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Brunei Country Report

Track 1: The Helm – Teacher-led Pedagogy & Learning Design

Steered by Teachers, Propelled by AI: Teacher-Led Learning Design for Future-Ready Writers

Strengthening Writing, Digital Literacy and Cross-Cultural Learning in a Brunei Primary School

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Abstract

This paper presents the implementation and impact of the AI-Enhanced E-Writing Initiative at Sekolah Rendah Sengkurong, Brunei Darussalam. Developed to address gaps in writing proficiency, learner engagement, and digital literacy, the initiative integrated artificial intelligence (AI) into authentic writing, digital citizenship, and cross-cultural collaboration. Implemented in three phases, the initiative progressed from exploring AI-supported pedagogy in 2025 to embedding sustainable school-wide practices in 2026 and optimising, scaling and leading in 2027. Students engaged in collaborative e-book writing, AI-assisted feedback, authentic publication, and international partnerships, while teachers strengthened their practice through professional learning, peer mentoring, and the PDCA improvement cycle. Parents and community partners supported the initiative through AI workshops and cybersecurity awareness programmes. Findings indicate positive outcomes across multiple stakeholder groups. Students improved in writing, collaboration, digital participation, and responsible AI use; teachers enhanced their pedagogy and AI integration; and parents became more engaged in supporting learning. At the organisational level, the initiative became embedded in the curriculum and school-wide literacy programmes, establishing a sustainable and transferable model. The findings suggest that meaningful AI integration is most effective when guided by purposeful pedagogy, ethical practice, authentic learning, and strong stakeholder collaboration. The initiative offers a practical framework for schools seeking to develop future-ready learners through sustainable educational innovation.

1. Introduction

Artificial intelligence (AI) is reshaping education by creating new opportunities and challenges for preparing future-ready learners. Effective AI integration depends on strong teacher leadership, purposeful pedagogy, and authentic learning rather than technology alone. This paper examines how a Brunei primary school translated national educational priorities into teacher-led classroom practice by integrating AI, digital literacy, and cross-cultural learning to enhance students' writing and future-ready competencies.

1.1 National Educational Context

Brunei Darussalam's education system is guided by the aspirations of Wawasan Brunei 2035 (Brunei Darussalam, 2008), which envisions a well-educated, highly skilled, and values-driven population. Education plays a vital role in achieving this vision by preparing learners to contribute to national development and thrive in an increasingly interconnected world. Over the past decade,

educational reforms have focused on enhancing teaching quality, curriculum relevance, student learning outcomes, and the meaningful integration of digital technologies, while continuing to emphasise character development, lifelong learning, and strong moral values. These priorities are reflected in the Ministry of Education Strategic Plan 2023–2027 (Ministry of Education, 2023), which provides the direction for educational improvement through three interconnected goals: nurturing future-ready learners, enhancing an innovative education ecosystem, and strengthening human resource capacity through high-quality teaching and educational leadership. Recognising that teacher quality is fundamental to student success, schools have access to professional learning opportunities such as instructional coaching, collaborative professional learning communities, leadership development programmes, and school-based improvement initiatives. Together, these initiatives strengthen pedagogical practice, instructional leadership, and professional collaboration, enabling schools to translate national priorities into meaningful classroom practice.

1.2 National Strategies for School Improvement

A range of national initiatives supports continuous school improvement by strengthening student learning, teacher professional practice, and instructional leadership. At the student level, literacy and digital learning are promoted through programmes that develop foundational literacy skills, encourage positive reading habits, and foster meaningful engagement with digital technologies. Teachers have access to professional learning through cluster-based professional development, the Literacy and Numeracy Coaching Programme (LNCP), the Brunei Darussalam Leadership and Teacher Academy (BDLTA), and school-based improvement initiatives. These programmes promote professional collaboration, reflective practice, and continuous improvement in classroom pedagogy. School leaders participate in leadership development programmes, symposiums, and professional networks that strengthen instructional leadership, support evidence-informed school improvement, and encourage shared responsibility among school stakeholders. Together, these initiatives foster a culture of collaboration, instructional leadership, and continuous improvement across Brunei's primary schools.

