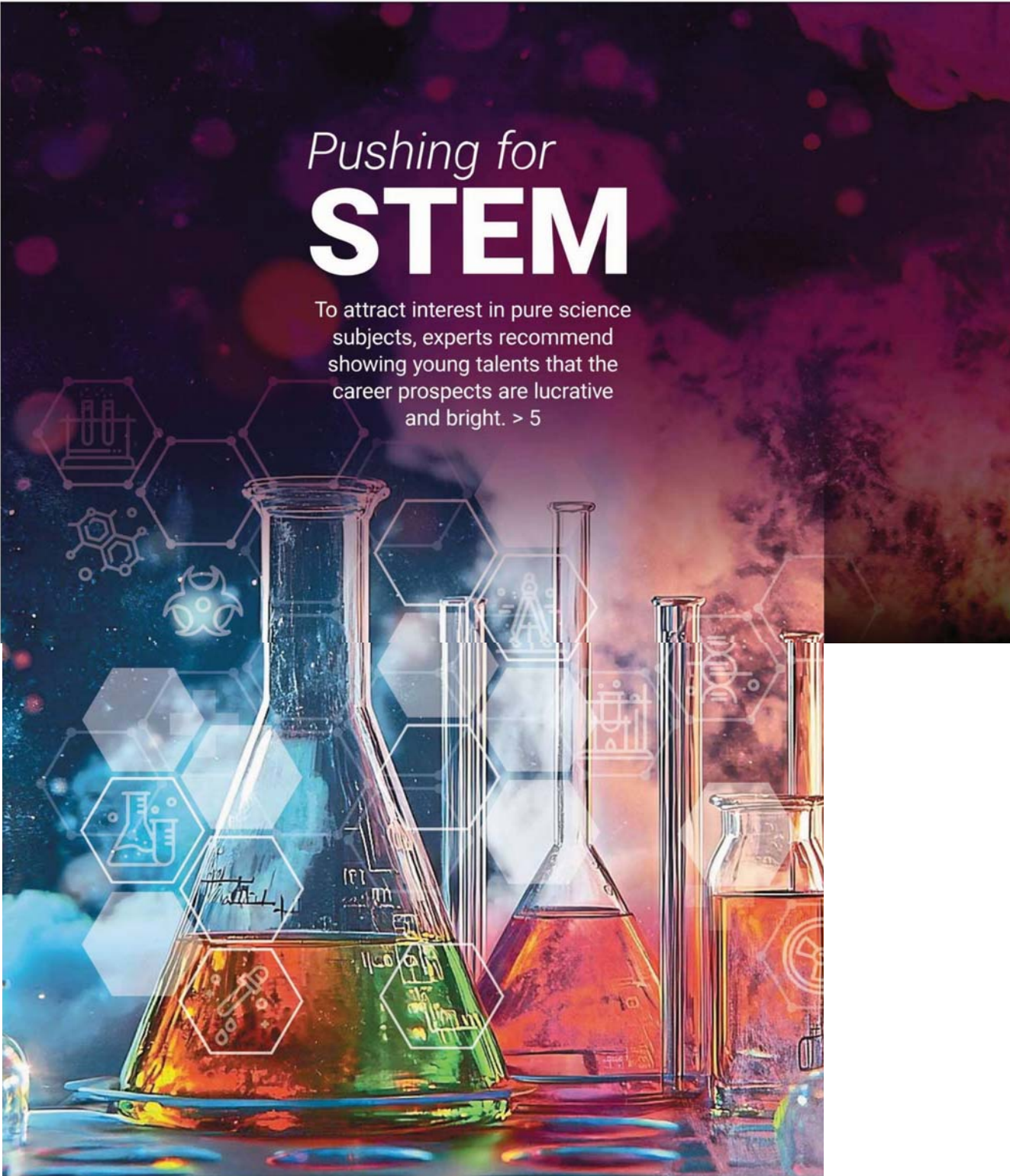




06 APR, 2025

Pushing for STEM

Sunday Star, Malaysia







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BY JAAYNE JEEVITA  
and REBECCA RAJAENDRAM  
edwards@thastar.com.my

IF Malaysia wants stronger science, technology, engineering, and mathematics (STEM) participation, the government must show young talents that a career in the pure sciences is both lucrative and bright.

