

**DESIGN AND DEVELOPMENT OF I-CLASS: INTERACTIVE LEARNING  
SYSTEM FOR PRIMARY SCHOOL STUDENT**



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Disusun untuk Memenuhi Syarat Menyelesaikan Pendidikan Sarjana  
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**FINAL PROJECT REPORT APPROVAL SHEET**

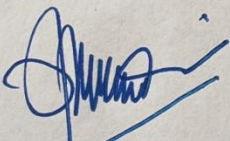
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# **ABSTRACT**

## **DESIGN AND DEVELOPMENT OF I-CLASS: INTERACTIVE LEARNING SYSTEM FOR PRIMARY SCHOOL STUDENT**

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The shift toward digital education has revealed critical gaps in traditional learning systems for primary school students, including low engagement, limited interactivity, and restricted access to learning materials. This paper presents the design and development of I-Class, an Interactive Learning System tailored to meet the cognitive and developmental needs of young learners. Grounded in constructivist learning theories and supported by educational psychology, I-Class integrates multimedia content, gamification, and adaptive learning algorithms to create a personalized, engaging learning environment. The system also empowers educators by providing tools for lesson customization, student monitoring, and performance tracking. Developed using the Agile methodology, the system's design and features were guided by quantitative user research involving students and teachers. Through iterative development and user-centered design, I-Class aims to enhance educational accessibility, inclusivity, and effectiveness in primary school settings.

*Keywords: Interactive learning system, primary education, gamification, adaptive learning, educational technology, user-centered design, Agile methodology, student engagement.*

## **ABSTRAK**

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**Oleh**

**M Fadlan Ramadhani**

**Juni 2025**

#### **Fakulti: Sains Maklumat dan Kejuruteraan**

Peralihan ke arah pendidikan digital telah mendedahkan jurang kritikal dalam sistem pembelajaran tradisional bagi pelajar sekolah rendah, termasuk tahap penglibatan yang rendah, interaktiviti yang terhad, dan akses yang terhad kepada bahan pembelajaran. Kertas kerja ini membentangkan reka bentuk dan pembangunan I-Class, sebuah Sistem Pembelajaran Interaktif yang disesuaikan untuk memenuhi keperluan kognitif dan perkembangan pelajar muda. Berasaskan teori pembelajaran konstruktivis dan disokong oleh psikologi pendidikan, I-Class mengintegrasikan kandungan multimedia, gamifikasi, dan algoritma pembelajaran adaptif bagi mewujudkan persekitaran pembelajaran yang diperibadikan dan menarik. Sistem ini turut memperkasa pendidik dengan menyediakan alat untuk penyesuaian pelajaran, pemantauan pelajar, dan penjejakan prestasi. Dibangunkan menggunakan metodologi Agile, reka bentuk dan ciri sistem ini dipandu oleh penyelidikan kuantitatif pengguna yang melibatkan pelajar dan guru. Melalui pembangunan berulang dan reka bentuk berfokuskan pengguna, I-Class bertujuan untuk meningkatkan aksesibiliti, inklusiviti, dan keberkesanan pendidikan dalam persekitaran sekolah rendah.

*Kata kunci: Sistem pembelajaran interaktif, pendidikan sekolah rendah, gamifikasi, pembelajaran adaptif, teknologi pendidikan, reka bentuk berfokuskan pengguna.*

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