1.3 School Context and Strategic Alignment

Sekolah Rendah Sengkurong is more than a primary school—it is a learning community where innovation, collaboration, and continuous improvement are embedded in everyday practice. The school serves approximately 550 students with a dedicated team of 49 teachers and 14 support staff who share a common vision of preparing learners for an increasingly complex and

interconnected world. Driven by instructional leadership and evidence-informed practice, the school enriches classroom learning through authentic experiences, responsible AI integration, digital literacy, and cross-cultural collaboration. These approaches not only enhance students' academic achievement but also develop the communication, creativity, critical thinking, collaboration, and ethical values needed to become confident, future-ready learners. The school's vision, *"Independent, Resilient and Values-Driven,"* and its mission, *"To provide quality and holistic education that empowers every student to succeed,"* reflect its commitment to holistic learner development. As shown in Table 1**,** the AI-Enhanced E-Writing initiative is closely aligned with the school's strategic priorities and with national and international educational frameworks, demonstrating how these priorities are translated into meaningful classroom practice.

EDUCATIONAL PRIORITIES	FRAMEWORKS	TRANSLATION INTO CLASSROOM PRACTICE
Global Goals: SDG4	**SDG 4** • inclusive and equitable quality education • lifelong learning for all.	Inclusive, AI supported writing & lifelong learning.
National literacy initiatives	**BDLNNS** Highly numerate and literate in the English language.	Strengthen English literacy through structured writing and feedback.
MOE's Strategic Plan 2023 – 2027:	**Goal 1:** Nuture Future ready learners **Goal 2:** Enhance Innovative Education Ecosystem.	Stronger learning outcomes, digital skills, and innovative teaching.
Align with Vision 2035	Well-educated and highly skilled people	Globally ready, confident communicators.

Table 1. *Alignment of the AI-Enhanced E-Writing Initiative with National and International Educational Priorities.*

Guided by these national priorities, the school's strategic goals focus on strengthening digital literacy and critical thinking, promoting collaborative and experiential learning, and building leadership capacity through mentorship and professional collaboration. Together, these goals shape teacher-led learning design and continuous school improvement. Building on this strategic direction, Sekolah Rendah Sengkurong embarked on a three-phase school improvement journey that integrated purposeful AI use, digital literacy, and cross-cultural learning to strengthen students' writing and develop the competencies needed for the future. The following sections

describe how these priorities were translated into meaningful classroom practice through teacher-led pedagogy.

2. Teacher-Led Learning Design

The school's improvement journey was driven by the belief that effective learning begins with purposeful pedagogy rather than technology. Teachers remained at the centre of planning, facilitating, and assessing learning, while artificial intelligence (AI) was introduced as a tool to enhance feedback, creativity, and student engagement. This chapter describes how Sekolah Rendah Sengkurong identified the need for improvement and designed a teacher-led learning approach that strengthened writing, digital literacy, and cross-cultural learning.

2.1 Identifying the need for improvement

The school's improvement journey began with a careful analysis of student learning data. Results from the 2024 English Student Learning Survey (SLS) and Lexile assessments highlighted persistent gaps in English literacy, particularly in writing proficiency, reading achievement, and authentic student engagement. These findings indicated that many students required greater support in developing writing skills, receiving timely and meaningful feedback, and applying their learning in authentic contexts. As illustrated in Figure 1, only 41.36% of Year 2 to Year 6 students achieved Tier 1 (Green) in the 2024 English Student Learning Survey, while 58.64% remained in Tier 2 (Amber) and Tier 3 (Red), indicating that more than half of the students had yet to reach the expected level of English proficiency. Similarly, the 2024 Lexile assessment recorded an overall average score of 330.8, with an achievement rate of only 42.8% across 417 Year 2 to Year 6 students. Year 4 recorded the lowest achievement rate (36%), while Year 6 demonstrated comparatively stronger performance (65.59%). Overall, these findings reinforced the need for a more systematic approach to strengthening literacy and writing instruction across the school. Rather than focusing solely on improving writing outcomes, the school viewed writing as a meaningful context for developing broader future-ready competencies. Guided by evidence that effective writing develops through authentic practice and timely feedback (Graham, 2019), the school designed a teacher-led learning approach that combined purposeful AI integration with digital literacy, ethical AI use, collaboration, and authentic cross-cultural learning. Beyond improving students' writing, the initiative sought to strengthen critical thinking, creativity, communication, collaboration, character, and citizenship—the six competencies that underpin future-ready learning.

