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Why Thinking 'Outside the Box' Is Not So Easy

(And Why Present Reform Efforts Will Fail)

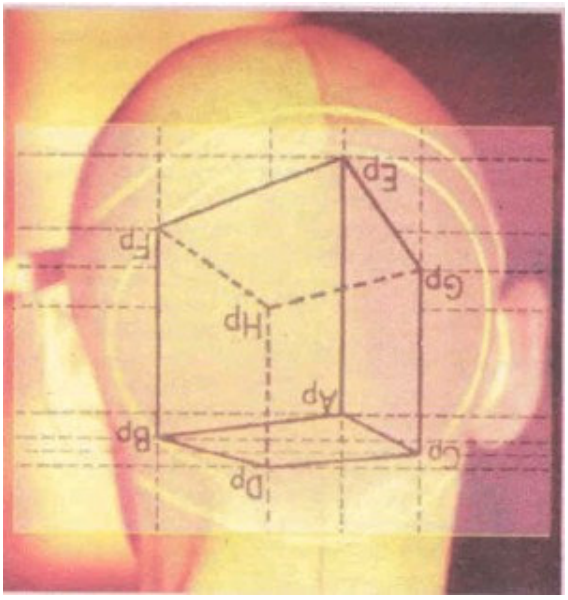
By Marion Brady

In the fall of 1987, the Associated Press carried a story from Tacoma, Wash., about a boy "penned in a coffin-sized box for two years because his step grandmother feared he was brain-damaged."

Two years in a box! Did the kid scream to get out? Feel abused? Unhappy? No. When he was let out, according to the news item, "he was amazed to learn not all children are shut up in the same way."

The boy illustrated, literally, the difficulty of "thinking outside the box."

We all share that difficulty. We're bundles of unexamined beliefs about what's proper and acceptable, and many of those unexamined beliefs relate to schooling. We cling to them not because research has shown them to be true or because they make good, common sense, but simply because lifelong immersion in the status quo makes it exceedingly difficult to imagine alternatives.



Of all the education-related unexan1ined assumptions, none is more deeply embedded than the belief that the main business of schooling is to teach the "core curriculum"—math, science, social studies, and language arts. Supporting that belief is another assumption: that these four fields of study are the only, or at least the optimum, organizers of general knowledge.

That last assumption is so powerful it shapes education worldwide. At all levels, from middle through graduate school, the four areas of study are the main institutional organizers. So taken for granted is it that they are the fundamental building blocks of education, that reform movements don't question their centrality. Separate sets of "standards" reinforce them. "Measures of accountability" are keyed to them. Even those who know that knowledge is seamless, who Know that the walls between fields of study are artificial and arbitrary, tend to assume that the four are the ultimate organizers of knowledge. They may call themselves "interdisciplinarians," or may make use of projects, themes, problems, student needs, or other content organizers, but they don't push the disciplines aside. They try instead to "bring them to bear."

The traditional curriculum has given us much. We've created a way of life that makes specialized studies indispensable. But assuming that the "core" fields are pretty much the whole story has also cost us much, and the costs are escalating. School, finally; isn't about disciplines

and subjects, but about what they were originally meant to do—help the young make more sense of life, more sense of experience, more sense of an unknowable future. And in that sense-making effort, math, science, social studies, and language arts simply aren't up to the challenge. They've given us a curriculum so deeply flawed it's an affront to the young and a recipe for societal disaster.

Consider the problems listed below. Anyone of them is serious enough to warrant calling a national conference, and the general curriculum in place in America's schools and colleges suffers from all of them. It:

- Has no agreed-upon aim;
- Ignores the basic process by means of which knowledge expands;
- Disregards the holistic, systemic nature of knowledge;
- Neglects the brain's need for order and organization;
- Fails to model the seamlessness of human perception;
- Has no criteria for determining the relative importance of what's taught;
- Relates only tangentially to real-world experience;
- Disregards important fields of study;
- Doesn't capitalize on the mutually supportive nature of knowledge;
- Uses short-term recall rather than logic to access memory;
- Has no built-in self-renewing capability;
- Is little concerned with moral and ethical issues;
- Lends itself to simplistic approaches to evaluation;
- Doesn't move smoothly through ever-higher levels of intellectual complexity;
- Makes unreasonable demands on memory;
- Penalizes rather than capitalizes on student differences;
- Neglects higher-order thought processes;
- Doesn't encourage novel, creative thought; and
- Vastly underestimates student intellectual potential.

