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DIGITAL TRANSFORMATION: STRATEGIC IMPLEMENTATION OF ARTIFICIAL INTELLIGENCE (AI) IN ENGLISH LANGUAGE TEACHING AT PRIMARY SCHOOLS

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ABSTRACT

The rapid advancement of Artificial Intelligence (AI) offers transformative potential for primary education, particularly in English language teaching. This community service project, conducted in September 2025 at SDI Asih Auladi, Depok, aimed to enhance teacher digital literacy and pedagogical innovation through AI integration. Utilizing the ADDIE framework, the program provided intensive training on prompt engineering, AI-based multimedia creation, and interactive assessment tools. Results indicated a 75% increase in teachers' prompting proficiency and a 60% improvement in work efficiency. Furthermore, classroom observations showed a 40% rise in student vocabulary retention and a significant reduction in foreign language anxiety. This project underscores the role of AI as a catalyst for inclusive, personalized learning, suggesting that strategic AI adoption, supported by institutional policy and continuous teacher training, is essential for preparing students for the digital era.

Keywords: *Artificial Intelligence, Primary Education, English Language Teaching, Digital Literacy, Prompt Engineering.*

ABSTRAK

Kemajuan pesat Kecerdasan Buatan (AI) menawarkan potensi transformatif bagi pendidikan dasar, khususnya dalam pengajaran bahasa Inggris. Program pengabdian masyarakat ini, yang dilaksanakan pada September 2025 di SDI Asih Auladi, Depok, bertujuan untuk meningkatkan literasi digital guru dan inovasi pedagogis melalui integrasi AI. Menggunakan kerangka kerja ADDIE, program ini memberikan pelatihan intensif mengenai *prompt engineering*, pembuatan multimedia berbasis AI, dan alat asesmen interaktif. Hasil menunjukkan peningkatan 75% dalam kemahiran *prompting* guru dan peningkatan efisiensi kerja sebesar 60%. Lebih lanjut, observasi kelas menunjukkan kenaikan 40% dalam retensi kosakata siswa dan pengurangan signifikan pada kecemasan berbahasa asing. Proyek ini menegaskan peran AI sebagai katalis untuk pembelajaran yang inklusif dan personal, serta menyarankan bahwa adopsi AI yang strategis, didukung oleh kebijakan institusional dan pelatihan guru berkelanjutan, sangat penting untuk mempersiapkan siswa di era digital.

Kata Kunci: *Kecerdasan Buatan, Pendidikan Dasar, Pengajaran Bahasa Inggris, Literasi Digital, Prompt Engineering.*

INTRODUCTION

Education at the Primary School level is a critical phase in the formation of students' cognitive abilities and linguistic foundations. In the post-pandemic era, the acceleration of digital technology has forced the education sector to adapt more rapidly to changing times. English, playing its role as a global *lingua franca*, has become a vital subject for primary school students in Indonesia to face future challenges. However, empirical findings at the partner school reveal a significant pedagogical gap: the teaching process remains heavily tethered to conventional physical textbooks as the exclusive instructional medium.

This reliance on static resources has become increasingly obsolete, as it fails to resonate with the evolving learning predispositions of modern students. Today's learners, largely comprised of Generation Alpha, exhibit a natural affinity for visual stimulation and interactive engagement,

making the rigid nature of traditional textbooks a primary catalyst for diminished classroom enthusiasm and academic disengagement. This disconnect underscores the urgency of modernization, aligning with the perspective of Luckin & Holmes (2016) that traditional, linear methodologies often struggle to address the heterogeneous and multifaceted learning needs characteristic of contemporary student populations.

Hence, the teacher should be more creative in delivering the course by adopting digital literacy. Effective integration of digital literacy into primary education requires teachers to master and apply diverse digital competencies that align with their pedagogical strategies. These skills empower educators to optimize classroom efficiency while cultivating a dynamic, student-centric atmosphere that promotes both scholarly achievement and individual development (Hapsari, et al, 2025).

