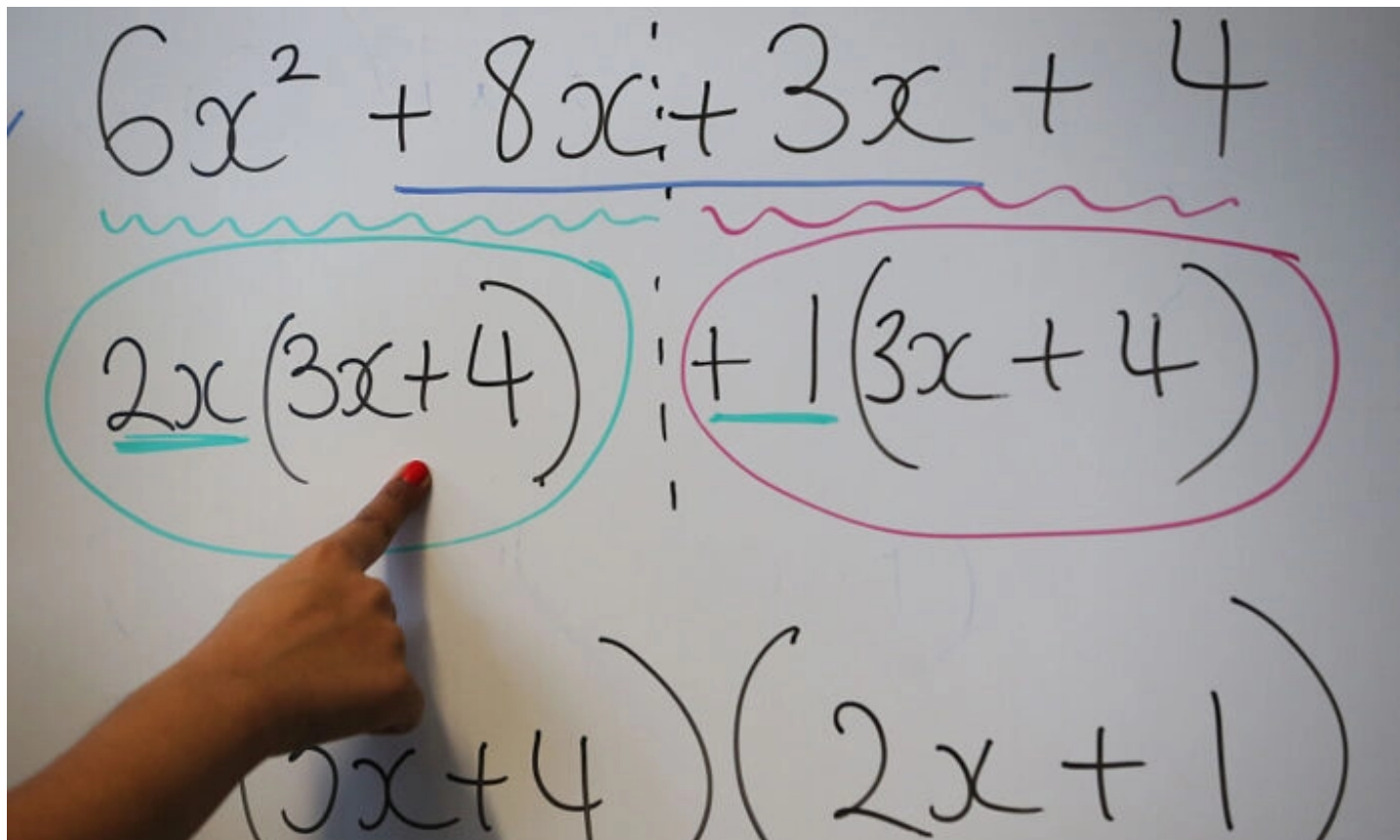


Poor Math Scores Are Now a National Security Threat

The United States must focus on helping American children to develop an understanding, appreciation, and love for math.

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A teacher writes an equation on a whiteboard during a maths lesson at a secondary school in London, England, on Dec. 1, 2014. (Peter Macdiarmid/Getty Images)



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2/19/2024

Updated: 2/19/2024

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Commentary

The most recent results of the Programme for International Student Assessment (PISA) highlight a concerning trend for U.S. students in the [field of math](#).

