Research

3 high school teachers from Kuantan create Smart Stroke Lab, combining arts and technology to colour educational innovation, win gold at CITREX UMPSA 2025

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PEKAN, 1 July 2025 – In an effort to elevate the Visual Arts Education subject while also promoting Science, Technology, Engineering, Arts, and Mathematics (STEAM), a group of teachers from the Kuantan district under the Ministry of Education Malaysia (MOE), led by SMK Bukit Rangin teacher Rizuan Shah Hapipi, developed the Smart Stroke Lab.

The research won a gold medal at the Creation, Innovation, Technology and Research Exposition (CITREX) 2025, organised by Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA) from 18 to 19 June 2025 at the UMPSA Sports Complex Hall, Gambang Campus.

He was assisted by two teachers, Nor Azean Bohari from SMK Padang Garuda and Rozmiza Hassan from SMK Sultan Abu Bakar.

According to Rizuan Shah, the research is a teaching and learning innovation titled Smart Stroke Lab - Creative Exploration of Colouring Technique Through Innovation, designed using the ADDIE model and developed specifically to enhance mastery in painting techniques through a structured approach.

“This module is based on five systematic steps: Sketch-Based, Mastery, Artistic, Rendering, and Tinting (S.M.A.R.T).

“Students are guided in stages using primary, secondary, and tertiary colour blending techniques.

“Its uniqueness lies in its dual forms, digital and physical,” he said.

He added that the research began in April 2025 and took several months to be fully developed into a prototype.

“The design and development process involved analysis, design, development, module implementation, and evaluation through pre- and post-tests to measure effectiveness, along with early data collection.

“It was completed as a prototype in June 2025 for participation in this CITREX competition.

“The original idea emerged when we analysed the SPM 2024 results pattern in Visual Arts Education from our schools,” he said.

He further explained that based on that pattern analysis, they found a decline in the Subject Performance Grade (GPS), indicating weak student mastery in basic techniques and colour exploration.

“This pattern of weakness formed the basis for designing a module based on five structured and effective learning intervention processes.

“The module functions as a structured watercolouring technique teaching guide using interactive visual technology.

“It guides students scientifically from the initial sketch to the final process, tinting,” he said.

He added that their aim is not only to help students become proficient in colouring but also to cultivate their interest in the visual arts.

“Our goal is to provide an accessible, practical, and high-impact module that also helps reduce student achievement gaps.

“We plan to develop an interactive digital version of the module in the form of a mobile app titled Rahsia Warna, which will be applicable across schools and beneficial to both teachers and students nationwide.

“We also aim to expand the module into a series, integrating it across the curriculum with fields like technology, mathematics, and science to help produce more versatile art educators,” he explained.

Rizuan Shah said that for now, they are acting as teacher representatives under MOE and are operating directly from their respective schools with the support of their principals.

“No official grant has been received, but we are open to any form of collaboration from government agencies, the private sector, universities, or NGOs.

“The module is highly budget-friendly, with prototype production costing only about RM8 per set.

“If produced in large quantities, the cost could be even lower because we want to ensure it is affordable for all schools,” he said.

Their participation in CITREX 2025 recently bore fruit when they successfully won a gold medal.

According to him, CITREX 2025 is an excellent platform as it is not just a competition but a venue to uncover talent and foster a culture of innovation among school students, educators, and researchers.

“I hope that more opportunities will be created for the Social Sciences and Humanities field in future editions.

“We hope this module can become an official teaching aid endorsed by MOE.

“We are also open to collaborating with higher education institutions and the creative industry to expand the impact of this innovation both nationally and internationally,” they expressed.

These three teachers are no ordinary individuals.



Rizuan Shah is actively involved in writing and publishing articles in conference proceedings.

He has also presented papers at visual arts education symposiums and participated in innovation exhibitions at both local and international levels.

He was also once nominated for the McDonald’s Inspirational Teacher Award and received the Futuristic Teacher Award.

Meanwhile, Rozmiza, who won the Pahang Iconic Teacher Award, is a professional illustrator for educational publications and a popular influencer on TikTok (@mizahassan).

Nor Azean, on the other hand, is a textbook evaluation panel member and is building her presence in educational content on social media platforms such as TikTok (@Cikgu Yan), in addition to excelling in stage decorations for official events.

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