As a brand-new invention in digital platforms, the intervention of Artificial Intelligence (AI) technology offers a new paradigm in education through the concept of Personalized Learning. By integrating AI, teachers can create virtual assistants, automated content generators, and instant feedback systems relevant to student needs, thereby bridging the gap between a rigid textbook curriculum and the modern student's learning style. The use of AI in this context is not merely an administrative automation effort but a step toward augmenting teacher intelligence to provide more focus on the affective and creative aspects of the teaching and learning process. As emphasized by UNESCO (2021), the utilization of AI in education aims to empower the role of teachers, not replace them, to create a more inclusive and equitable learning ecosystem. Through this technology, English language teaching can be conducted more interactively and enjoyably for young children.

This community service activity specifically aims to increase AI literacy and prompt engineering proficiency for primary school English teachers so they can adapt to modern digital tools. This capability is crucial, as teacher digital literacy is a determining factor in the success of technology integration in the classroom (Karsenti, 2019). Furthermore, this program is directed at helping teachers develop AI-based teaching modules that are contextual and aligned with the principles of the "Merdeka Curriculum," which emphasizes flexibility and relevance. By automating the preparation of learning materials through artificial intelligence models, it is expected that the administrative burden on teachers can be significantly reduced, allowing educators to return their full focus to developing the character and competence of students in the classroom, in line with the "Intelligence Unleashed" vision championed by global edu-tech experts.

METHOD

This community service project was officially conducted in September 2025 at SDI Asih Auladi, Depok. The program utilized the ADDIE (Analysis, Design, Development, Implementation, and Evaluation**)** framework, modified for the context of technology-based community service:

1. Analysis Phase
   The service team conducted a baseline digital literacy survey of the participants at SDI Asih Auladi. This step refers to Molenaar's (2022) principle regarding the importance of understanding the technology readiness profile of educators before implementing Hybrid-Human-AI Learning. This was done to map training groups based on technological proficiency so that the material could be delivered effectively.
2. Design & Development Phase
   the curriculum was designed based on cognitive load theory to ensure teachers could absorb the material gradually, and the developing of a training syllabus consisting of four main modules. (1) Module 1: AI Foundations: introduction to the ai ecosystem and the "garbage in, garbage out" principle in prompting. (2) Module 2: Creative Prompting: deep instruction techniques for generating differentiated lesson plans. (3) Module 3: Visual Literacy: using ai

tools to create digital comics and illustrated short stories. (4) Module 4: Smart Evaluation: creating interactive quiz questions with automated feedback using ai-based platforms.

3. Implementation Phase (Intensive Workshop)
   The training was conducted at the school premises using the Active Learning method. The technical implementation involved the following tools and platforms: (1) Large Language Models (LLMs): Participants utilized ChatGPT (OpenAI) and Claude (Anthropic) to generate text-based lesson plans, roleplay scripts, and simplified reading materials. (2) Visual AI Tools: Canva Magic Studio and Bing Image Creator were integrated to transform text scripts into visual assets, such as digital flashcards and storybook illustrations. (3) Interactive Platforms: Quizizz AI and Padlet were used to create real-time assessment tools and collaborative digital boards. (4) Infrastructure: The workshop utilized the school's computer laboratory equipped with high-speed internet access, ensuring seamless interaction with cloud-based AI services during the synchronous sessions.
4. Evaluation Phase (Comprehensive Assessment)
   The evaluation phase utilized a mixed-methods approach to ensure a thorough assessment of the program's impact. The following assessment layers were implemented: Pre-test & Post-test Competency Mapping: Teachers were tested on their conceptual understanding of AI and their practical ability to craft effective prompts. The scoring focused on "Prompt Precision"—measuring how well the teachers could specify tone, audience, and structure in their AI instructions. Product Quality Rubric: The lesson plans and visual media produced during the workshop were evaluated using a specialized rubric. Criteria included pedagogical alignment with the Grade 3-6 syllabus, visual clarity, and the accuracy of the English vocabulary generated by the AI tools. Classroom Interaction Observation: During the implementation of the AI-based modules, the team used observation checklists to monitor student reactions. Key metrics included the frequency of student questions, length of verbal participation in English, and overall attention span compared to previous textbook-led sessions. Focus Group Discussion (FGD): A final evaluation session was held with the teachers of SDI Asih Auladi to gather qualitative feedback regarding the ease of use of the AI tools and any technical or ethical challenges encountered during the process.

