Change is a fact of life and is everywhere apparent in the natural and human-made worlds. The traditional curriculum has no built-in mechanisms forcing it to adapt to current reality, anticipate probable and possible futures, and shape preferable ones.
13. The desire to learn is one of the deepest of all human drives. However, instead of cultivating and encouraging this intrinsic love of learning, present curriculum-based instruction relies primarily on *extrinsic* motivators — the threat of failure, fear of censure, humiliation, or the law, or the promise of praise, gold stars, grades, certificates, diplomas, or future success.
14. Complex technology, pressure from business and industry, and faith in the ability of science to solve all problems have elevated in the public mind the importance of specialized studies, particularly in mathematics and science. As a consequence, students considered “best” are channeled into narrow fields without adequate exposure to other dimensions of life, particularly the complex moral and ethical issues raised by developments in technical fields and their potentially devastating impact on society.

15. Curricular emphasis on merely distributing information (“covering the material”) has given rise to simplistic, superficial, destructive notions — instruction that confuses “harder” with “better,” standards that merely standardize, and machine-scored tests incapable of evaluating the quality of complex thought processes.

16. The traditional curriculum fails to lead students in a systematic way through ever-increasing levels of intellectual sophistication. To the extent there’s concern for coordinating what’s taught, it’s limited to efforts *within* fields of study without concern for the whole.

17. The transition from the static, insular nature of school to the dynamic, exposed nature of adult life is so abrupt many students can’t cope. The curriculum should so thoroughly integrate education and life the transition is smooth.

18. How little most adults can recall of what they once “learned” in school testifies to the inadequacy of the theory that “if you throw enough mud on the wall, some of it is bound to stick.” The brain’s ability to cope with large amounts of unorganized information dispensed at fire-hose velocity is extremely limited, a fact routinely disregarded by the traditional curriculum.

19. The young learn at a phenomenal rate. Long before they start to school, most can acquire two or more languages, internalize the complex rules governing myriad social situations, master many technological devices, learn the rules of any number of games, and much, much else. All this without being able to read or compute. In school, however, the abilities which make such learning possible are smothered by the assumption that learning comes primarily from interpreting and manipulating symbols — literacy and numeracy.

20. Human variability makes civilization possible. The thrust of present reform efforts — having all students achieve “minimum standards” rather than develop their individual potential — will, if continued, destroy the institution and undermine the society.

21. Finally, learning isn’t primarily a matter of transferring information from those who know to those who don’t know, but of discovering relationships between parts of reality not previously thought to be related. Because the present curriculum erects awkward, arbitrary, artificial walls between the study of various aspects of reality, fragmenting it into disciplines, subjects, courses, themes, and so on, the basic process by means of which individual and collective knowledge expands — relationship exploration — is blocked. Only if students have in place and know how to use a framework of ideas that includes and logically relates *everything* they know, is it possible for them to generate a full range of hypotheses about possible relationships. Because humankind’s very survival hinges on the ability to construct knowledge, it’s impossible to exaggerate the societal costs of a curriculum which fails to provide students with the basic intellectual tool by means of which knowledge is created.

***Every one of these twenty-one problems deserves major, immediate attention. None is getting it.***

## A SOLUTION

Socrates demonstrated the major way insight and understanding grow — causing learners to question and evaluate their images of and assumptions about reality, suggesting alternative assumptions and images for their consideration, and helping them reconcile and accept the differences.

This is at odds with the conventional wisdom, which has it that that teaching and learning simply move information from those who know to those who don't know. But the young don't come to matters of importance with empty heads. They have explanations and opinions about how the world works, are attached to those explanations and opinions, and resist frontal assaults on them. That resistance is in part emotional, and is best skirted by raising non-threatening questions which cause learners themselves to reason their way to alternatives. In that effort, there's a powerful conceptual tool students can be helped to develop, a tool well-formed long before formal schooling begins, but so familiar and so mundane-seeming that, like gravity before 1666, it escapes notice.

1. Successful human functioning requires (a) ready access to the whole of one's knowledge via memory, (b) skill in identifying what one knows that's applicable to the situation at hand, (c) an understanding of the systemic relationships *between* specific things one knows, and (d) the ability to predict or anticipate the consequences of the interactions of those things.

