



ISTIC
INTERNATIONAL SCIENCE, TECHNOLOGY AND
INNOVATION CENTRE FOR SOUTH-SOUTH
COOPERATION UNDER THE AUSPICES OF UNESCO



BENGKEL UJI RINTIS DAN PEMURNIAN MODUL

PENDIDIKAN KECERDASAN BUATAN

Training Workshop on AI Education

13 & 14 OKTOBER 2026 | NILAI, NEGERI SEMBILAN



BACKGROUND

In our fast-paced world, where Artificial Intelligence (AI) is revolutionizing how we work, communicate, and learn, education systems face a pivotal challenge: to adapt and integrate AI into their curricula. The introduction of AI Education for Upper Primary students emerges as a vital solution, bridging the gap between traditional teaching methods and the demands of the 21st-century workforce.

Imagine a classroom where students aren't just passive recipients of knowledge but active creators and problem-solvers, equipped to navigate and shape a world driven by AI. This vision highlights a crucial need for educational transformation. Traditional methods often fall short in preparing students for the profound changes brought by AI, a central force in the Fourth Industrial Revolution. This revolution demands more than just an understanding of technology; it requires a shift towards fostering creativity, critical thinking, and ethical considerations.

United Nations and UNESCO emphasize the necessity of integrating emerging technologies into education. UNESCO's policy on Education for Sustainable Development asserts that "education must empower learners to make informed decisions and take responsible actions for environmental integrity, economic viability, and a just society" (UNESCO, 2019). Meanwhile, UN Sustainable Development Goal 4 calls for quality education that equips students with essential future-ready skills, including digital literacy and critical thinking.

To meet these evolving needs, the AI Education programme for students offers a comprehensive framework, blending traditional learning with Inquiry-Based Science Education (IBSE). This approach transforms the classroom into a dynamic environment where students explore, question, and solve real-world problems, aligning with the modern emphasis on experiential and inquiry-based learning.

AI Education provides an opportunity to introduce learners to the fundamental concepts and applications of AI through meaningful, age-appropriate and experiential learning. For Upper Primary and Lower Secondary learners, early exposure to AI concepts can help nurture computational thinking, creativity, critical thinking, problem-solving and responsible decision-making.

The AI Education Modules are designed to move beyond conventional technology-oriented learning by encouraging learners to explore concepts, investigate problems, experiment with solutions and apply knowledge through practical activities. The approach incorporates Inquiry-Based Science Education (IBSE), experiential learning, collaborative learning and project-based learning to make AI and computational concepts accessible and relevant to learners.

The modules were developed in 2024 with contributions, perspectives and practical inputs from education officers and teachers from the Ministry of Education (MOE), together with lecturers from the Faculty of Artificial Intelligence, Universiti Teknologi Malaysia (UTM) Kuala Lumpur.

The development of AI Education also recognises the importance of connecting foundational computer science concepts with real-world applications. The modules therefore provide learners with opportunities to understand AI concepts, develop computational thinking, explore coding and engage in projects that connect digital systems with the physical world. The Training Workshop on AI Education represents an important stage in taking the modules from development towards classroom readiness. It provides an opportunity to pilot the learning experiences, examine their suitability, gather feedback from educators and prospective educators, and identify areas for further refinement before subsequent implementation in schools.

Rationale

Introducing AI education in schools requires more than providing learners with access to AI technologies. Learners need opportunities to develop the underlying ways of thinking that enable them to understand, question and create with technology. At the same time, educators need practical resources and approaches that can be integrated into classroom teaching and adapted to different learner needs and contexts.

The workshop will also provide an important platform for gathering perspectives from senior students of IPGKPT and teachers from nearby schools. Their experiences and feedback can help identify strengths, challenges and opportunities for improvement, particularly in relation to classroom implementation, instructional strategies, learning resources and the suitability of the modules for Upper Primary and Lower Secondary learners.

The workshop is designed as more than a training activity. It is an opportunity to experience, examine and strengthen the AI Education Modules before they move towards wider implementation. Through practical activities, classroom simulation, reflection and structured feedback, participants will help assess whether the modules are clear, engaging, usable and appropriate for their intended learners. The insights generated will inform further refinement and validation of the modules, while providing a foundation for subsequent school-based field trials, teacher professional development and wider implementation of AI Education.

National Alignment

The AI Education Modules and the pilot exercise are positioned within Malaysia's broader direction towards AI readiness and future-oriented education. In particular, the workshop seeks to support the aspirations reflected in the **National AI Roadmap**, the **Malaysia Education Blueprint**, and the **Panduan Literasi Kecerdasan Buatan (AI Literacy Guide)**.

The **AI Literacy Guide** provides a particularly relevant reference for strengthening learners' understanding and responsible engagement with AI, while the broader national education and AI directions provide the policy context for developing future-ready competencies. The pilot workshop will therefore consider not only the educational effectiveness and usability of the modules, but also their relevance to these evolving national priorities.

