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What real learning actually looks like in class

By Marion Brady

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) (http://en.wikipedia.org/wiki/Project-based_learning). 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 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.

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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,* 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.*
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> *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 *Connections: Investigating Reality* 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: http://www.marionbrady.com/CIR.asp .