LOCAL CHAPTERS

MATHisFUN: 240 Students Built a Learning System, Then Took It to Three Communities

IEEE SMC Malaysia Chapter · Universiti Teknikal Malaysia Melaka

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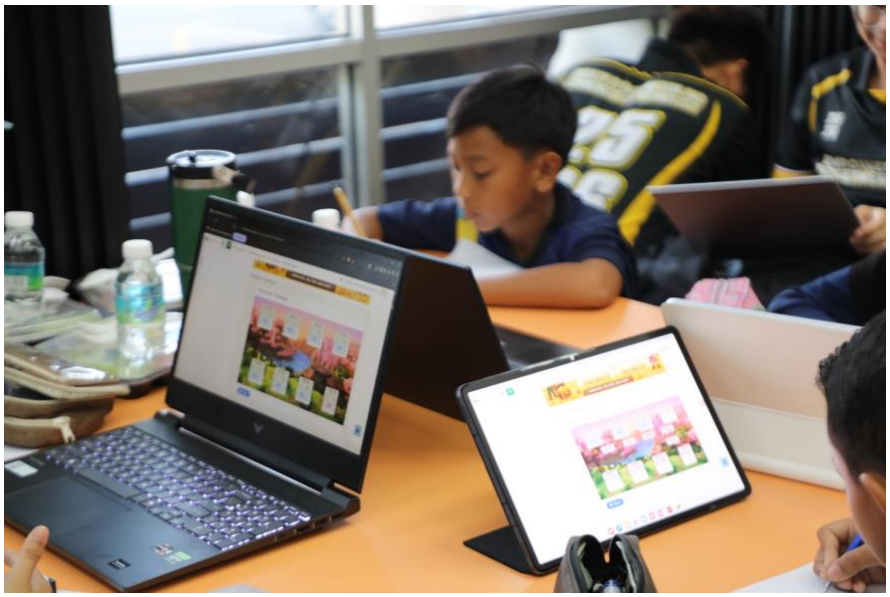
In April 2026 the IEEE Systems, Man, and Cybernetics Society awarded a Collaboration and Engagement Grant of USD 2,500 to the IEEE SMC Malaysia Chapter for **MATHisFUN**, a foundational-mathematics initiative for rural and indigenous communities in Melaka, Malaysia. The premise was deliberately uncomfortable for a first-year cohort: our students would not attend a mathematics outreach programme. They would engineer it, and then they would teach with it.

Between March and June 2026, 240 first-year Diploma in Computer Science students taking the course DITI1263 Calculus and Algebra, working in some forty teams, designed and built interactive algebra modules in H5P on UCRED, the university's Moodle platform. They worked to real requirements rather than a marking rubric: users are Year 4–6 pupils aged 10–12, all narration in Bahasa Melayu and recorded by the students themselves, graceful degradation when school Wi-Fi falters, and visible rewards — badges, digital trophies, an on-screen progression a child can see. Every module was peer-reviewed by another team before release. Module development counts as a permanent 30% of the course assessment, which is what makes the initiative renewable: the work is not volunteering that competes with coursework; it is the coursework.



Pupils exploring the MATHisFUN modules on UCRED, UTeM's Moodle platform, 23 June 2026.

On 23 June 2026, 137 primary school pupils came to campus — 51 from SK Menggong and 86 from SK Seri Machap, with their teachers and the written approval of the Melaka State Education Department. Two hundred and forty-three student facilitators ran a five-hour programme: a pre-test, guided exploration of the modules, a team-based "Algebra Champion" quiz, then a post-test and a closing ceremony with digital certificates. The facilitator-to-pupil ratio was close to two-to-one, by design.

The MATHisFUN community day, 23 June 2026: 137 pupils from SK Menggong and SK Seri Machap with their UTeM facilitators.

Seven days later the modules left the classroom. At the Melaka state-level Orang Asli Pupils' Education Carnival, held at SMK Tebong on 30 June 2026, fourteen Diploma and degree students staffed a MySTEM–MATHisFUN booth open to the public: mathematics games, live demonstrations of the platform, and mind-challenge activities for anyone walking past. This was the first time the modules met users nobody had briefed. The audited visitor log records 69 people across 49 groups — 57% Malay, 28% Chinese, 12% Indian and 4% Orang Asli, of whom 36% were children aged twelve or under and 55% teenagers. That spread is the finding: a module written for a Year 5 pupil in one rural school held the attention of teenagers and adults across four communities.

The MySTEM–MATHisFUN booth at the Melaka state-level Orang Asli Pupils' Education Carnival, SMK Tebong, 30 June 2026.

On 5 August 2026, at the invitation of Kolej Vokasional Melaka Tengah, the team exhibited at KVMT Carnival Day in Dewan Bunga Raya. The audience shifted again, this time to vocational-stream students in their late teens and their instructors — not a polite audience for a primary school module; they either pick up the tablet

or they do not. They picked it up. Each new audience found weaknesses the previous one had not, and the teams left the hall with fixes they had written themselves.

The MATHisFUN exhibit at KVMT Carnival Day, Kolej Vokasional Melaka Tengah, 5 August 2026.

A post-programme survey of the facilitators (n = 109) is the clearest signal so far. On a five-point scale, self-reported confidence rose from 3.67 to 4.39, and attitude toward mathematics itself from 3.95 to 4.35 — a shift worth noting, since these were students who had just completed a calculus course, and teaching the basics moved their view of the subject more than studying it had. The programme was rated 4.19 overall. Pupil pre- and post-tests were administered on the day and are being analysed for a follow-up report.

The USD 2,500 grant funded tablets and recording equipment for the partner schools, pupil learning kits, facilitation travel and the two public showcases, with UTeM internal allocation meeting the balance. The modules stay permanently on UCRED at no cost to the schools, and because module development is a fixed assessment component in a course that runs every year, each new cohort adds to the library without further funding.

The transferable element is the structure, not the mathematics: embed the build-and-facilitate cycle inside a compulsory course as a graded component, secure standing approval from the state education authority, and host on infrastructure the university already owns. The IEEE SMC Malaysia Chapter is glad to share the template with any chapter that would like to try it.

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