

# Taking maths by the horns

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THE numbers don't lie: Malaysia's youth have a mathematics problem.

Findings from the *SPM 2025 Examination Results Analysis Report* revealed that 21.7% of exam candidates did not pass maths, making it one of the commonly failed core subjects.

This is not a new development. Sijil Pelajaran Malaysia or SPM results from 2021 to 2024 have similarly shown maths failure rates consistently sitting in the 20% to 25% range.

In some schools, the percentage of students failing maths reaches as high as 80%, according to Andre Sequerah and Edmond Yap, the co-founders of AI-powered educational tech (edtech) company Tupai.

Maths is inherently different from other school subjects.

The learning process is cumulative and progressive, which means each lesson builds on the last, and missing one class makes it harder to grasp the next.

In many cases, one gap in understanding can lead to a student falling further and further behind, leaving them increasingly confused and demotivated.

"The worst thing is when it becomes an identity," Yap says.

"When kids decide they're 'not a maths person', that means you've really lost them."

The factor missing from the equation was personalised, interactive teaching. However, most teachers did not have the time or resources to provide individualised attention to every student.

Sequerah and Yap sought to address this widespread issue with the help of technology.

They found that edtech solutions like instructional maths

video platforms were useful for learning, but only drew in students who already had strong maths abilities.

Then came the rise of generative artificial intelligence (AI) and large language models (LLMs).

"We saw how powerful it could be. We could build an AI tool that gave kids the ability to ask questions and get answers in a conversational way, and it was available 24 hours a day," Yap adds.

That tool became the basis of the Tupai AI maths tutor, which was officially launched in October 2024.

The subscription-based platform not only answered questions, it could uncover a student's knowledge gap and fill it. It also offered users practice sessions and exam preparation guides.

The platform's content is curriculum-aligned for Standard-Based Curriculum for Secondary Schools and International General Certificate of Secondary Education students, so that all the material is fully relevant to the students using it.

"Users could use a generic LLM to learn, but it would often provide alternative maths solutions and techniques, which can be confusing, especially for weaker students," Sequerah says.

"We worked hard to ensure it specifically fits the Malaysian maths syllabus, and that has proven to be one of our strong points, based on feedback from parents and teachers."

Tupai's impact was quickly evident. In one of the first schools it was deployed in, the maths failure rate among its Form 3 students was reduced by 50%, while the number of students receiving As, Bs and Cs rose by 670%.

However, a gap remained – some students were simply unmotivated to improve their

■ AI-powered edtech company aims to tackle Malaysia's high maths failure rate

■ Business uses digital platform and peer-based learning to improve grades

■ Platform benefitted from MyCIF co-investment by Securities Commission on behalf of Finance Ministry



**Big impact:** Yap (left) and Sequerah. The co-founders of Tupai AI maths tutor started by focusing on the student, but the next stage will be centred around the teacher.

maths skills, regardless of the learning tools available to them.

This led to the creation of Tupai & Friends, a peer-based learning programme centred around after-school sessions where students would help each other solve maths problems, with the AI-tutor providing back-up assistance.

"The social factor is one of the most powerful motivators, especially for teenagers," Yap says.

"Peer motivation is an abundant resource in schools, so why don't we use it systematically to improve learning outcomes?"

With the support of corporate foundations and organisations, the company piloted Tupai & Friends in nine schools in 2025, and plans to bring its total to 16 schools this year.

The next strategic step, according to the co-founders, is to extend this community-based model to tuition centres.

"If we incorporate our AI resources and framework for student-led sessions into the teaching centre, it creates an entire ecosystem of help for the child. We see it resulting in better student performance and increasing profitability for centres," Yap further adds.

The first Tupai & Friends-partnered tuition centre is set to begin in June.

"If these pilots work, it becomes a new business-to-business sales vertical for us."

"After that, we hope to start driving more growth in the business-to-consumer side as well," he adds.

According to the co-founders, Tupai's growth has been fuelled by a strong network of support, including angel investors and equity crowdfunding (ECF).

"ECF felt very relevant to us. Our purpose has always been tied to the future generation of Malaysians, and so we've always believed people of the public should own a part of Tupai," Yap says.

"The Malaysia Co-Investment Fund or MyCIF coming in to provide 50% matching funds was the icing on the cake, as it helped boost our research and development (R&D) as well as reach more schools."

R&D is central to a company like Tupai, where performance hinges on how effectively technology and pedagogy are integrated.

"It's not just about developing software but understanding how students think and what pulls their attention to learning," Sequerah explains.

"As a small team, the challenge for us has been to innovate and work out how we can scale with limited resources."

Tupai has a number of launches planned in the coming months, including expansion into upper primary school maths content.

The team is also working on a portal designed for teachers, which will assist them monitor students' progress, give recommendations and automatically generate worksheets.

The aim is to save time for teachers while empowering them with the resources to guide better outcomes for their kids.

"We started by focusing on the student, but our next stage will be centred around the teacher, and we believe that will drive Tupai for the next few years," Yap says.



**Effective method:** Tupai & Friends enables students to help each other solve maths problems, supported by Tupai's AI tutor.



**Innovative tool:** The platform's Malaysian curriculum-aligned content is a key strength for Tupai. – Photo: Tupai