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*DeLiberate Thinking*

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# Is Our Practice of Humanistic Mathematics Actually Humane?

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It would seem reasonable to assume that Humanistic Mathematics is good for students. Yet, I have recently been forced to question that assumption and to face the possibility that there may be dangerous unintended consequences to our efforts to make mathematics more meaningful for kids. I am in full agreement with the ideal; it is our current implementation that may have serious flaws.

My concern stems from a visit to a school system that is doing most things right. The hallways of the elementary school were decorated with an inspiring array of charts, graphs and reports, all showing various applications of mathematics to topics of interest to children. The teachers were skilled practitioners of student-centered learning and clearly knew how to keep their students mentally active, challenged and enthusiastic. So, I wondered, why were minority student test scores among the lowest in the state?

Later that day I visited the middle school. The building was spectacular. It was a spacious, well lit, inviting environment that had the feel of a place in which serious work would be expected. The teachers were dedicated and competent, though their instruction was a bit too teacher-centered for my taste. Yet when I got to see samples of student work it was pathetic. Placed side by side with no indication of the students' grade level, I would have judged the third grade work as seventh grade and the 7th grade work as 3rd grade. Students seemed to be sliding backwards at an alarming rate.

My visit to the elementary school had been fascinating; I remained interested and enthusiastic throughout the entire time. But, in the middle school my enthusiasm quickly waned, and, until the shock of seeing the abominable student work, I had been close to nodding off. What if students had the same reaction? I am certain my middle school years were no better than those offered in this school. But, when I went to middle school I knew school was supposed to be boring and that it was something I just had to put up

with. How would I have reacted if I had thought school could be intellectually challenging and fun? Would I have had the stamina to make even half an effort?

A week later the 12th grade TIMSS scores were released. But what shocked me was not the scores but rather the reaction of the mathematical community to them. United States students are among the best in the world at 4th grade and among the worst by 12th grade. Clearly something is happening between the numbers 4 and 12 but the education community remains fascinated with the numbers 1 to 3. A bold, expensive initiative has been proposed to shrink class sizes in the early elementary years. Does anyone realize that the numbers 1, 2 and 3 come before 4, not after?

## SOME REFLECTION

Of course most of this information is not really new. We have all known for a very long time that the middle school math years are usually a vast wasteland. What was new to me was the recognition that the wasteland might do more than put kids to sleep. Contrasted to a superior elementary education, it might permanently kill off any interest students would ever have in school learning. A conclusion that drastic demands to be questioned, so I asked myself about Japan. It is my understanding that in their education system a wonderfully student centered elementary program is followed by a highly structured, intensely pressured and thoroughly teacher-centered high school experience. Yet, few students seem to be damaged by that contrast. The difference seems to be in the culture and in the family. In Japan all students know that they must conform to the system and that to fail to do so is simply not an option. Back in the school district I visited the affluent students apparently get the same message. It is the students from less affluent families that seem to be giving up on school. There is no one back home to tell them they can't do that.

From all of the above I have derived three lemmas.

#### LEMMA ONE

When a highly student-centered, intellectually demanding elementary school experience is followed by a less demanding, teacher-centered middle or high school program, it is natural for students to give up entirely on education. This will happen unless family and cultural constraints prevent it.

#### LEMMA TWO

As we improve our elementary programs, making them more student-centered and more intellectually challenging for students, we should expect to see degraded performance in the middle and high school years wherever teacher-centered instruction remains the norm.

#### THE DIE LEMMA

If we continue to favor improvements in elementary math education without insuring that equivalent improvements are instituted at the secondary level, we will kill off many students' interest in mathematics.

#### SOME ACTION

Since reaching the above conclusions I have begun discussing them with other math educators. So far no one has taken serious issue with my logic. Yet, I have also found very little interest in taking on the challenge of changing secondary mathematics. Primary education, like Humanistic Mathematics, is warm and fuzzy; high schools are neither warm nor fuzzy and probably should not be made to be so. Thus, it seems that caring, concerned math educators don't care about high school and remain unconcerned about the hundreds of thousands of lives that are being destroyed by our failure to bring primary and secondary education in line with each other. In this country young underclass urban youth are dying at a rate comparable to the worst mass genocides of the Twentieth

Century. A major contributing factor is the hopelessness of their educational options. It is for this reason that I have to ask whether Humanistic Mathematics (as it is currently practiced) is not leading directly to genocide and therefore a completely inhumane practice.

Let me be very clear about one thing. I am not against the changes we have made to the elementary mathematics curriculum. What I am against is the lack of coordination between what happens in the elementary and in the secondary mathematics classrooms. Also, I am not so idealistic as to believe we can change everything at once. I believe, based on extensive experience and observation, that efforts directed at changing the way university faculty teach are mostly futile. But, just as we agree it is inhuman to use 12 to 14-year-olds as soldiers, but somehow find it acceptable to use 18-year-olds, I am willing to put our college students at risk. I believe that college students can handle a sudden and arbitrary shift in the way they are taught math. And, if they can't handle it, I believe they can handle the faculty. I am not willing to ask the same from a 12 to 14-year-old, and I think it is inhumane to do so.

So, I wonder, is there anyone out there who shares my concern? Who out there has solved the problem of making the secondary math classroom as student centered and as exciting as the best primary classrooms? What chance is there of spreading such innovations widely, and what will it take to do that?

*Editor's Note: Reader responses are welcome. Responses will be printed in a future issue and may also be posted on our listserve (email). For information on how to join the HMNJ Listserve, see "From the Editor."*

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"I am enough of an artist to draw freely upon my imagination. Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world."

--Albert Einstein

*The Saturday Evening Post*

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