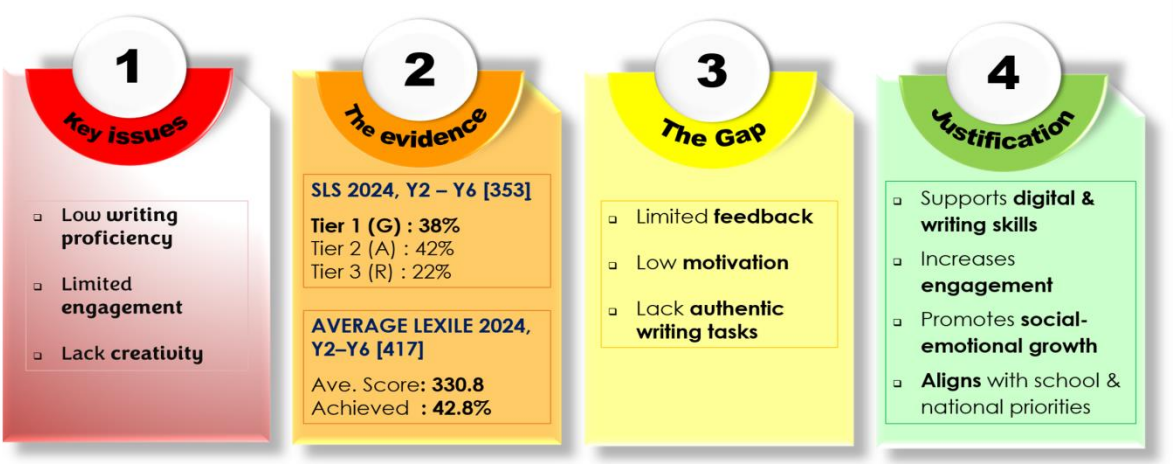


Figure 1. *Student Learning Survey and Lexile Assessment Results 2024.*

2.2 Purposeful integration of AI

Artificial intelligence (AI) was introduced not as an end in itself, but as a purposeful tool to enhance teaching and learning. The decision to integrate AI was guided by identified instructional needs rather than technological trends. Teachers recognised its potential to provide timely and personalised feedback, support differentiated learning, stimulate creativity, and increase student engagement across learning areas. More importantly, AI complemented rather than replaced teacher expertise. Teachers remained responsible for designing learning experiences, scaffolding learning, monitoring students' progress, and guiding reflection, while AI served as a pedagogical tool that enriched classroom instruction and encouraged active student participation. This approach strengthened teachers' instructional practices while helping students develop confidence, independence, digital literacy, and the responsible use of AI in authentic learning contexts.

Although writing served as the central learning context, the pedagogical principles were transferable across subjects. Beyond the writing initiative, teachers integrated AI-generated images and short videos into lessons such as Mathematics and Bahasa Melayu to activate students' prior knowledge, stimulate curiosity, and establish meaningful connections with new concepts. These visual prompts supported questioning, discussion, vocabulary development, prediction, and problem-solving before the main learning activities, making lessons more engaging, interactive, and relevant (Figures 2 and 3).