2. Since humankind has survived for millennia with only a relatively few individuals having been exposed to today's standardized, discipline-based, "factory model" approach to educating, it follows that, in turning information into knowledge and knowledge into wisdom, the brain has an *alternative* to school subjects as organizers of knowledge.

3. It does. In everyday life, sense is made of specific past, present, anticipated and imagined experience by means of "stories" in the form of gossip, news, research reports, histories, folk tales, battle plans, policy proposals, drama, novels, casual conversation, and so on.

4. These "stories" elaborate and integrate five kinds of information. That which is being thought about is pulled from the stream of consciousness and (a) given a setting, (b) assigned time dimensions, (c) actors or participants are identified, (d) action is described, and (e) the states of mind (beliefs, values, assumptions) "explaining" the action are articulated or assumed. Woven together systemically, these are the building blocks of meaning. Although the five are vastly (and differently) elaborated by human societies, their use appears to be universal.

5. Academia's disciplines, subjects, and courses elaborate and organize various *parts* of these five kinds of information, but they neglect much of great importance, and their differing vocabularies, conceptual structures, levels of abstraction, and so on make it difficult or impossible for students to relate them systemically. The brain's "natural" approach to processing information, rooted in everyday language, suffers from neither of these two problems.

6. The five kinds of information, with their supporting conceptual substructures drawn from ordinary speech are a society's "model of reality," its "master sense-making system." Individuals adopt and adapt the model as a guide to

everyday behavior. On a larger scale, societies “acting out” their models of reality shape human history.

7. Think of the five as distinct disciplines or conceptual tools, but tools which, because of the integrated nature of the reality they model, are best used simultaneously.

8. Helped to raise this implicitly known, five-element knowledge-organizing model of reality into consciousness and use it to guide thought, the young can perform at intellectual levels beyond present expectations, including in the specialized studies which make up the traditional curriculum. In short, the best way to teach the young to think is to teach them to think about the organization of their own thought.

9. Societies helped to raise this knowledge-organizing model into consciousness, and use it to understand themselves and those societies with which they interact, will significantly decrease intra- and inter-societal frictions and miscommunication.

10. Formal use of the brain’s “master” approach to selecting, organizing, integrating, and creating knowledge will eliminate or radically reduce in severity every one of the 21 problems with the general education curriculum identified earlier.

**Note:** Any difficulties encountered in understanding the above almost certainly stem from an assumption that what’s being described is complex and esoteric. In fact, it’s exceedingly simple, and is demonstrated constantly by every reader of these words. We model reality with stories assembled from just five kinds of information: (E.g. “Jack and I were bored last night so we went to the mall to hang out.” And we expand our knowledge of reality by discovering relationships between our stories. (E.g. “In the 1880s, the Ghost Dance movement among the Plains Indians suggests a possible relationship between a sense of hopelessness and the appeal of other-worldliness.”))

## IMPLICATIONS AND RAMIFICATIONS

The following brief overview touches on some major consequences of superimposing on general education the knowledge-organizing conceptual framework we all routinely use except in school.

### **Aim**

A survey of current literature will identify 25 or 30 aims or purposes for general education — instill a love of learning; improve problem-solving abilities; teach the basics; enhance thinking skills; explore broad themes; keep the US economically competitive; prepare students for democratic citizenship; transmit societal values; develop character; prepare students for work; promote love of country, and so on.

Although most such aims are commendable, only rarely are they operative. Teachers, understandably, generally ignore them, teaching instead to tests keyed to subject matter standards legitimized primarily by custom rather than by critical thought. Such tests unduly emphasize low-level thought processes, particularly the ability to recall (at least temporarily) something read or heard. What students can actually *do* with this information, or whether it’s likely to translate into desired personal qualities, contribute to success in life, become wellsprings out of which flow

creativity and wise public policy, can't be measured by machine-scored tests.

Success in pursuing any and every acceptable aim of general education hinges primarily on the intellectual, emotion-laden resources students bring to the effort. It follows, then, that the overarching aim of a general education should be to maximize the student's sense-making resources as means to the end of realizing all legitimate aims of education. That requires lifting into consciousness and making deliberate use of the individual's whole way of looking at the world — her or his “mental model of reality.” An overarching aim for general education could read something like this:

*Each of us has acquired from our society a comprehensive 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.*

Adopting this or a similar aim moves the instructional emphasis from “covering the material” in a few compartmentalized disciplines to concern for, and the practical use of, all knowledge. Making deliberate use of our “natural” approach to organizing, integrating, and creating knowledge is the most efficient means to this end.

