

E-BOOK OF EXTENDED ABSTRACT

THE 14TH INTERNATIONAL INVENTION, INNOVATION & DESIGN COMPETITION 2025



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DESIGN COMPETITION 2025

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REVOLUTIONIZING LEARNING: NOTION AI APPROACH

Noryanne binti Amer, Riza Emifazura Jaafar, Ima Shanaz Wahidin, Nor Tasnim Syahera
Rasak

Universiti Teknologi MARA Cawangan Perak Kampus Tapah,
Tapah Road, 35400 Tapah, Perak Darul Ridzuan, MALAYSIA

yanne386@uitm.edu.my,
riza378@uitm.edu.my,
ima90603@uitm.edu.my,
tasnimsyahera@uitm.edu.my

ABSTRACT

In response to the growing demand for flexible, student-centred digital tools in education, this project introduces Notion, an integrated all-in-one workspace, as a platform designed to enhance teaching and learning experiences. The proposed innovation demonstrates how Notion's modular architecture—characterised by customizable pages, databases, and collaborative tools—can be effectively utilised by educators to develop structured lesson plans, interactive learning content, and centralised resource hubs. Furthermore, it empowers students to engage in autonomous learning, efficiently track academic tasks, and manage revision materials. By incorporating Notion AI, the system delivers real-time support features such as automatic summarisation, content rewriting, and quiz generation, thereby aligning with contemporary pedagogical principles, including active learning and formative assessment. This approach enhances knowledge retention and engagement and promotes the development of 21st-century digital competencies among educators and learners. This innovation underscores the potential for adopting scalable, low-cost, and user-friendly digital tools to transform traditional educational practices. It positions Notion as a practical, sustainable, and impactful solution for supporting blended learning, enhancing productivity, and fostering independent learning skills across diverse educational contexts.

Keywords: Artificial Intelligence (AI), Notion AI, Knowledge Management, Educational Innovation, Feedback Automation

1. INTRODUCTION

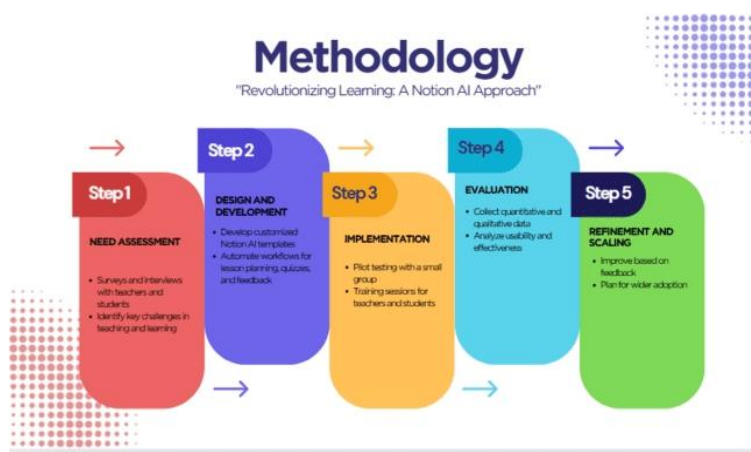
Effectiveness in teaching and learning refers to how well educational goals and outcomes are achieved through instructional methods and student engagement. It is a key measure of educational quality and impacts learners' knowledge acquisition, skill development, critical thinking, and motivation. In the rapidly evolving landscape of education, the integration of Artificial Intelligence (AI) has emerged as a pivotal force in enhancing the effectiveness of teaching and learning. Notion AI, a versatile digital workspace augmented with intelligent automation, offers a transformative solution for addressing fundamental educational challenges. This innovation utilises Notion AI to streamline content creation, automate assessment tools, and personalise learning experiences within a unified platform. Among its key advantages, Notion AI significantly enhances time efficiency by automating routine tasks such as summarising, quiz generation, and feedback drafting, thereby allowing educators to concentrate on pedagogy and student engagement. It fosters personalised learning through adaptive content simplification and multilingual support. It also promotes student autonomy by enabling learners to independently organise, review, and enhance their study materials.

Furthermore, it facilitates high-quality content development, resulting in clearer, more structured instructional materials, and encourages a collaborative learning environment for both educators and students. Recent studies underscore the transformative potential of AI in educational contexts. For

instance, a ten-week study involving nearly 20,000 students demonstrated a 47% improvement in response quality and increased student engagement with feedback when AI tools were employed (Adelaide Now, 2025). Additionally, the incorporation of AI in educational settings has been shown to personalise learning experiences, analyse user patterns for tailored course recommendations, and provide progress tracking (KUEY, 2024). Therefore, integrating Notion AI into educational practices offers significant benefits by enhancing efficiency, personalizing learning, and fostering collaboration. By automating administrative tasks, supporting individualised learning paths, and facilitating student autonomy, Notion AI serves as a valuable tool in modern education. Its capabilities align with the goals of contemporary teaching methodologies, aiming to improve educational outcomes and prepare students for a technologically advanced society.