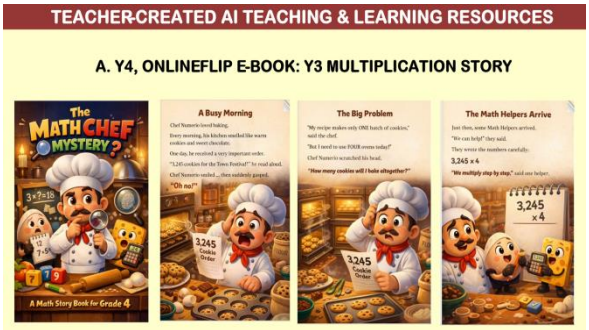


Figure 2. *AI-generated image used to activate prior knowledge at the beginning of a writing lesson.*



Figure 3. *AI-generated video used as a lesson starter to stimulate discussion and idea generation.*

2.3 Designing the learning experience

The learning experience placed teachers at the centre of the writing process while using AI purposefully to enhance learning. As illustrated in Figure 4, teachers planned authentic writing tasks, modelled effective writing strategies, and guided students through drafting. AI provided immediate, personalised feedback to help students generate ideas, improve vocabulary, refine sentence structures, and review their work. Students also received explicit instruction in digital citizenship, responsible AI use, online safety, and respectful online communication, reflecting recognised principles of digital citizenship (Ribble, 2015; ISTE, 2016). Peer feedback and teacher conferencing further supported revision and reflection before students published collaborative digital e-books for authentic audiences through cross-cultural learning. Throughout the process, students developed confidence, independence, digital literacy, collaboration, critical thinking, and ethical AI practices.

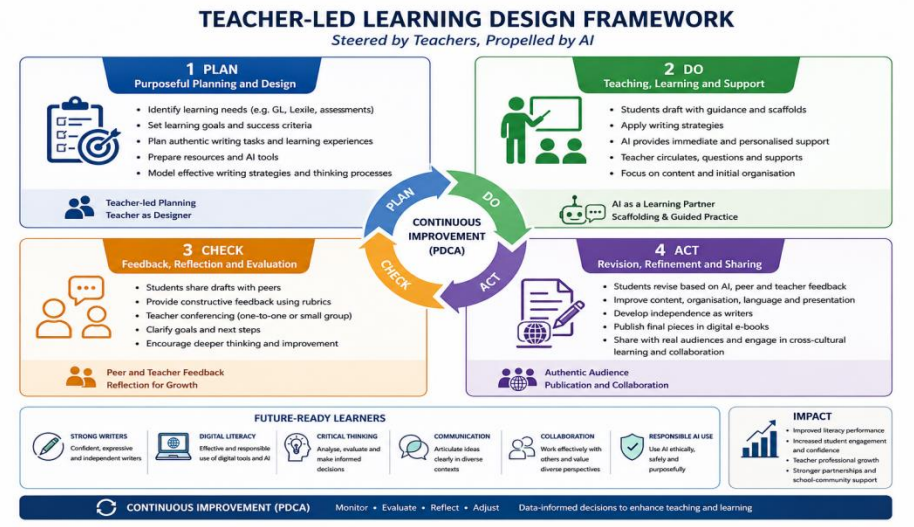


Figure 4. Teacher-Led Learning Design Framework for AI-supported writing.

2.4 Beyond Writing: Developing Future-Ready Learners

The initiative extended beyond improving writing proficiency to develop holistic, future-ready learners. Through authentic writing and real-world learning, students strengthened literacy alongside creativity, critical thinking, communication, collaboration, confidence, and self-expression. AI was integrated across English Language, Bahasa Melayu, Melayu Islam Beraja, and whole-school literacy initiatives, while explicit instruction in digital literacy, ethical AI use, and digital citizenship helped students evaluate AI-generated information critically, uphold academic integrity, protect personal data, and communicate responsibly online. These efforts were reinforced through digital ethics lessons, pre- and post-assessments, and cybersecurity awareness sessions for parents conducted in collaboration with BruCERT. The 2026 enhancement expanded the initiative through multimedia e-books featuring narration, videos, QR codes, and digital storytelling, as well as collaborative e-book projects with partner schools in Malaysia. These authentic learning experiences strengthened students' confidence, teamwork, cultural awareness, empathy, and responsible digital practices while preparing them to become confident, ethical, digitally literate, and globally aware learners.