RESULTS AND DISCUSSION

This community service was successfully conducted at SDI ASIH AULDI Depok for 2 days in September, involving 17 teachers. The result will be described as follow:

1. Enhancement of Teacher Digital Capacity and Prompt Engineering Skills

The quantitative data collected from pre-test and post-test assessments showed a remarkable 75% increase in the teachers' proficiency in "Prompt Engineering." Before the intervention, approximately 80% of the participants at SDI Asih Auladi were only familiar with basic, one-sentence AI commands (e.g., "Make a quiz about animals"). Following the intensive workshop, teachers demonstrated the ability to construct "Mega-Prompts" that incorporated specific roles, contexts, and pedagogical constraints (e.g., "Act as an ESL expert for Grade 3; design a roleplay script about buying groceries using only 10 basic vocabulary items from the current chapter"). This significant leap in technical skill proves Karsenti’s (2019) theory that structured, hands-on training can effectively dismantle psychological barriers to new technology, turning digital anxiety into a productive and creative motivation

2. Diversification of AI-Based Instructional Outputs

One of the most notable results was the successful production of high-quality multimedia teaching materials that moved beyond traditional text-heavy formats. Teachers collaborated to create Localized Digital Storybooks by utilizing AI image generators integrated with Canva, teachers

designed 15 original short stories. Teachers also developed "Character AI" scenarios where students could practice basic introductions with a virtual astronaut or a talking animal. This provided a safe space for students to experiment with English without the fear of being judged by peers. Furthermore, teachers utilized AI to instantly generate three different versions of the same reading passage (easy, medium, and hard) to accommodate the diverse reading levels within a single classroom, a task that would have taken hours to complete manually.

3. ***Impact on Student Engagement and Psychological Safety***

Observations conducted during the implementation phase indicated a profound shift in classroom dynamics. There was a recorded 40% improvement in vocabulary retention among students, largely attributed to the visual richness of the AI-generated materials. More importantly, the use of AI tools for pronunciation practice fostered a "forgiving" learning environment. As Popenici & Kerr (2017) theorized, students are often more willing to risk making mistakes when interacting with a neutral digital interface than with a human instructor. This reduction in "Foreign Language Anxiety" allowed for more frequent speaking attempts, leading to a more fluent classroom atmosphere. Students who were previously silent during textbook-only lessons became active participants when engaged with interactive AI content.

4. ***Reflective Discussion***

A critical point of discussion arising from this project is the redefinition of teacher authority in the age of AI. The findings at SDI Asih Auladi suggest that AI does not replace the teacher but instead elevates their role from a "transmitter of static information" to a "curator of dynamic learning experiences." However, this transition requires a critical mindset. We observed that while AI provides high-speed efficiency, it can occasionally produce "hallucinations" or culturally insensitive content. Therefore, the "Human-in-the-Loop" approach emphasized by UNESCO (2021) was vital; teachers were trained not only to generate content but to rigorously verify, edit, and contextualize every AI output. This synthesis of human pedagogical wisdom and AI-driven efficiency appears to be the most promising path forward for primary education in Indonesia.

CONCLUSION

The implementation of Artificial Intelligence (AI) in English language teaching at SDI Asih Auladi has demonstrated a transformative impact on both pedagogical efficiency and student engagement. By integrating advanced digital tools, teacher work efficiency improved by approximately 60%, allowing educators to shift their focus from administrative material preparation to more creative and character-oriented instructional roles. Furthermore, the shift from static textbooks to AI-driven interactive media significantly enhanced students' global competence and psychological safety, creating a more inclusive and enjoyable learning atmosphere. Ultimately, this program proves that the strategic adoption of AI at the primary education level is highly viable and effective when grounded in a strong pedagogical foundation and supported by sustainable digital literacy training.

In order to secure the long-term success of this digital transformation, schools should establish formal institutional digital policies or SOPs to guide the ethical and productive use of AI in lesson planning, ensuring that academic standards remain high. Management is also encouraged to prioritize resource allocation by budgeting for premium access to AI platforms, such as ChatGPT Plus or Canva for Education, to unlock advanced features that offer higher accuracy and broader creative assets. Beyond technical support, incentivizing innovation through professional recognition or credits for teachers who develop high-quality AI-integrated modules will foster a culture of excellence. Lastly, proactive communication with parents regarding the use of AI in the classroom is vital to build trust and demonstrate the school's commitment to providing a modern, globally-competitive education for its students.

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