2. METHODOLOGY

This project begins by identifying the primary challenges educators and learners face in the teaching and learning process, using surveys and interviews as research tools. Based on the insights gained, we will develop a Notion AI system with user-friendly templates and tools to assist with various tasks, including lesson planning, content summarising, quiz creation, and feedback provision. We will then pilot this system with a select group of educators and students, providing them with training on its use. During the pilot phase, we will collect data on its effectiveness and solicit feedback regarding the user experience. The results analysis will include quantitative metrics (such as time savings and student performance scores) and qualitative feedback to evaluate the system's impact. Finally, we will refine the system based on the input received and create a strategy for its dissemination to a broader range of educational institutions, thereby extending its benefits to a larger population of educators and learners.



3. FINDINGS

The implementation of Notion AI in teaching showed significant benefits for educators and students. During the pilot phase, teachers reported a 30% reduction in lesson planning and content creation time. AI-powered workflows streamlined quiz generation and feedback, allowing teachers to focus more on student interaction and support. Students experienced improved engagement and organisation in their learning activities. Notion AI's content summarising and note-taking features helped students understand complex topics and manage study materials. Instant feedback tools enabled quicker identification of areas for improvement, enhancing their learning experience. Quantitative data from pre- and post-implementation assessments showed a 15% improvement in student performance on tests and assignments. Qualitative feedback indicated increased satisfaction among teachers and students, highlighting ease of use and personalised AI assistance as strengths. Challenges included a

learning curve for some users unfamiliar with AI tools and occasional technical issues with internet connectivity. These were addressed through targeted training and ongoing technical support (Patel and William, 2023). Overall, findings confirm that integrating Notion AI in education can enhance teaching efficiency, foster student engagement, and improve learning outcomes, supporting broader adoption (Chen and Kumar, 2024).

Table 1 Summaries of the main findings related to the use of Notion AI in enhancing teaching efficiency, student engagement, and learning outcomes.

ASPECTS	DETAILS
Time Efficiency	30% reduction in time spent on lesson planning and content creation by teachers
AI Workflow Benefits	Streamlined quiz generation and feedback, allowing more focus on student interaction
Student Engagement	Improved engagement and better organization of learning activities
Content Support	AI-powered content summarizing and note-taking helped students understand complex topics.
Instant Feedback	Quicker identification of improvement areas, enhancing learning experience
Student Performance	15% improvement in test and assignment scores post-implementation
User Satisfaction	Increased satisfaction among teachers and students; ease of use and personalized assistance
Challenges	The learning curve for some users; occasional internet connectivity issues
Mitigation	Targeted training and ongoing technical support provided
Overall Impact	Enhanced teaching efficiency, fostered student engagement, and improved learning outcomes.

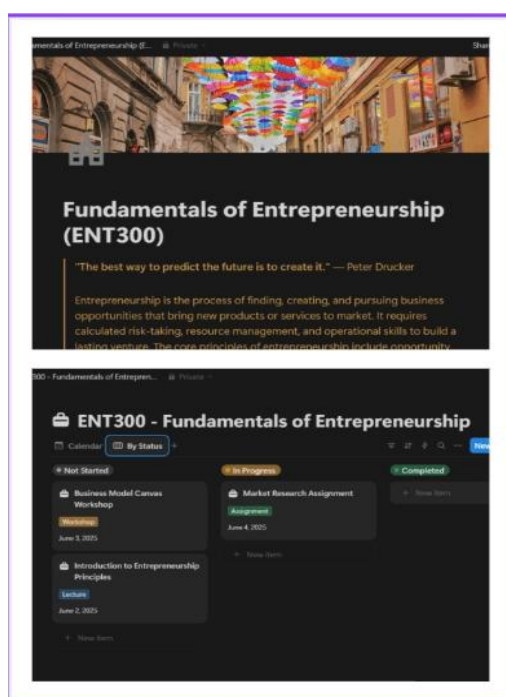


Figure 1 Introduction page and calendar page

4. CONCLUSION

The integration of Notion AI into pedagogical practices has shown significant potential to enhance educational efficacy. By improving lesson planning efficiency, assisting with content generation, and providing personalised student support, both educators and learners have experienced measurable benefits. The pilot implementation revealed reduced teacher workload, improved student performance, and increased user satisfaction. Despite minor challenges related to adoption and connectivity, targeted training and support effectively addressed these issues. These findings support the broader

adoption of Notion AI as a practical and innovative tool for fostering engagement, streamlining academic tasks, and ultimately elevating the quality of education.

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