3. From Innovation to Sustainable Practice

The initiative was deliberately designed as a progressive journey rather than a one-off innovation. It began by exploring new approaches to teaching and learning before gradually embedding proven practices into everyday classroom routines. This phased approach ensured that innovation was evidence-based, sustainable, and capable of creating long-term impact across the school.

3.1 Phase 1 (2025): Exploring and Validating Innovation

The first phase focused on introducing digital and AI-supported writing practices to enhance students' writing experiences. During this exploratory stage, emphasis was placed on pedagogical innovation, learner engagement, and the responsible use of digital technologies. Consistent with UNESCO's (2023) guidance on the responsible use of generative AI in education, the project adopted AI as a learning support tool rather than a replacement for student thinking. The implementation also sought to validate that integrating AI into teaching and learning enhanced students' writing without compromising academic achievement. Evidence gathered throughout the year provided confidence that the innovation was practical, beneficial, and suitable for wider implementation.Building on the positive outcomes and lessons learnt during the first phase, the

initiative progressed beyond experimentation towards a more systematic and sustainable model of implementation. Rather than introducing new activities, the focus shifted to strengthening governance, consistency, quality assurance, and continuous improvement to ensure that successful practices could be sustained and expanded.

3.2 Phase 2 (2026): Sustaining and Institutionalising Effective Practice

The second phase focused on embedding effective AI-supported practices into routine teaching and learning. Ethical AI governance, baseline assessment, data triangulation, and a structured PDCA cycle supported evidence-informed decision-making and continuous improvement. Cross-border collaboration expanded through partnerships with new and continuing cohorts, providing authentic global learning while reinforcing responsible digital citizenship. The initiative evolved from a successful project into sustainable school practice by institutionalising effective pedagogy, strengthening teacher capacity, and embedding continuous improvement. Innovation became part of the school's culture rather than a standalone initiative. School showcases and professional sharing sessions officiated by the Head of the Brunei Darussalam Leadership and Teacher Academy (BDLTA) further demonstrated the model's transferability and supported professional feedback (Figure 5). To sustain innovation, AI was embedded into routine professional practice through hands-on learning, including AI creativity competitions, PLC-based AI clinics, and collaborative lesson design. As teachers' confidence grew, AI integration expanded beyond English into Mathematics, Bahasa Melayu, MIB, health education, National Day celebrations (Figure 6), anti-smoking and anti-vaping campaigns (Figure 7), anti-bullying initiatives, and digital citizenship programmes.



Figure 5. The SIP showcase 2025



Figure 6. *Student-designed AI-generated poster*



Figure 7. *AI-generated anti-smoking and anti-vaping awareness poster created by a teacher*

3.3 Phase 3 (2027): Optimising, Scaling and Leading

The third phase focuses on optimising and scaling the initiative through longitudinal evidence, school-wide implementation, and stronger student digital leadership. By embedding continuous improvement and sharing effective practices, the school positions itself as a model for sustainable and future-focused educational innovation.

4. Evidence of Impact

Findings were drawn from multiple sources of evidence, including pre- and post-assessments, surveys, classroom observations, student learning logs, and teacher reflections, enabling data triangulation across stakeholder groups. This comprehensive approach provided a robust basis for evaluating the impact of the initiative on students, teachers, parents, and whole-school practices.

4.1 Developing Future-Ready Learners

The initiative transformed students into more active, collaborative, and independent learners. Across Years 4, 5, and 6, students demonstrated greater collaborative engagement, task commitment, digital participation, and help-seeking behaviours. As illustrated in Figure 8, students worked together to draft, edit, and refine their writing using AI-supported digital tools. Although the control group maintained good academic performance, the SIP group showed greater overall improvement, demonstrating the added value of the intervention beyond regular classroom instruction. Students also developed digital literacy, responsible AI use, cross-cultural awareness, and authentic learning through e-book publication and international collaboration. Figure 9 presents a sample of the collaborative digital e-books produced by students for authentic audiences. While confidence levels declined slightly after the project, this likely reflected greater self-awareness as students engaged in more challenging learning experiences rather than reduced competence.



