The mother of all curriculums

By Robert Costrell

Dr. Patricia Ruane, chief administrator of curriculum for Brookline's schools, raised a number of eyebrows at a public forum last November, when she turned her attention to math and science.

The stakes are high. Math and science are not only intellectually uplifting, they also go right to the heart of the next generation's standard of living.

The high school has many outstanding science teachers, who continue to generate high test scores, despite the fact that our elementary school graduates know very little science.

Still, these high school teachers will be the first to point out that part of the high test scores are due to Brookline's many foreign-born students, trained abroad. For example, the math SAT's of our non-native English speakers exceed those of Brookline's native English speakers, even with the disadvantage of language.

With this in mind that November evening, I listened to Dr. Ruane advocate the program of Wellesley College's Dr. Peggy Means McIntosh. I had never heard of Dr. McIntosh before that night, but her ideas are the current rage in some educational circles.

She has lectured our teachers three times in three years for sizeable fees. Dr. Ruane's speech last November was based on Dr. McIntosh's lecture the previous month at Devotion, which was videotaped by the administration.

One of the functions of the Committee for Quality Education is to promote public discussion of educational issues, and we encourage parents to see this tape. The Ruane-McIntosh program should not be implemented without full public discussion.

What's so bad about "Exact Thinking"?

In brief, the idea is to teach elementary math and science by appealing to the "spiritual" side of our childrens' psyches. Dr. McIntosh calls this "lateral thinking," as opposed to "vertical thinking," of which she strongly disapproves.

But let us be clear what "vertical thinking" is before we discard it. In Dr. McIntosh's words, it is "exact thinking, or decisiveness, or mastery of something, or being able to make an argument and take on all comers or turning in the perfect paper." It is "triggered by words like excellence, accomplishment, success, and achievement."

Let me take a bold stand here: The Committee for Quality Education endorses "vertical thinking." We want our children to strive for excellence, even if they don't achieve it, and we want them to be educated in "exact thinking." Who could have dreamed this would be a point of contention?

And yet, to Dr. McIntosh, vertical thinking is "very dangerous." Its logic of "either—or, right—wrong, you got it—you didn't" is really a "win-lest-you-lose" logic, "kill-or-be-killed," which is making our "young white males dangerous to themselves and the rest of us, especially in a nuclear age." If you think I've twisted her words, please see the video.

Bodies in the Body of the World of Arithmetic

But what is Dr. McIntosh's "lateral" approach to math and science? Her lecture begins with the touching case of a child who cannot add 1+3+5. To Dr. McIntosh, she is a victim of the vertical system. In the "lateral world," however, "the aim is not to win, but to be in a decent relationship with the invisible elements of the universe." Here, we are "bodies in the body of the world."

In lateral education, we are "no longer in thrall to this ideal of excellence." Instead, "teacher is not master and the student is a body in the body of the world of trying to figure out."

More concretely, "however [the child] wants to structure the [addition] worksheet is how it should be structured. . . She needs to co-invent it until it suits her." To this end, Dr. McIntosh gathered suitably non-hierarchical suggestions for generating arithmetic exercises from our teachers.

Dr. McIntosh was pleased, but she didn't want to say which proposals she liked best, since that would be "win—lose."

"Your guess is as good as mine," she said. The important thing was "putting [the children] off the right—wrong axis, the win—lose axis. That's [my] invention."

How Dr. McIntosh Should Teach

The depressing thing about all this is how that poor child is so ill-served by such well-intentioned advice from someone who clearly has no use for math whatsoever. Incredibly, in the 1½-hour lecture, Dr. McIntosh never tried to diagnose the child's problem.

Since the child could not add 1+3+5, we need to know if she could add 1+3. If not, then she would only be further demoralized by more three-term exercises, no matter how non-hierarchical.

If she can add 1+3, then the child is ready for a breakthrough, since she could then add 4+5 and finish the problem. The child would not only have found the answer, but would have the basis for later study of the associative law in algebra, not to mention the self-esteem that goes along with it.

But of course, this is "vertical thinking," derided by Dr. McIntosh as "fragmented." Although lateral, or holistic thinking may be useful in certain non-mathematical realms, it hides from us the decomposition of three-term sums which we all go through, even though we don't stop to think about it.

Nonetheless, Dr. McIntosh encouraged our elementary school teachers to take the same lateral approach for the elements of biology and chemistry they might be teaching.

My guess is that most of our teachers must have wondered why their curricular leaders were wasting their time with this, if they really wanted our kids to learn world-class math and science. Is this what our foreign-born students did in their native lands? Is this how Jaime Escalante, of "Stand and Deliver," taught his kids AP calculus in the barrios of East Los Angeles?

But of course, world-class math and science is not really the goal of the Ruane-McIntosh program. They want my daughter "to be in a decent relationship with the invisible elements of the universe." Thank you, but I will see to her religious education myself.

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