### **Operationalizing the aim**

Most of the members of every generation assume that what the next generation needs to know is what “the elders” know. Lectures, textbooks, drill sheets, memorization exercises, standards, and measures of accountability based on conceptions of “minimum competencies” operationalize that assumption.

For much of human history, this “cloning” of successive generations worked well. The rates of social, technological, and environmental change were gradual enough to allow each generation to pass along to the next the knowledge and skills needed to meet the challenges of survival.

That's no longer true, but the institution hasn't adapted to the new reality. The general education curriculum has no overarching vision, is so compartmentalized those who teach it communicate primarily with those within their own fields, is so fragmented it leaves academia with no collective voice, and fails the most important test of all — turning out students able to mesh the traditional curriculum's random, disconnected offerings into a coherent, systemically integrated, mutually reinforcing tool for making sense of experience.

There is, of course, an enormous amount of accumulated, useful knowledge, and each generation profits greatly from being able to “stand on the shoulders” of previous ones. But spending classroom time internalizing that knowledge when advances in technology make access to most of it nearly instantaneous is enormously wasteful of time and money. What students need but aren't getting is the ability to cope with the present and an unknown future, the ability to generate for themselves answers to questions not yet being asked, the ability to imagine, the ability, in short, to call on all their mental resources to deal creatively with the complexities of modern life and an unknown future.

Again, making deliberate use of our “natural” approach to organizing, integrating, and creating knowledge is the most efficient means to these ends.



## Instructional materials

“Textbooks won’t be in until the end of the week, so we’ll begin class Monday.”

The assumption that learning is primarily a matter of moving “expert” opinion from those who know to those who don’t know is probably the single greatest obstacle to significant education reform. Metaphors for teaching and learning reinforce the idea that information presents itself in discrete bits and bytes, is almost tangible, and can therefore be transferred more or less intact from mind to mind. Teachers and books are “loaded” with information. Students are “empty headed” or “stuffed” with knowledge. They “cram” for exams until “it comes out their ears.”

Library and Internet assignments, textbooks, note-taking, handouts, most PowerPoint presentations, film and fictional portrayals of schooling — all reinforce the idea that “it’s in the book,” in the teacher’s head, in a reference work or on the Internet, and that education’s main role is to transfer it to students’ heads. Experts in a field are assumed to be well-prepared to teach simply by virtue of their expertise.

Educating is far more complicated and difficult than that, as ancient, commonsense principles of effective teaching recognize. Simplicity must come before complexity, the concrete before the abstract, the familiar before the unfamiliar, ordinary vocabulary before jargon, firsthand experience before secondhand experience, emotional readiness before intellectual stimulation. Recognizing that effective teaching involves altering the images and perceptions of reality in others’ minds — a task inherently more complex than any other — would do much to temper the proposals of legislators and other policymakers convinced that educating (in the words of one high-profile business leader) is simply a matter of “distributing information.

The best “textbook,” then, is “right here, right now” — the real world. Tracing the changes in a patch of sunlight on the classroom floor is a better *initial* introduction to the study of the solar system than a diagram in a textbook. Analyzing seating patterns in the school cafeteria is a better *initial* introduction to social dynamics than reading about India’s castes. Following the paths of the school’s waste to its final destinations is a better introduction to earth science than can be gotten from any book, film, or the Internet.

There’s no general principle worth studying, in any discipline, which doesn’t manifest itself in some instructionally useful way within immediate, direct experience. Indeed, it’s hard to imagine a more powerful or productive primary focus of study for students than the schools they attend, driven by a cooperative effort to make that school a continuously improving learning organization.

Once students have a firm, working grasp of basic ideas and principles derived from the study of immediate reality, the second level of useful instructional materials is the “residue” of past reality. Unedited, unmediated, unexpurgated primary sources — tire tracks in the snow, spent shell casings, recorded comments of participants, wills and other legal documents, tombstone inscriptions, television commercials — these kinds of things lie closest to immediate reality, and their description and analysis teach most vividly and powerfully.

The third and least intellectually stimulating instructional materials are those which now dominate instruction, cost the most, and teach the least — the textbooks and other corporately produced materials which flood classrooms. They pass along

secondhand knowledge, often years out of date, watered down for student consumption, and about as intellectually challenging as completed crossword puzzles. These and other materials should come not first but *last* in the instructional sequence.