Objectives:

The primary objective of AI Education is to empower students with a holistic understanding of AI, its principles, and its applications. This initiative aims to:

1. **Develop Computational Thinking:** Through unplugged activities and coding exercises, students will be introduced to programming, algorithmic thinking, and problem-solving, building the computational skills necessary to understand AI systems.
2. **Cultivate Ethical AI Awareness:** By engaging in inquiry-based discussions and scenarios, students will explore the ethical dimensions of AI, fostering critical thinking about responsible AI use and decision-making.
3. **Encourage Project-Based Learning:** With hands-on, inquiry-driven projects, students will collaborate, design, and create AI-related solutions, enhancing their creativity, teamwork, and innovation skills.
4. **Prepare for Future Careers:** Align education with emerging technology needs by building foundational AI skills, nurturing early interest in AI and STEM, and encouraging students to explore AI-related pathways, helping to establish an early pipeline of future STEM talent, particularly students passionate about AI.

AI Education Learning Approach:

1. **Conceptual Scenarios:** Students are introduced to core computer science concepts and computational thinking as a foundation for understanding Artificial Intelligence. The Conceptual Scenario explores four fundamental concepts: Machine, Algorithm, Language and Information. Through practical examples and guided exploration, students discover how these concepts are interconnected and how they contribute to the way AI systems function. The approach helps students connect abstract ideas, such as algorithms and computational languages, with practical applications, enabling them to see how fundamental computer science concepts are translated into real-world AI technologies.
2. **Unplugged Activities:** Without the need for technology, students will engage in hands-on activities that develop computational thinking and logic. Through games and collaborative exercises, they will explore algorithms, pattern recognition, and systems thinking skills that underpin AI and computer science.
3. **Coding Activities:** Moving from theory to practice, students will participate in beginner-level programming exercises, coding simple AI-based systems. These activities introduce foundational concepts such as machine learning, data processing, and decision-making algorithms in an accessible way.
4. **Cyber-Physical Project Activities:** Finally, students will apply their knowledge in project-based learning that involves creating AI-driven systems linked to the physical world. From robotics to sensors and data collection, these projects emphasize creativity and collaboration, enabling students to see AI's potential in real-world problem-solving.

OBJECTIVES OF WORKSHOP:

- To conduct pilot testing of the AI Education Modules developed in 2024 through the collaboration of educators and officers from the Ministry of Education (MOE) and Universiti Teknologi Malaysia (UTM) to evaluate their effectiveness, usability, and suitability for classroom implementation.
- To review and validate the AI Education Modules through structured discussions, classroom simulation, and practical implementation activities to identify areas for improvement.
- To refine the AI Education Modules by incorporating feedback and recommendations from educators, curriculum experts, and facilitators, ensuring that the content, learning activities, instructional strategies, assessment methods, and teaching resources meet the required quality standards.
- To ensure that the AI Education Modules are aligned with the National Curriculum, future curriculum directions, and national AI education initiatives to support their readiness for wider adoption.
- To assess the alignment and relevance of the modules with Malaysia's national directions for AI and education,

EXPECTED OUTCOMES FROM THE WORKSHOP:

- A comprehensive review of the AI Education Modules with feedback and recommendations for improvement.
- A refined and validated set of AI Education Modules incorporating enhancements to the content, learning activities, instructional design, assessment approaches, and supporting teaching resources.
- An updated digital version of the AI Education Modules that is ready for publication, and subsequent implementation.
- A set of recommendations on the implementation, scalability, and future enhancement of the AI Education Modules to support their adoption and teacher professional development programmes.

MODE OF DELIVERY

The proposed delivery methods include:

- **Interactive presentations and discussions** to introduce key AI and computer science concepts and provide opportunities for questions and dialogue.
- **Hands-on and unplugged activities** that enable participants to explore computational thinking and AI concepts through practical, device-independent experiences.
- **Coding activities** that allow participants to experiment with algorithms, programming and computational processes.
- **Cyber-physical project activities** involving the application of computational concepts to practical, real-world problems.
- **Collaborative group activities and microteaching** to encourage participants to adapt and communicate the learning experiences as they might be implemented in a classroom.
- **Reflection and educator dialogue** to capture participants' experiences, observations, challenges and recommendations for improving the modules.

TARGETED PARTICIPANTS:

A total of **60 participants** are expected to participate this programme, comprising senior IPGKPT students and teachers from nearby primary and secondary schools.

DATE & VENUE

Date : 13 & 14 October 2026

Venue: **INSTITUT PENDIDIKAN GURU
KAMPUS PENDIDIKAN TEKNIK**
Kompleks Pendidikan Nilai
71760, Bandar Enstek
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TENTATIVE PROGRAMME

13 OCTOBER 2026 (TUESDAY)	
0830 – 0900	Arrival and Registration
0900 – 0930	Introduction to Training Content and Ice Breaking
0930 – 1015	AI Fundamentals: Understanding AI Through Examples and Discussion
1015 – 1030	Coffee Break
1030 – 1130	Conceptual Scenario – Computer Science and Artificial Intelligence
1130 – 1230	Opening Welcome Remarks from IPGM/IPGKPT Welcome Remarks from ISTIC Opening Remarks from MOE Representative Group Photo
1230 – 1400	Lunch
1400 – 1615	Unplugged Activities
1615 – 1630	Coffee Break
1630	Reflection and Day 1 Review
14 OCTOBER 2026 (WEDNESDAY)	
0830 – 0845	Recap of Day 1
0845 – 1030	Coding Activities
1030 – 1045	Coffee Break
1045 – 1245	Cyber-Physical Session
1245 – 1400	Lunch
1400 – 1600	Microteaching
1600 – 1630	Evaluation and Final Reflection
1630 – 1730	Closing Closing Remarks Certificate Awarding Group Photo
1730	End of Workshop