Prof Datuk Dr Ahmad Ibrahim from the UCSI University Tan Sri Omar Centre for Science, Technology and Innovation (STI) Policy said students are not interested in the pure sciences mainly because they do not see bright career prospects in the field.

This, he stressed, must be addressed before Malaysia can even think about achieving the 70% fully residential school (SBP) STEM enrolment target.

"It's not hard to get students to opt for medicine and engineering because it's common knowledge that such jobs pay well and offer good promotion prospects."

"Most pure science students with knowledge of physics, chemistry and mathematics end up either in academia or as scientists," he said, adding that these talents are crucial in innovation-led economies driven by biotechnology, precision manufacturing, artificial intelligence (AI) and semiconductors, yet careers in these fields are rarely talked about.

"If the government wants to encourage students to choose the pure sciences stream, it must offer competitive salary packages for research scientists."

"And if the government takes the lead in raising salaries, the private sector is likely to follow, making pure sciences a more viable career path overall."

"This would be a game changer for the government's STEM streaming initiative," he opined.

### Start young

National STEM Association president and founder Emerita Prof Datuk Dr Noraini Idris said to achieve Prime Minister Datuk Seri Anwar Ibrahim's 70% STEM target, a multi-pronged approach is needed.

"The fastest way would be to have targeted interventions at primary and lower secondary levels, ensuring students are exposed at an early age to the career potential pure sciences offer," she said.

The abolishment of the Primary School Achievement Test (UPSR) and Form Three Assessment (PT3), she said, has allowed for competency-based evaluations, enabling teachers to better guide students in developing their skills through fun and interactive learning of

# Better pay, prospects, please

Engaging lessons, industry linkages also crucial for STEM uptake

science and mathematics.

"Monitoring student competency while incorporating hands-on approaches through experiments, coding activities, gamification and projects encourages students to opt for pure science classes because they see the importance of science and mathematics."

"Engaging, practical learning will lead to higher STEM enrolment, but many students lack exposure to scientific concepts and problem-solving skills in childhood education," she said, adding that in countries like Singapore, Finland and Germany, children are introduced to science, coding and mathematics at kindergarten.

Academy of Sciences Malaysia (ASM) secretary-general Prof Dr Noorsaadah Abd Rahman said a key reason why most students are uninterested in STEM and innovation is how the subjects are introduced and taught in schools.

"Often, the approach is theoretical and rigid, making it difficult for students to see real-world applications."

"Without engaging, hands-on experiences that ignite curiosity, many students struggle to connect with STEM and view it as complex," she said.

She said ASM is conducting an extensive study on the national education reform to transform Malaysia's education system from preschool to lifelong learning.

Age-appropriate STEM lessons, she added, should begin at kindergarten.

"For instance, explaining everyday phenomena, such as how plants grow, can spark early curiosity and lay the groundwork for deeper STEM learning in later years."

"A basic understanding of STEM is essential for society, as it enhances scientific literacy and fosters a culture of innovation rather than mere technology consumption."

"We can nurture future inventors, researchers and problem-solvers with the right

foundation," she said.

Agreeing, Prof Ahmad said the way science is taught through the curriculum and pedagogy is key.

"Students mostly view science as difficult and boring, so teachers must make the subject more interesting. Incorporate the societal aspects of science. Make lessons practical and relatable to the students' daily lives," he said, suggesting more outdoor based learning to drive interest.

### Industry linkages

Prof Noraini said more industry linkages can also make pure sciences more attractive.

"Science-related school trips can strengthen students' understanding of how scientific concepts apply to real-world industries. Through these sessions, students can clearly visualise the kind of work they can do, and their interest in pure sciences will naturally increase."

"So, schools need to actively partner with industries related to semiconductors, AI,

medical engineering, and other advanced STEM fields," she said, adding that these can result in sharing sessions where professionals visit schools to conduct interactive discussions with students.

### Still a challenge

Realistically, even if all interventions are in place, getting 70% of SBP students to opt for STEM by next year will be a challenge, said Prof Noraini.

A more workable timeframe would be between three and five years, she said.

"We need more time to prepare students to transition gradually. We cannot achieve this in a rush," she said.

Prof Noorsaadah said the 70% target should not be confined to students in SBP alone.

Instead, she said, STEM education should be accessible to all students, regardless of school type.