Making maximum use of the inherent richness of immediate experience requires a comprehensive conceptual framework free of artificial, arbitrary categorizing systems. Once again, making deliberate use of our “natural” approach to organizing, integrating, and creating knowledge is the most efficient means to this end.

### **Methodology**

A single word summarizes the most-used instructional method in institutionalized education: “Telling.” It comes in many forms — a university professor’s lecture, a mentor’s prompt to a reciting student, a talking head on an educational television channel, a reading assignment in a textbook, crib notes on a student’s shoe sole — but “telling” it is.

Just as a single word can summarize the instructional method dominating American education, so it is that a single word can summarize what ought to be the most-used of all instructional methods. That word is “asking,” and the question some form of which most challenges and stretches the intellect is some form of, “What’s going on here?” Posed to groups small enough and comfortable enough to encourage “thinking out loud,” and accompanied by encouragement to approach the question in an organized, systematic fashion, the question brings to the surface constantly surprising levels of understanding and wisdom.

Making deliberate use of our “natural,” comprehensive and seamless approach to organizing, integrating, and creating knowledge maximizes individual input to dialog.

### **Thought processes**

Because “telling” plays the major role in traditional instruction, “recalling” is the major (sometimes the only) thought process in which students engage. But instruction, like life, should routinely require the use of all known thought processes — observing, recalling, comparing, classifying, translating, analyzing, inferring, hypothesizing, generalizing, synthesizing, valuing, and so on, with the processes taught not directly but as tools brought to bear on reality or its “residue.”

Our “natural” approach to organizing, integrating, and creating knowledge makes constant use of every known thought process.

### **“Standards and accountability”**

When teaching is assumed to mean primarily “telling,” and learning is assumed to mean primarily “recalling,” setting standards and evaluating student performance is relatively simple. The standards say what students are expected to remember, and measures of accountability tally and compare what’s remembered and what’s forgotten.

But when students are asked to demonstrate *understanding* of their mental models of reality by applying them to their own experience, when they’re expected to bring

those models to bear on their society's relationships with other societies, and when they use them to speculate about probable, possible, and preferable futures, responses are too idiosyncratic to be evaluated electronically. Notwithstanding America's love affair with standardized tests and the neat numbers they produce, if the point of educating is to improve the *quality* of student intellectual performance, the inherent complexity of the task necessitates evaluation by human judgment.

As the thrust of education "reform" at the turn of the 21<sup>st</sup> century amply demonstrates, however, this is a problem. The opinions of those closest to students — teachers and parents — aren't trusted. As a practical matter, then, policymakers and administrators might want to consider as the preferred arrangement the merit of multi-teacher teams working for long periods of time with larger blocks of students rather than individual teachers assigned a single class for a year or semester. It's likely that the team's collective judgment would be more acceptable to those inclined to be skeptical of the evaluation skills of the individual classroom teacher.

For students to actually demonstrate understanding, they need a comprehensive conceptual framework to guide their descriptions and analyses. Their "natural" approach to organizing, integrating, and creating knowledge is the most efficient means to that end. That same approach gives educators attached to different fields of study a common language of allusion.

### MISCELLANEOUS NOTES ON IMPLEMENTATION

1. The preceding may leave the impression that solving the myriad problems with the traditional curriculum is difficult, or that it necessitates changes too radical to implement. In fact, the traditional content of instruction need not change at all, needs only to be put to slightly different use, as means to the end of illustrating the systemic nature of the world and the *processes* by means of which sense is made of it. Administrative organization, staffing, class schedules, student loads, grade cards, grading procedures and so on, can remain the same.

Copernicus' observations about the relationship of earth to sun required no change in behavior. It merely changed perception of the commonplace, which in turn had far-reaching consequences. Recognizing time, setting, actors, action, and states of mind as "supradisciplinary" or "macro" organizers of knowledge requires no change in the methods and materials already in use by teachers, merely puts them to different, broader, more sophisticated use.

2. Cost: A paradigm shift — making use of the brain's "natural" approach to organizing knowledge — costs nothing. Indeed, the radical simplification of the general education curriculum its use would allow offers great potential for lowering education's costs.

