

# Bay Area innovator uses AI to tackle California students' declining math skills

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Credit: Stanley Morales from Pexels

As California students' math and English test scores continue to trail pre-pandemic scores and students struggle to recover from COVID-19 learning loss, one Bay Area innovator has turned to artificial intelligence

for a solution.

This year's test scores data revealed that only about 35% of K-12 students in the state met or exceeded the standards in [math](#) and students remained 47.6 points below the math standard to be considered on track for college and career readiness at their grade level.

And a California bill signed in 2022—Assembly Bill 1705—severely restricts the ability of community colleges to offer remedial math and English courses with the goal of streamlining students' path to graduation by cutting lengthy prerequisite courses and prioritizing higher-level coursework.

But math educators have expressed concern that placing students directly into calculus instead of a prerequisite pre-calc or trigonometry course will result in more students failing or opting for non-STEM courses and disproportionately impact disadvantaged students who may need more resources and support.

A new artificial intelligence web-based app, MathGPT, aims to solve these problems by providing educators and students with an AI-driven teaching assistant to help students get the one-on-one math support they need while cutting educators' workload by taking on course planning, assignment creation and grading.

The Palo Alto-based software company, GotIt! Education, launched MathGPT in October, and the program has been tested in more than 30 [community colleges](#) nationwide and a dozen in California, including De Anza, Fresno City College and Pasadena City College.

Peter Relan, chairman of GotIt! Education, discusses MathGPT, educators' distrust of [artificial intelligence](#) and his love for music and basketball.

**Q: Why are students' math skills important to you and how did that lead to your role with MathGPT?**

A: It's a combination of my personal experience and my love for math, as well as the technological inflection. I am the kid of refugees from India who came to India and were homeless. I was born in a refugee settlement but my parents worked their way up and got me the best education in Delhi and I grew to love math. I came to the US to go to college at 18 and I became a math tutor when I was a freshman. And that changed my life.

An observation that I realized when I was in college tutoring math was how many students were making [life decisions](#) based on whether they thought they could do a quiz or a midterm. The decisions people are making are often in the first or second year of college about their life trajectory. So when the AI revolution started the last few years, I said, why don't we focus on higher ed where the gateway decision is made?

**Q: How does MathGPT work?**

A: We believe that the journey starts with the instructor, not the student. So it has an instructor co-pilot and a student tutor. MathGPT lets them create assignments, midterm quizzes and all the content that they put in the lecture notes and textbook material. With the push of a button, it becomes a fully tutored course.

**Q: How do you navigate a growing mistrust among educators of AI and fears it will lead to a rise of students cheating?**

A: We always say, "MathGPT, the AI that instructors trust and students

love." That's a tagline because if instructors don't trust you to be accurate, cheat-proof and curriculum aligned, they don't want to use you. What the instructors don't want is for students to have a tool that they can just copy, not learn anything and bring in.

So, from their perspective, it's a nightmare that students have ChatGPT. From the students' perspective, it's a delight. So we said, how do we solve this fundamental distrust on the instructor side and this love on the student side? There's only one way. We create a trusted, accurate, cheat-proof version of this.

## **Q: How is MathGPT different from other AI programs like ChatGPT?**

A: It's a conversational AI tutor but it's not raw ChatGPT. It's not as free roaming and 'wild west' as ChatGPT but it's very close. Students will be doing all of their assignments, midterms and quizzes on MathGPT. The students can't just say, "Give me the answer."

They can't even get a step-by-step solution. Why? Because this is [higher education](#). Every time the student asks a question, we do something called Socratic tutoring, which is to respond "What do you think we should do?" So they're learning.

## **Q: Who is using MathGPT?**

A: We tested it with two classrooms last fall and 19 highly engaged classrooms in the spring. Now, we are in dozens and dozens of classrooms. We have now delivered in the one year we've been live over 109,000 tutoring sessions to more than 4,000 students.

## **Q: Do you plan to expand MathGPT in the coming**

## **years to include additional subjects and grade levels?**

A: Now that we've got the product launched into the target market we were initially after, we're open to expanding to K-12. We are very open to any of the Bay Area schools becoming pilots in the fall of next year or even spring or summer. We're also going to address STEM and business subjects.

## **Q: How much does the program cost?**

A: MathGPT is free. Any instructor can bring it into the classroom and set up the course. All the content is tutable for free. The only restriction is that the number of tutoring sessions on the assignments is limited. The paid version includes unlimited tutoring on the assignments and is \$25 per student per course.

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