In comparison to their counterparts in other industrialized nations, American students are falling behind. The rather sobering results revealed a 13-point decline for U.S. students when compared to the 2018 exam.

In stark contrast, 28 countries and economies managed to either maintain or improve their 2018 math scores, with countries such as Switzerland and Japan leading the way—and leaving the United States in the dust. These considerably more successful nations share a

number of common characteristics, including, most notably of all, shorter school closures during the pandemic, as noted in the report.

Obviously concerned by the findings, the Defense Department has called for a new initiative to provide support for education in the fields of science, technology, engineering, and math (STEM). As The Hechinger Report [reported](#), China, the United States' biggest rival, has eight times the number of college graduates in these disciplines compared to the United States, while Russia, another major foe, has four times the number of engineers. This alarming disparity, noted the Hechinger Report piece, has prompted concerns beyond the realm of education. The United States' mathematical failings pose a direct threat to its technological supremacy.

Other commentators have gone a step further. Falling math scores, they suggest, should be viewed as a [national security threat](#). They're right.

Mathematics plays [a critical role](#) in various fields such as the physical sciences, technology, business, financial services, and infrastructure. For instance, geometry, algebra, and trigonometry are fundamental parts of architectural design. Moreover, math plays a significant role in medicine, AI, and quantum computing. Math serves as the foundation for virtually all scientific and industrial research and development. Essentially, mathematics can be seen as the underlying operating system that makes the world go round.

Which begs the trillion-dollar question: What can be done?

The math problem is an education problem. To correct the problem, the manner in which math is taught must change—radically and rapidly.

Other countries have different approaches to comprehending, appreciating, and teaching math. Take the aforementioned Russia, for example.

Chris Dooly, a youth mentor and writer, [has discussed](#) the concept of "Russian Math." Although it lacks a concrete definition, he writes, educators and historians generally agree that it revolves around the idea of developing proficiency in mathematics through an understanding of abstract mathematical concepts. Instead of just focusing on rote learning, this type of math is more holistic in nature, factoring in the overall mental development of students. Math instruction is used to enhance children's intellect and character.

The Russian method emphasizes not only finding the answer to a math problem, but, unlike the approach in the United States, also understanding the very essence of the problem, Mr. Dooly explains. Moreover, the Russian method de-emphasizes standardized testing and instead prioritizes the establishment of a strong mathematical foundation through class discussions and engaging conversations. Tests are important, but actually understanding why math matters and what the answers really mean is considerably more important.

The Russian approach [emphasizes](#) the need to foster a comprehensive understanding of mathematics and the process of problem-solving, rather than relying solely on rote memorization. From a young age, students are introduced to mathematics, [starting with](#) basic arithmetic and geometry. The curriculum is designed, first and foremost, to foster rigorous problem-solving abilities and cultivate critical thinking skills.

As critics of the U.S. education system have noted, the country's obsession with standardized testing is geared more toward funding

rather than the growth and progress of students. The allocation of federal funding, which is determined at the highest level of government, heavily relies on test scores and graduation rates. Consequently, schools depend on these metrics to secure equal or increased federal funding for the following year. If education, in its purest form, is supposed to enlighten students, then the United States' approach to teaching math is doing the very opposite.

Other countries—such as the Netherlands, [for example](#), where math scores are exceptional—offer courses that incorporate real-world math and cover topics such as financial algebra and mathematical modeling. In Ireland, where I was educated, the practical application of mathematical concepts to real-life scenarios is a common practice. In truth, across most of Europe, this approach to teaching math is prevalent. By focusing on mathematical concepts that are both relevant and relatable, students get a firmer grasp of what is being taught, simply because they can apply the lessons to their own lives.

The United States must move beyond its unhealthy obsession with rote learning, which is nothing more than a superficial understanding of a topic. It must focus on helping American children to develop an understanding, appreciation, and love for math. This move is necessary. In many ways, the country's future depends on it.

Views expressed in this article are opinions of the author and do not necessarily reflect the views of The Epoch Times.

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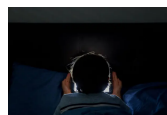
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