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Language Month at SMAN 1 Taman Merges Literacy with STEM- and AI-Driven Batik Innovation

Sidoarjo, East Java, October 13, 2026 — The Language Month commemoration at SMAN 1 Taman in Sidoarjo, East Java, served as a platform to strengthen literacy and showcase student creativity through a co-curricular exhibition based on Science, Technology, Engineering, and Mathematics (STEM). Among the featured projects was ART-MATIKS, an innovation blending mathematics, artificial intelligence (AI), and the preservation of traditional Sidoarjo batik.

Minister of Primary and Secondary Education Abdul Mu'ti emphasized the vital role of language as a foundation of national identity and sovereignty.

"When we speak about language, we are not merely discussing a tool for communication, but language as an expression national identity and sovereignty," Minister Mu'ti stated in East Java on Monday, October 12.

This message aligns with the school's initiative to foster appreciation for the Indonesian language, literature, and literacy. SMAN 1 Taman Principal Dewi Nurmalasari noted that the event delivered meaningful, collaborative, and student-centered learning.

Through co-curricular projects, students build critical thinking, creativity, independence, and communication skills. "We train them to analyze problems, think creatively and critically, work independently, collaborate, communicate effectively, among other skills," Dewi said.

ART-MATIKS: Transforming Mathematical Formulas into Batik Designs

One standout creation was ART-MATIKS (Redesign Application and Mathematical Transformation of Sidoarjo Batik), mentored by teacher Ika Yunita and developed by 11th-grade students.

During the exhibition, 11th-grade student Elfaretha Shifa explained that the project applies geometric transformation concepts—including dilation, reflection, rotation, and translation—to draft batik pattern motifs, which are then refined using AI tools.

"Starting with dilation, reflection, rotation, and translation, we use those formulas to draft a pattern design, then use AI prompts to enhance and elevate it into a final work of art," Shifa explained during her presentation.

The resulting motifs can be applied to a wide range of products, including water bottles, display ornaments, hand fans, keychains, textiles, and fashion apparel.

For Shifa, the project also represents an effort to promote local cultural heritage. “As residents of Sidoarjo, we have a duty to preserve our local wisdom,” Shifa said.

Through ART-MATIKS, students do not merely memorize mathematical formulas; they apply them to bridge technology, creativity, and local culture. The project illustrates how STEM-based learning can drive innovation while deepening appreciation for cultural heritage.

The combination of Language Month and the co-curricular showcase demonstrates that literacy and technological fluency can advance hand in hand. The school aims to empower students to take pride in their language and culture, communicate their ideas effectively, and adapt to modern developments.***
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