3. Routine: A seamless, thoroughly integrated approach to instruction is consistent with perception and how the brain learns and is therefore more efficient. Capitalizing on the systemic, mutually supportive nature of knowledge imbeds what's learned more firmly in understanding and memory. After the first few grades, when emphasis switches from the development of basic skills to content, three hours or less per day for general education is enough. This frees up time for students to pursue specialized studies for which they show genuine aptitude or interest, or to engage in apprenticeships and other learning activities not traditionally associated with formal schooling. It facilitates the "magnet school" concept by streamlining the general education component, and encourages development of activities which smooth the transition to adulthood. *Most importantly, its efficiency makes it possible*

*to end the appalling waste of student potential stemming from imposing the same curriculum on all students regardless of ability, a practice which frustrates the less able and holds back the gifted.*

4. Integrated general study vastly simplifies the curriculum and the teacher's task, but because it's perceived as unorthodox it may initially be intimidating. Teaming teachers with differing academic backgrounds and strengths addresses the problem, facilitates growth-producing dialog, and models the cooperative nature of much adult work and other activity.

5. The present preoccupation with standardized test scores effectively kills educational innovation. As long as that preoccupation persists, the only way to introduce new programs may lie in their use with students considered either academically hopeless, or so superior their performance on mandated tests is of no concern.

6. Notwithstanding impressions based on observations of upscale suburban schools, or those temporarily benefitting from extraordinary leadership, America's schools suffer from terminal inertia. It's almost impossible to overestimate either the dangers of failure to change, or institutional resistance to it. That resistance rarely stems from careful investigation of new ideas and their rejection based on substantive issues. Instead, it ordinarily takes the form of rationalizations: "We're already doing that." "We have to meet next-level expectations." "We tried that and it didn't work." "Our teachers couldn't handle it." "We'll get to that after we've covered the basics." "We have to teach to the standards." "This isn't what the tests will cover." Of all aspects of educating, the curriculum is the most resistant to change.

7. A "Catch-22" underlies institutional paralysis: Educators won't adopt new ideas without political approval. Political approval won't be granted without policymaker understanding. Policymaker understanding requires demonstration. Demonstration is impossible without political approval.

## CONCLUSION

No body of theory, no coherent philosophy, no comprehensive research underlie and support the traditional general education curriculum. Any one of the twenty-one specific problems cited earlier is sufficiently serious to warrant calling a national conference. We live with the current curriculum because we refuse to examine it.

But even if examined, the traditional curriculum is so deeply imbedded in bureaucracy, educators have so much invested in making it work in spite of its inadequacies, and the general public's assumption that "how it is, is how it's supposed to be" is so firmly held, change seems all but impossible. Even those who reject institutionalized education — homeschoolers, founders of alternative schools and so on — assume that the traditional, knowledge-compartmentalizing curriculum is sound. They may attempt to minimize the artificial fragmentation of knowledge via interdisciplinarity, theme exploration, project or problem-based instruction and so on, but the artificial and arbitrary walls between disciplines are nevertheless thought to be real and necessary. Few see them as blocking the basic process by means of which knowledge is constructed.

If even the *appearance* of change meets fierce resistance, school-related bureaucracies must be left in place, educators must be allowed to continue teaching the content with which they're comfortable, and educational processes and procedures observable by the public must remain unchanged. Neither must there be

any call for enabling legislation or additional school funding. Whatever's undertaken must simply appear to be, and *actually* be, a more effective way to pursue one or more widely held American values.

Unquestionably, maximum development of individual potential is such a value. Indeed, it's almost certainly the preeminent American value, underpinning democracy, credited with creating our historically vibrant economy, and bringing to us far more than our share of patents and Pulitzers. And we've done this with an educational system which, while giving lip service to developing individual potential, is preoccupied with standardization. Our salvation has been a system which, until recently, was "loose" enough to allow teachers to teach rather than read from a corporately designed, Congressionally imposed script.

No bar we can set for students to clear, no test we can administer, no policy we can adopt, would move us more surely and rapidly toward true individual and collective greatness than instruction deliberately designed to help the young elevate into consciousness their way of looking at the world, their mental model of reality, their key to moving from mere "knowing," to "knowing what they know." We've always had the right destination, just haven't bothered to examine the curricular road thrown together in 1893 to see if it's taking us there.

If business and other special interest groups with self-serving agendas can be fended off, if conspiracy theorists prone to see in every small change a sinister plot to undermine the Republic can be held at bay, and if someone with real political clout will realize that just "raising the bar," just trying harder, just doing with greater diligence that which brought us to our present condition, is a recipe for disaster and step up and *lead*, we might have a chance.

