Common Core Doesn't Add Up to STEM Success

The high-school math standards are too weak to give us more engineers or scientists.

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As a former member of the Common Core Validation Committee and the Massachusetts Board of Elementary and Secondary Education, I am one of the few mothers to have heard the full sales pitch for this latest educational reform, which has been adopted by 45 states.

I know the Common Core buzz words, from "deeper learning" and "critical thinking" to "fewer, clearer, and higher standards." It all sounds impressive, but I'm worried that the students who study under these standards won't receive anywhere near the quality of education that children in the U.S. did even a few years ago.

President Obama correctly noted in September 2012 that "leadership tomorrow depends on how we educate our students today—especially in science, technology, engineering and math." He has placed a priority on increasing the number of students and teachers who are proficient in these vital STEM fields. And the president's National Math and Science Initiative is strongly supported by people like Suzanne McCarron, president of the Exxon Mobil Foundation, who has said she wants to "inspire our nation's youth to pursue STEM careers by capturing their interest at an early age."

As Stanford mathematics professor James Milgram noted in "Lowering the Bar," a report the two of us co-wrote for the Pioneer Institute in September, the Common Core deliberately leaves out "major topics in trigonometry and precalculus." Contrast that with the status quo before the Common Core, when states like Massachusetts and California provided precalculus standards for high-school students. The implications of this are dramatic. "It is extremely rare for students who begin their undergraduate years with coursework in precalculus or an even lower level of mathematical knowledge to achieve a bachelor's degree in a STEM area," Mr. Milgram added.

Yet the basic mission of Common Core, as Jason Zimba, its leading mathematics standards writer, explained at a videotaped board meeting in March 2010, is to provide students with enough mathematics to make them ready for a nonselective college—"not for STEM," as he put it. During that meeting, he didn't tell us why Common Core aimed so low in mathematics. But in a September 2013 article published in the Hechinger Report, an education news website affiliated with Columbia University's Teachers College, Mr. Zimba admitted: "If you want to take calculus your freshman year in college, you will need to take more mathematics than is in the Common Core."

Common Core's deficiencies also plague its English standards, though its proponents have been selling the opposite line. Under the Common Core, complex literary study—literature close to or at a college reading level—is reduced to about 50% of reading instructional time in high school English class. The rest of the time is to be spent on "informational" texts, and more writing than reading is required at all grade levels.

Excerpts will have to do when reading "The Great Gatsby" so students can spend more time on the Teapot Dome Scandal. Yes, that's a real suggestion for informational reading from the National Council of Teachers of English, the professional organization of English teachers that aims to support teachers under the Common Core.

In its November 2013 Council Chronicle, a teacher argued that learning about this 1920s government oil scandal is the proper way to "contextualize" Fitzgerald's Jazz Age characters. But reducing the time students spend studying complex literature means fewer opportunities to learn how to read between the lines—the fundamental way teenagers learn how to analyze a text.

Still, no major English or humanities organizations have endorsed the Common Core state standards for English language arts. Not so in mathematics.

Despite the dramatic mismatch of the Common Core math standards with the White House goal of preparing more students for a STEM career, all the heads of major professional mathematics associations expressed "strong support for the Common Core State Standards for Mathematics" in a July 2013 letter solicited and posted by William McCallum, professor of mathematics at the University of Arizona and a Common Core math standards writer. Other signers include the presidents of the American Mathematical Society, the National Council of Teachers of Mathematics, the Association for Women in Mathematics, the Benjamin Banneker Association, the Society for Industrial and Applied Mathematics and TODOS: Mathematics for ALL.

Why leaders of these organizations would endorse standards that will not prepare students for college majors in mathematics, science, engineering and mathematics-dependent fields is a puzzle. But no educational reform that leads to fewer engineers, scientists and doctors is worthy of the name.

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