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Are we "dumbing down" science?

Steve Bakke ***December 15, 2023***

"Identity politics has engulfed the humanities and social sciences on American campuses; now it is taking over the hard sciences. The STEM fields – science, technology, engineering, and math – are under attack for being insufficiently diverse.'" – Heather MacDonald, a Fellow at the Manhattan Institute.

In a previous article I focused on trends in math instruction. My article, "'Participation trophies' in math education" expressed concern about losing traditional practices such as challenging curricula, measuring achievement, and maintaining accountability for schools and students.

For example, some educators have decided that emphasis on precision in math instruction is a manifestation of "white supremacy." What's wrong with striving for the right answer? Trivializing the importance of discipline and accuracy in mathematics surely must stifle dreams of exploring the universe, building canals, improving the power grid, programing computers, or performing brain surgery.

My math article pointed out other radical theories such as "the concept of the concept of '2+2=4' is a cultural construct," a product of "western imperialism and colonialism." Similarly, a report by Steven Tucker, "Un-American Pi" describes how some educators consider traditional math to be a form of "microaggression." The implication is that mathematics is subtle, perhaps unintentional discrimination against one or more minority groups.

I haven't found that same level of radical theories in my review of the other STEM fields – science, technology, and engineering. Nevertheless, my impressions definitely point to a widespread tendency for science, technology, and engineering programs to challenge the traditional application of meritocracy in student admissions and for measuring student progress. Traditionally, students were selected and evaluated on the basis of traditional testing techniques. The challenge to those traditional measurements begs the question of whether these fields of study can successfully defend their loyalty to traditional practices.

Examples of MacDonald's concerns include: The National Science Foundation's Graduate Research Fellowship Program has dropped all science Graduate Record Exams; the Medical College Admissions Test is being deemphasized by medical school administrators; a professor of oncology at an Ivy League medical school was rebuked by his dean for giving an exam in the pharmacology of cancer drugs that was too "fact-based."

This trend is defended by the argument that traditional methods are unfairly biased against minorities and women, resulting in disparate test and other evaluation results. While this is aggressively argued both ways, I think the defenders of tradition are slowly losing their long held philosophical dominance. There's no question that the pressure is immense to alter the racial, cultural and gender balance in these hard sciences.

Nevertheless, the noble goal of assuring opportunities for all may not be having the desired statistical success. I've encountered what may be anecdotal reports that a growing number of science programs are aggressively pursuing a shrinking population of potential minority candidates. It seems the changes being made often end up as too much of a numbers game, with little redeeming structure. But it's too soon to predict where these efforts will end up a few years from now.

I recognize that there is a holistic element to the practice of medicine, for example, which is the defense for some of these recent changes. But I continue to believe that all of the hard sciences are heavily fact based as well. Facts are important building blocks of any body of knowledge.

I stand by my conclusion that the rigor of education and objective evaluation of the process and results are important elements for success. Rejecting those traditions is partly to blame for the deteriorating international standing of our education system. Students need challenging preparation and course requirements, objective measurement, discipline, accuracy, and symbols of achievement. Learning shouldn't be made easy – something will be missing if that happens. These disciplines can't be abandoned.

We must encourage professional achievement across all races, cultures, and genders. However, we can't let it become an arbitrary numbers game because the entire effort will be diminished. Mathematics and the other hard sciences can't thrive if we emphasize a "warm, fuzzy, and approximate" version of advanced levels of study.