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# MISI MICRO:BIT CILIK AT SK MAMBAU: UiTM'S COMMITMENT TO STEM EDUCATION

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Following the success of the Micro:bit Kick-Offs and community engagement initiatives featured in Vol. 1/2025, UiTM Negeri Sembilan continued its mission of empowering young learners through the *Misi Micro:bit Cilik* program. Organized by the Faculty of Computer and Mathematical Sciences (FSKM), this initiative was conducted in collaboration with the *Kelab Robotik*, Sekolah Kebangsaan Mambau and held across four series of workshops between May and July 2025.

The program was specially designed for a group of 35 enthusiastic robotics club members aged 10 to 12, providing them with continuous exposure to Science, Technology, Engineering, and Mathematics (STEM) through coding and robotics activities. With UiTM lecturers serving as facilitators and mentors, the program aimed not only to teach technical skills but also to inspire creativity, teamwork, and problem-solving.

## PROGRAM TIMELINE – FOUR SERIES OF LEARNING

The *Misi Microbot Cilik* program was built on a strong foundation of clear objectives. It aimed to improve students' understanding of Micro:bit applications in daily life, while at the same time building their confidence to create innovative projects. Beyond technical skills, the program promoted a culture of fun, collaboration, and creativity in learning. It also opened opportunities for students to work on projects with the potential for real-world application.

- **Series 1 – 28 May 2025:** Introduction to micro:bit, exploring inputs and outputs such as LED displays and button controls.
- **Series 2 – 2 July 2025:** Hands-on exploration of sensors and conditions, applying coding to real-world problem-solving tasks.
- **Series 3 – 16 July 2025:** Creative project development, where students combined coding blocks to design mini STEM-based solutions.
- **Series 4 – 30 July 2025 (Closing Ceremony):** Final project presentations, reflection, and a symbolic closing ceremony celebrating the students' achievements.

This step-by-step approach allowed students to gradually build confidence and mastery, while keeping the sessions engaging and fun. Each series was carefully crafted to blend theory, practice, and creativity.

Figure 1: Group photo of participants, facilitators, and teachers during the *Misi Micro:bit Cilik* program at SK Mambau, symbolizing UiTM's commitment to fostering STEM education through collaboration and innovation.

## POSITIVE OUTCOMES – BUILDING CONFIDENCE AND SKILLS

Evaluation results revealed strong evidence of the program's impact. Students showed a remarkable increase in enthusiasm to explore new knowledge, with interest scores rising from 2.0 (fair) before the program to 4.7 (good) after it concluded. Their confidence in learning with the support of teachers and friends also improved significantly. The role of facilitators proved essential in creating a supportive learning environment. Students agreed that the UiTM facilitators were approachable and patient, which encouraged them to ask questions and engage more actively in the sessions. Confidence in approaching facilitators increased from 2.0 (fair) to 4.5 (good), reflecting how the human connection enriched the overall learning experience.

Figure 2: Workshops were delivered in a highly interactive format that combined hands-on coding activities, group projects, and continuous guidance from facilitators.

Technical skills and knowledge also advanced considerably. Many students became proficient in connecting Micro:bit devices, understanding basic coding structures, and applying these skills in STEM-related contexts such as Mathematics and Science. Importantly, the program nurtured the belief among students that they could produce meaningful projects. They expressed confidence in developing school-based projects (mean score 4.2) and even believed their work had the potential for commercialization (mean score 4.3)

## EVIDENCE OF IMPACT

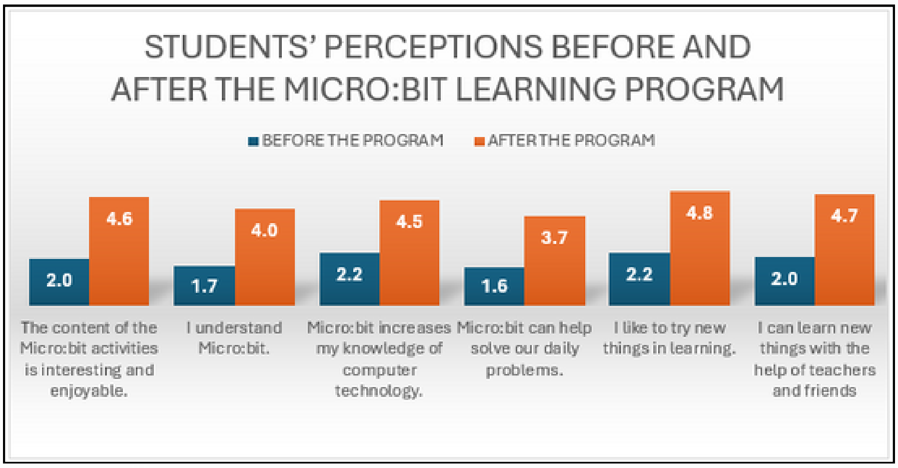


Figure 3: Student interest, confidence, and readiness to learn before and after the program, showing significant improvement across all indicators.

The figure above illustrates how the program boosted students' readiness, interest, and confidence in using Micro:bit. The sharp rise in scores highlights the effectiveness of UiTM's mentorship model in fostering both technical and soft skills among young learners.

## MOVING FORWARD – SUSTAINABILITY AND EXPANSION

The success of Misi Microbot Cilik underscores the importance of continuous engagement rather than one-off events. Recommendations drawn from the program suggest expanding the initiative to include all Level 2 (Upper Primary) students at SK Mambau, and potentially replicating it in other schools across the district. To sustain the momentum, innovation competitions or project showcases could be organized at the school and district levels, giving students a platform to demonstrate their creativity to the wider community.

Another key recommendation is the need for continuous teacher training, ensuring educators are equipped with additional modules to guide students beyond the workshops. There is also strong potential to integrate Micro:bit activities into core subjects such as Science, Mathematics, and Design & Technology (RBT), making STEM learning a natural part of the school curriculum.

## CONCLUSION

The *Misi Micro:bit Cilik* program at *Kelab Robotik*, Sekolah Kebangsaan Mambau enhanced students' creativity, confidence, and problem-solving skills, while also strengthening friendship and teamwork. UiTM Negeri Sembilan remains committed to guiding young learners towards becoming future-ready innovators.