"Fostering a strong STEM foundation across the entire education system is crucial for national development," she concluded.

## Full speed ahead

**March 12**  
Prime Minister Datuk Seri Anwar Ibrahim set a 70% STEM stream target for SBP students starting next year to strengthen expertise in these critical fields.

**March 13**  
> To achieve the 70% target, all SBP have implemented specialised STEM curricula, the Education Ministry said. Currently, 98.86% of SBP students — totaling 18,113 — are enrolled in STEM courses, while the remaining 209 students (1.14%) are in social sciences.

> STEM packages offered at SBP:

- Students take all pure science subjects (Physics, Chemistry and Biology) and Additional Mathematics;
- Students take all pure science subjects (Physics, Chemistry and Biology), Additional Mathematics, Arabic, Al-Quran and As-Sunnah Education, and Islamic Sharia Education;
- Students take all pure science subjects (Physics, Chemistry and Biology), Additional Mathematics, Arabic, Hizf Al-Quran, and Maharat Al-Quran;
- Students take two pure science subjects (Physics and Chemistry), Additional Mathematics and Computer Science.

> In addition to strengthening traditional STEM programmes across all school types and collaborating with the Science, Technology, and Innovation Ministry to facilitate STEM exposure at various educational levels, the Education Ministry will launch a specialised SBP initiative focused on technical and vocational education and training (TVET).

**March 16**  
Education Minister Fadhlina Sidek said STEM (pure sciences and applied sciences) has always been a priority in SBP but streaming processes will be fine-tuned to prioritise pure sciences. Currently, STEM enrolment at SBP and Science Secondary Schools stands at over 98%, with only 2% in the social sciences stream.

**March 20**  
Anwar, in a Facebook post, said increasing enrolment in the fields of STEM, as well as TVET, is important to ensure that the country's workforce remain relevant to the industry's needs and to enhance the marketability of graduates.

Source: Media reports

## Top three parents' approach to overcoming low STEM interest

- 1 Continuing to expose their children to STEM without forcing them
- 2 Showing their children the fun and practical side of STEM
- 3 Encouraging the exploration of other interests alongside STEM



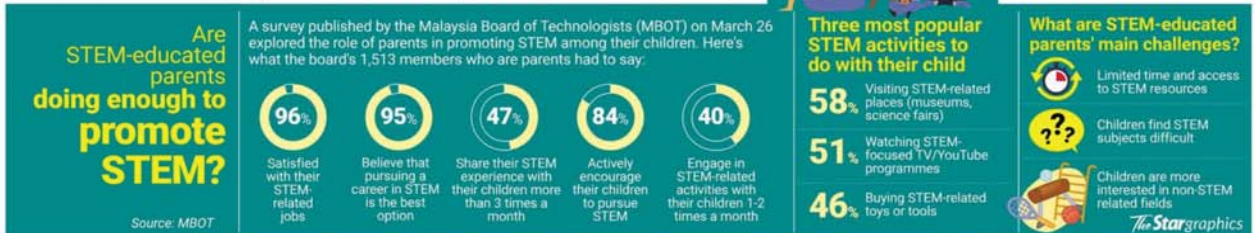
## Shaping a STEM future

Students avoid the pure science stream due to the perceived difficulty of scoring good grades and securing a place in public universities. If Malaysia truly needs more pure science grads, then guarantee a high percentage of Forms Four and Five pure science students a place in affordable post-secondary TVET or university pathways. This is just the first step, but it can be implemented quickly. The harder part is ensuring all post-secondary and tertiary courses lead to meaningful employment.

Penang Science Cluster CEO  
Datuk Ooi Peng Ee

AI assistants and chatbots can help simplify complex science concepts, making them easier to grasp and more enjoyable. This will motivate pure science students to succeed. While generative AI systems like ChatGPT are advancing, the abilities that come from studying pure sciences, such as critical thinking, creativity and problem-solving skills, are still very much needed. Superintelligent AI, which could surpass human intelligence in all fields, remains a future possibility, thus reinforcing the importance of human expertise in scientific progress.

Secondary school standard-based curriculum (KSSM) Science textbook author Tho Lai Hoong





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## SUMMARIES

To attract interest in pure science subjects, experts recommend showing young talents that the career prospects are lucrative and bright. > 5

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