

Why the U.S. sucks at math

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No doubt about it – we're failing our children.

We take it for granted that American children lag behind the rest of the world in STEM literacy: In a [recent survey](#) [1], U.S. 15-year-olds ranked 25th out of 34 developed countries in mathematics. We also assume that kiddies are born with a natural affinity for math and science – it must be something in the water. But what if STEM literacy isn't an innate skill? What if it can be taught?

It sounds so simple: If we plant the seeds at an early age, they blossom into a wonderful STEM tree. But this much is clear – the United States *doesn't prioritize* STEM in elementary school. A recent study by the Early Math Collaborative at Erikson Institute, a nonprofit graduate school in child development, found that 21% of Chicago preschool and kindergarten teachers taught math every day, while 96% taught language arts.

We're clearly trying to bolster writing ability and reading comprehension at the expense of STEM literacy. Not that the ability to form a complete sentence isn't a worthwhile skill – I'm continually horrified at each successive generation's butchering of the English language (Merriam Webster recently codified the millennials' not-so-literal use of "[literally](#) [2]"). But we're falling behind the rest of the world in anything that requires a Bunsen burner or slide rule. And it's having a profoundly detrimental effect on our nation's prosperity.

The STEM Education Coalition [noted](#) [3] that "STEM education is closely linked with our nation's prosperity in the modern global economy and our nation's future depends on elevating STEM education as a national priority through education reforms, policies to drive innovation, and federal and state spending priorities."

President Obama has made STEM literacy a major part of his domestic agenda, pointing out [that](#) [4] "the nation that out-educates us today will out-compete us tomorrow." But America's STEM outreach has been, at best, ineffectual.

In 2007, the Bush administration passed the America COMPETES Act, which trained 70K new teachers in Advanced Placement and International Baccalaureate courses and provided STEM training for existing teachers. In 2011, Obama signed into law the America COMPETES Reauthorization Act of 2010, and last year, this administration announced plans to create a national STEM Master Teacher Corps. But according to the [Heritage Foundation](#) [4] – a conservative think tank – there remains a major shortage of qualified STEM teachers throughout the nation — and American students continue to perform worse than their peers in STEM subjects.

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And this is unfortunate, because STEM weathered the recession better than most fields – and they're still hiring. According to [Change the Equation](#) [5], STEM job postings outnumber unemployed people by almost two to one. The jobs are there, but we face a dearth of qualified candidates. And it begins at the source – elementary school.

We don't prioritize math at the college level, so our schools of higher learning produce teachers who aren't prepared to spread the gospel of STEM. "A lot of them are math phobic," said Jeanine Brownell, assistant director of programming for Early Mathematics.

The Early Mathematics Project has [created](#) [1] a weeklong summer training program to address this serious deficiency among tomorrow's educators. The program focuses on how to teach mathematical thinking, rather than basic math procedures, and according to Erikson, students of teachers enrolled in its math program showed, on average, three to five months additional progress in math.

Perhaps we *can* teach an appreciation for math and science. Maybe we're not born with it so much as we're nudged in a certain direction. And for those in need of a push, reinforcement is critical.

And who else to provide a nudge but Sesame Street, the granddaddy of educational children's programming?

Toward this end, Sesame Workshop – the nonprofit educational organization behind Sesame Street – has created [Little Discoverers: Big Fun with Science, Math and More](#) [6], an online program for acquainting kids with the basics of science, technology, engineering, and math. The idea is to start 'em early.

In the Huffington Post item, "[Not a 'Science Person?' Maybe Your Kid Is!](#) [7]", Lynn Chwatsky of Sesame Workshop suggests that early exposure to the STEM fields – regardless of race, income or parents' highest level of education – is linked to future success.

"While kids may not all grow up to be scientists and engineers, highlighting the fun in STEM helps to build on their innate tendencies to explore and experiment," she said.

And that's the key – encouraging innate tendencies while spreading an appreciation for STEM fields amongst children not otherwise predisposed to math and science.

I do believe in innate talent – when I was younger, I loved to write and would dictate stories to my mom before I even knew how to put pen (or pencil) to paper. (Thanks, mom!) And an assortment of teachers and mentors encouraged and developed my predisposition to writing. But imagine if I loved chemistry and nobody encouraged me -- would I have given up?

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Early exposure to STEM is no guarantor of higher test scores and more engineers, but it can certainly reinforce innate tendencies and prepare children for future success.

Why does the U.S. suck at math? Simple – we don't teach it.

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- [1] <http://online.wsj.com/article/SB10001424052970203764804577056551856059254.html>
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- [4] <http://www.heritage.org/research/reports/2011/01/educate-to-innovate-how-the-obama-plan-for-stem-education-falls-short>
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