Figure 8. *AI-assisted writing activity.*



Figure 9. *Sample page from a student-created multimedia e-book.*

4.2 Strengthening Teacher Capacity and Pedagogical Practice

The initiative strengthened teachers' professional capacity by increasing confidence in AI integration, promoting innovative pedagogy, and enhancing instructional quality. AI-supported teaching became established classroom practice, with 90.91% (10/11) of English Language teachers and 97.62% (41/42) of observed teachers demonstrating purposeful AI integration. Teachers also became more reflective and collaborative through PLCs (figure 11), peer mentoring, and shared lesson design, contributing to more engaging and student-centred learning experiences. These improvements were reflected in TPA observations (figure 10), where the number of teachers achieving Grade 4 (Excellent) increased from 11 to 16 in ICT Skills and from 22 to 36 in Whole-Class Engagement.



Figure 10. *Teacher-led integration of an AI-generated video during a TPA observation.*



Figure 11. *Teachers are participating in a hands-on AI professional learning workshop.*

4.3 Institutionalising Sustainable Innovation

The initiative progressed beyond a classroom innovation to become an embedded whole-school practice. AI-supported learning was integrated into the curriculum, library programmes, literacy campaigns, and everyday teaching, while ethical AI practices and digital citizenship became part of routine learning experiences. The project also strengthened internal capacity through teacher expertise, peer mentoring, structured monitoring, and continuous improvement. Supported by freely accessible AI tools, reusable resources, community partnerships, and cross-border collaboration, the initiative established a scalable, transferable, and sustainable model that can continue to benefit future cohorts of learners. Figure 12 illustrates how the eight interconnected components work together to sustain the initiative beyond its initial implementation. By integrating pedagogy, authentic learning, teacher development, community partnerships, and publication opportunities, the model ensures that innovation is embedded into everyday school practice and can be adapted and transferred to other educational contexts.



Figure 12. *Sustainable Innovation through Synergy: Key Components Supporting Whole-School Institutionalisation and Sustainability*

4.4 Enhanced Parent Engagement and Support

The initiative strengthened parents' engagement as active partners in their children's learning. Through AI workshops, cybersecurity awareness sessions, and student showcase activities, parents gained a better understanding of responsible AI use, digital safety, and their children's learning progress. They recognised the benefits of AI-supported learning in enhancing creativity, writing skills, and digital literacy, while developing greater confidence in supporting learning at home. Notably, 97.6% of parents strongly agreed that the programme should continue, reflecting strong parental support and confidence in its positive impact on student learning.

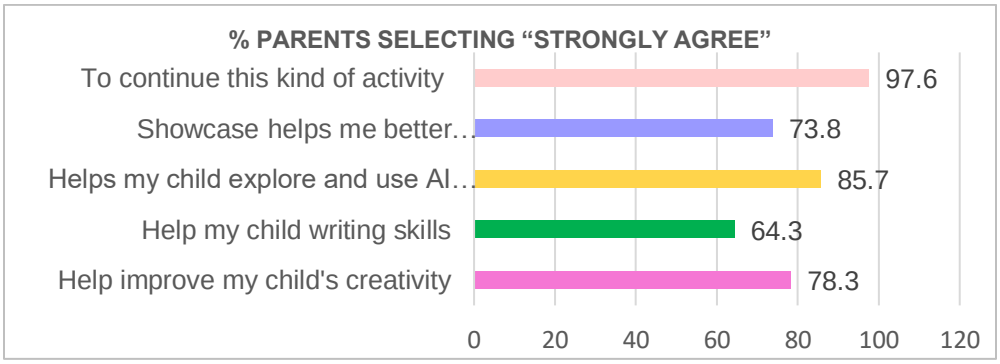


Chart 1. *Parents' Perceptions of the Impact of the AI-Enhanced E-Writing Initiative (n = 42)*



Figure 13. *Parents Engaging in the 2026 AI Workshop*

5. Key Implementation Insights

The implementation of the initiative generated valuable insights that strengthened both the project and the school's approach to sustainable educational innovation. These insights informed continuous refinement throughout the implementation process and provide a strong foundation for future improvement.