These problems can be solved, and solved rather easily, but not by playing with course-distribution requirements, adding more math and science courses, or tightening the "rigor" screws. The solution lies "outside the box," in raising students' awareness of their thought processes. What they need but aren't getting from school subjects is a "master system of mental organization."

The role played by mental organizers is easily demonstrated. Say to a student, "Name as many games as you can," and, after a dozen or so, most will begin to stumble. But an occasional student will attack the problem differently, will think, "children's games," then, when he or she has exhausted that category, will move on to other categories—party games, games played with cards, dice, words, balls, computers, across nets, and so on. Performance will depend less on the quality of the student's memory of games than on the quality of his or her "game categories" system. If it's good, the names of a hundred games may be reeled off with little or no hesitation.

Math, science, social studies, and language arts are mental organizers. They give students elaborate category systems for thinking about certain kinds of things. But only certain kinds of things. This is especially true now, after a little over a century of "standardizing" via textbooks, legislation, and inattention. As the above list of problems should show, they're not up to the challenge of comprehensive "sense making." They don't connect with each other, don't

adequately connect with or organize ordinary experience, don't "stack" categories in order of importance, don't include "open-ended" categories essential to novel, creative thought—don't, in short, do the job that needs doing.

Ironically, every kid shows up for the first day of school already making sophisticated use of a "master" category system for organizing knowledge that can do the job that needs doing. There'll be no major improvement in students' intellectual performance until they're helped to surface that system and put it deliberately to work.

Here's where professional educators begin to balk. And the higher up the professional ladder they've climbed—the more rigid the box they're in tends to be—the balkier they get. It's unlikely most have ever given thought to the possibility of alternatives to the familiar disciplines, subjects, and courses as organizers of knowledge. That one of those alternatives might actually be superior seems too unlikely to take seriously. That that alternative is already known and used by everybody makes it either a threat to that which they've achieved or gets it labeled as too mundane to merit scholarly attention.

Notwithstanding obliviousness, lack of interest, skepticism, or other obstacles to acceptance of the idea, humans make sense of experience by weaving together, systemically, five main kinds of information:

TIME (*the Ice Age, morning, during World War I, when the cap is removed, once upon a time, and so forth*);

PLACE (*ancient Egypt, the forest, on the five-yard line, Paradise, on the shelf*);

ACTORS (*Esau and Jacob, a crowd, the queen and court, me and Dad, or Goldilocks);*

ACTION (*sign the lease, attack the fort, pay a visit, check for clues*); and

CAUSE (*revenge. too much heat, loneliness, broken dam, impure water*).

From the weaving together of these kinds of information, humans then draw SYSTEMIC RELATIONSHIPS *("One morning, Little Red Riding Hood asked her mother if she could go into the forest to visit her grandmother, as it had been a while since they'd seen each other.*")

Think of the five categories—time, place, actors, action, cause—as drawers in a file, each with a system of subcategories, sub-subcategories, and so on, encompassing not just the organizing systems of everything now taught, but all knowledge, everything cross-filed with everything else.

Now comes the hard part. Pointing out the most powerful mental organizer known to humankind is easy. Teaching it is also easy. In fact, it doesn't have to be "taught" in the usual sense of the word, just raised into consciousness, elaborated, refined, and put to use as sense-maker. Students helped to see, early on, how their brains organize knowledge, before they're pushed into the artificial confines of subject-matter boxes, will simply take it for granted that schooling deals primarily with the whole of human experience and only secondarily with certain useful but random parts of it.

Neither does use of the system mean trauma for traditionally trained teachers. No subject, no course, no favorite lesson need be discontinued, just put in larger perspective, rather like matching pieces of a jigsaw puzzle to the picture on the lid of the box.

The difficulties of acceptance of a supradisciplinary knowledge organizer lie where they always have, in policymakers unable to imagine alternatives to the status quo, in inertia, and in simplistic "reforms" like the No Child Left Behind Act, which aren't reforms at all but simply attempts to pursue the status quo with greater diligence.

Education leaders came out of the 1960s aware of the instructional potential of systems theory and the centrality of conceptual frameworks. The institution was pointed in the right direction until the publication of the unduly alarmist *A Nation at Risk* in 1983 triggered the present reactionary trend. There will be no significant improvement in student performance until educators begin to make use of the brain's usual way of organizing knowledge.

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