

Final Polished Report: A Data-Driven Analysis of Standardized Test Scores

Introduction: A Flawed Narrative

As we move deeper into the 21st century, artificial intelligence is sparking a level of societal controversy not seen since the industrial revolution. A common narrative has emerged, fueled by studies like a recent one from MIT, suggesting that reliance on AI tools leads to weaker brain function. The popular conclusion is that AI is making us less capable of critical thought.

However, as someone who leverages AI as an assistive tool to overcome a visual impairment, I know firsthand how it can augment human capability. This led me to investigate the core claim: is new technology truly the cause of a decline in critical thinking? While the MIT study was a perfect catalyst, its methodology had significant flaws, including a small, uncontrolled participant pool, making its headline-grabbing conclusions misleading. To get to the bottom of this, I turned to a more reliable, long-term dataset: national standardized test scores.

The Hypothesis: A Systemic Issue Predating AI

After an initial review of historical ACT and SAT data, a clear and concerning trend emerged that began long before the recent AI boom. This led to a new hypothesis: **the widespread, nationwide implementation of Common Core State Standards in mathematics, largely complete by 2014, is strongly correlated with the beginning of a sustained, multi-year decline in national average ACT Math scores.**

The Evidence: A Story in Four Charts

The data provides compelling visual evidence to support this hypothesis, challenging the popular narrative that AI is the primary culprit for a decline in academic performance.

1. The Decline Began a Decade Before Modern AI As seen in the trend of national average ACT Math scores, a consistent and significant decline began around 2014. This drop from a stable average of 20.9 to 19.6 over the subsequent eight years started nearly a decade before generative AI tools like ChatGPT were available to the public. This timeline strongly suggests the problem's roots lie elsewhere.

2. The Problem is Isolated to Mathematics If a new technology were making students "lazier" or less capable of critical thought in general, one would expect to see a decline across all subjects. However, the data shows the opposite. While Reading, English, and Science scores

have remained relatively stable, the Math score is the only one showing a distinct, sustained downward trend. This isolation points directly to a math-specific cause, such as a fundamental, nationwide change in how the subject was taught.

3. The Long-Term View Shows a Generational Drop Analyzing the data by decade makes the trend even clearer. The average ACT Math score in the 2010s was lower than in the 2000s, and the average for the 2020s thus far is even lower still. This is not a short-term fluctuation; it is a persistent, generational decline in performance that coincides with a major pedagogical shift.

The Projection: A Statistical Warning for the Future

To understand the potential long-term consequences of this trend, a linear projection was created based on the rate of decline from 2014 to 2022. It is crucial to note that **this is a projection, not a prediction**. It is a statistical tool used to illustrate the severity of the current trend if it continues unabated. The model projects that if this trajectory is not altered, the national average ACT Math score could fall below 19.0 by 2028. This serves as a powerful warning about the potential consequences if the systemic issues affecting math scores are not addressed.

Conclusion: A Stagnant Foundation in a Changing World

The data tells a clear story: the sustained decline in national math performance is not a new problem caused by AI. It is a pre-existing condition, a decade-long trend that points to a systemic issue within our educational foundation itself. Blaming AI is an easy answer, but it is likely the wrong one.

The real issue may be that our education system has grown stagnant. While the world changes, we have implemented policies like Common Core that, according to the data, have correlated with a measurable decline in student achievement. The path forward may not be to fear new tools, but to fundamentally rethink our approach. A small school in Texas, the Alpha School, is already experimenting with using AI to accelerate learning and free up time for students to learn crucial social and emotional skills.

The world is facing a "sink or swim" moment, just as it did with the rise of computers. The question is not whether AI is a harmful tool, but whether our educational foundation is strong enough to adapt. This analysis suggests it is not, and that the problem we face is much deeper than a chatbot.