They wouldn't really have to do much other than grant permission for educators to pick up where some of them left off in the 1980s. That's when a few leaders of business and industry and ideology-driven think tanks, working through politicians, hijacked education reform, side-tracking exploration of the potential of the sense-making system humans have been using since the dawn of civilization.

That system, not reading, writing, and arithmetic, not the core curriculum adopted in the 19<sup>th</sup> century, not any of the fads that re-emerge periodically with new names, is the "*real* basics." Millennia before western adoption of an industrial revolution-inspired, fragmented view of educating, humans were making sense. Their tool for doing so — locating that which was being thought about in physical space, assigning it time dimensions, identifying the participating actors or objects, describing their actions, speculating about the attendant states of mind, tying the five together systemically, then steadily elaborating and refining the whole — made civilization possible. If we make that system explicit and superimpose it on present practice, student potential beyond all present expectation be released.

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## On the Present General Education Curriculum

**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 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)

**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)

**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)

**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)

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

**Jonathan Smith:** “To dump on students the task of finding coherence in their education is indefensible.” (Quoted in *Time*, April 20, 1981, p. 50)

**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)

**David W. Orr:** “A second danger of formal schooling is that it will imprint 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)

**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)

**David 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)

**Leon Botstein:** “”We must fight the inappropriate fragmentation of the curriculum by disciplines . . .” (*The Chronicle of Higher Education*, December 1, 1982, P. 28)

**Frank Betts:** “Learning begins as an integrated experience as a newborn child experiences the world in its totality.” (*ASCD 1993*, 13.7)

**Felix Frankfurter:** “That our universities have grave shortcomings for the intellectual life of this nation is by now a commonplace. The chief source of their inadequacy is probably the curse of departmentalization.” Introduction to Alfred North Whitehead’s *The Aims of Education*, Mentor 1948

**Alfred North Whitehead:** “[We must] eradicate the fatal disconnection of subjects which kills the vitality of the modern curriculum.” (Presidential Address to the Mathematical Association of England, 1916)

**Philip Sabaratta:** “Students rarely have an opportunity to discover what one set of ideas has to do with another.” (*Community College Review*, Winter 1982-83, Vol. 10, #3)

**Greg Stefanich and Charles Dedrick:** “Learning is best when all of a student’s educational experiences merge to form an integrated whole, thereby transforming information into a larger network of personal knowledge.” (*Science and Mathematics*, 1985, Vol.58, p.275)

**James Coomer:** “Our educational systems . . . are now primarily designed to teach people specialized knowledge — to enable students to divide and dissect knowledge. At the heart of this pattern of teaching is . . . a view of the world that is quite simply false.” (*Texas Tech Journal of Education*, 1982, p.166)

**Paul DeHart Hurd:** “There are neither philosophical nor psychological grounds for compartmentalizing knowledge into islands of information as school subjects are currently conceived.” (*Middle School Journal*, Vol. 20, No.5, p.22)

**James Moffett:** “[It is essential to integrate] learning across subjects, media, and kinds of discourse so that individuals may continuously synthesize their own thought structures.” *Phi Delta Kappan*, September 1985, p. 55

**Rene Descartes:** “Hence we must believe that all the sciences are so interconnected, that it is much easier to study them all together than to isolate one from all the others. If, therefore, anyone wishes to search out the truth of things in serious earnest, he ought not select one special science, for all the sciences are conjoined with each other and interdependent.”

**Tsuneshaburo Makiguchi:** “Through their studies, children must be brought to that point of awareness wherein . . . [they] get some sort of total picture of it all . . . In advancing level by level through the curriculum, students should be internalizing an overall idea structure of means and ends.” *Education for Creative Living*, 1989, p. 196

**Carnegie Foundation For the Advancement of Teaching:** “The disciplines have fragmented themselves into smaller and smaller pieces, and undergraduates find it difficult to see patterns in their courses and relate what they learn to life.” Prologue to “College: The Undergraduate Experience In America,” November 1986

**Association of American Colleges:** “We do not believe that the road to a coherent education can be constructed from a set of required subjects or academic disciplines.” (“Integrity In the College Curriculum, A Report to the Academic Community,” *Project On Redefining the Meaning and Purpose of Baccalaureate Degrees*, 1985)