5.1 Purposeful Pedagogy Maximises the Impact of AI

The initiative demonstrated that AI is most effective when integrated within purposeful teaching rather than used as a standalone technology. Students achieved better learning outcomes when teachers guided AI use through timely feedback, questioning, and creative learning experiences, ensuring that pedagogy remained student-centred.

5.2 Responsible AI Use Requires Explicit Instruction

The implementation highlighted that students cannot be expected to develop responsible AI practices independently. Embedding digital ethics, cybersecurity awareness, academic integrity, and responsible AI use into everyday classroom activities proved essential for developing safe, ethical, and digitally literate learners.

5.3 Authentic Collaboration Enhances Learning

Partnerships with parents, community organisations, and partner schools in Malaysia enriched learning by providing authentic audiences and meaningful contexts for writing. These experiences increased students' motivation, strengthened communication skills, and fostered greater appreciation of cultural diversity.

5.4 Whole-School Ownership Supports Sustainability

The initiative demonstrated that sustainable innovation depends on collective commitment rather than individual effort. Leadership support, teacher collaboration, professional learning communities, structured monitoring, and the PDCA cycle were instrumental in embedding effective practices into routine school operations.

5.5 Continuous Reflection Strengthens Implementation

Regular analysis of student data, stakeholder feedback, and reflective practice enabled the school to make timely improvements throughout the project. This evidence-informed approach ensured that implementation remained responsive, effective, and sustainable while continuously enhancing teaching and learning.

6. Implications for Practice

The findings of this initiative suggest that effective AI integration should be driven by purposeful pedagogy rather than technology alone. Educators should design authentic, student-centred learning experiences that encourage creativity, critical thinking, communication, collaboration, and responsible AI use, enabling students to develop the competencies required for lifelong learning in a rapidly evolving digital world. The findings also reinforce the importance of embedding AI, digital citizenship, and experiential learning into everyday classroom practice rather than treating them as standalone initiatives. Continuous professional learning, collaborative planning, and reflective teaching should be prioritised to support teachers in integrating AI meaningfully and ethically across the curriculum. At the school level, sustainable innovation requires strategic leadership, evidence-informed decision-making, and strong partnerships with parents, the community, and external organisations. Schools should establish systems that promote continuous improvement, monitor implementation, and institutionalise successful practices so that innovation becomes part of the school culture. By adopting a scalable and transferable approach, schools can strengthen teaching and learning while preparing future-ready learners who are confident, ethical, digitally literate, and globally competent.

7. Conclusion

The AI-Enhanced E-Writing initiative demonstrates that meaningful educational innovation extends beyond the integration of technology. When guided by purposeful pedagogy, ethical practices, and authentic learning experiences, AI can enhance students' writing while developing

the knowledge, skills, and dispositions needed to thrive in an increasingly digital and interconnected world. The initiative has shown that combining AI-supported writing, responsible digital citizenship, cross-cultural collaboration, and strong partnerships with teachers, parents, and the community creates a holistic learning ecosystem that benefits all stakeholders. Beyond measurable improvements in writing achievement and classroom practice, the project strengthened student engagement, teacher capacity, parent involvement, and whole-school sustainability, transforming an innovative classroom practice into an embedded school-wide approach. Most importantly, the initiative demonstrates that sustainable school improvement is achieved not through technology alone, but through visionary leadership, continuous professional learning, collaborative professional practice, and a shared commitment to meaningful learning, consistent with current evidence on effective educational leadership (UNESCO, 2024).

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