

Fostering Motivation and Engagement in ESL Writing with Image Generative AI Introducing the MotivAI Writing Framework

Simona Scanni

IC Japigia II – Torre a Mare, Italy

Abstract This paper proposes The MotivAI Writing Framework, a didactic model for integrating image generative Artificial Intelligence (GenAI) into English as a Second Language (ESL) writing instruction. Grounded in a qualitative and theoretical methodology, drawing from established learning theories such as Self-Determination Theory, Flow Theory, the ARCS Model, and the L2 Motivational Self System as well as recent practical classroom experiences, this framework aims to significantly enhance student motivation and engagement. It outlines how generative AI can be strategically incorporated across pre-writing, drafting, revising, and publishing stages to foster productive language skills, cultivate digital literacy, and promote critical thinking. The framework addresses potential challenges like ethical considerations and teacher training, offers scaffolding strategies for diverse learners, and emphasizes a balanced approach where AI serves as a powerful supplement to, rather than a replacement for, human-led instruction. Ultimately, this proposal advocates for a thoughtful and effective integration of AI, positioning it as an ally for educators seeking to create more dynamic, engaging, and inclusive ESL writing environments for secondary school students.

Keywords GenAI. Motivation. Engagement. ESL Writing. Pedagogical Framework.

Summary 1 The Evolving Educational Landscape in the Age of AI: Challenges and Opportunities. – 2 Literature Review. – 3 Conceptualising a Pedagogical Framework for GenAI in Motivating Younger Learners: Significance, Methodology and Guiding Theories. – 4 The MotivAI Writing Framework: Design and Principles. – 5 Discussion. – 6 Conclusion.



Peer review

Submitted 2026-03-26
Accepted 2026-03-27
Published 2026-04-27



Open access

© 2026 Scanni | 4.0



DOI 10.30687/ELLE/2280-6792/2026/01/004

1 The Evolving Educational Landscape in the Age of AI: Challenges and Opportunities

With the rapid advancement of Artificial Intelligence (AI), education continues to undergo significant transformation. The generation born into this digital age, often termed “digital natives” (Prensky 2001a), intuitively, though sometimes superficially, interacts with technology; in the current landscape, this now includes AI-powered tools and platforms. While they may readily employ these sophisticated technologies, their inherent digital literacy for educational purposes is not always fully developed (Scanni 2023, 22, referencing Kirschner et al. 2017). Prensky (2001b) notes different attention spans compared to previous generations. In an “information-rich world” (Simon 1971), AI, exacerbates “poverty of attention”. This challenge is worsened by educators’ “pedagogical inertia” (Citton 2017), a discernible reluctance to embrace technological innovation that may lead instructors to disregard the implications of the Digital Native/Digital Immigrant dichotomy.

Historically, the discourse surrounding the quality of education facilitated by technology, including early forms of online learning, was often polarised between utopian and dystopian views. The utopian perspective celebrates the Internet (and subsequently, AI)’s potential to revolutionise learning by increasing participation, promoting equality, and enhancing the inclusion of students who might otherwise face barriers to traditional classroom access (Yar 2014). Conversely, the dystopian view cautions against the Internet as a source of societal problems, raising concerns about privacy, autonomy, potential addiction to technology, and alienation from human interaction (Yar, 2014). This perspective emphasises the importance of “resisting excessive optimism and preventing possible errors related to the failure to identify future risks” (Pinto et al. 2021, 2). For educators, reconciling these extreme positions is crucial (Rambe, Nel 2015). A mitigated perspective acknowledges the “multiple educational opportunities that technology presents” while remaining vigilant against the risks. Therefore, a balanced approach is proposed, viewing AI and its applications, such as image GenAI, as a valuable supplement to, rather than a replacement for, traditional education. As Citton (2017) metaphorically states regarding MOOCs, which can be extended to AI-enhanced learning, it “cannot, however, substitute for presential teaching, any more than a video of a pizza (even high definition) can substitute for a real pizza in the eyes of a hungry person” (99). This illustrates that while AI offers powerful tools, it does not replace the comprehensive and nuanced experience of human-led instruction. The goal is to synergistically combine the inclusive access and innovative possibilities offered by AI with the essential human elements of teaching and learning.

This paper aims to explore the transformative potential of image generative AI (GenAI) in enhancing motivation and engagement of ESL/EFL students in writing tasks. As a didactical proposal, it addresses to answering the following questions: How can image GenAI be conceptually integrated into ESL writing instruction to enhance student motivation and engagement? What pedagogical frameworks can leverage image GenAI to cultivate productive skills, motivation, and engagement in ESL writing, grounded in theories and practical experience? What are key considerations and benefits of implementing such a framework to promote ESL writing development and critical AI literacy? The proposed pedagogical framework aims to achieve multiple objectives: to consolidate oral and written production skills (speaking and writing) in English, with particular attention to applying grammar rules; to explore the potential of GenAI as a tool to support language learning and creativity; to promote inclusion by ensuring the active participation of all students, including those with disabilities and Special Educational Needs (SEN), through accessible methodologies and tools; to stimulate the ability to formulate clear and grammatically correct prompts to interact effectively with AI; and to foster conscious and responsible AI use through reflection on its ethical and practical implications.

2 Literature Review

2.1 Understanding Motivation and Engagement in Second Language Learning

Learning a new language is a profoundly complex endeavour that involves more than just acquiring vocabulary and grammar. As Brown (2007) posits, it's a holistic process where the learner's entire being is engaged in bridging their first language and culture with a new linguistic and cultural framework. Success demands significant commitment and involvement influenced by both external factors like curriculum design (Mirhadizadeh 2016) and internal factors, with motivation being paramount.

Existing research highlights several key factors that influence motivation and engagement in ESL writing. Task difficulty is a critical element: tasks either too easy or difficult can diminish motivation and engagement. Optimal tasks provide a manageable challenge, fostering accomplishment (Csikszentmihalyi 1990). Learner autonomy, or the degree to which students have control over their learning process, is consistently linked to higher motivation (Deci, Ryan 1985). When students feel a sense of ownership over their writing topics or tools, intrinsic motivation increases. Furthermore, timely, constructive, and specific feedback that focuses on improvement can significantly

boost a learner's confidence (Hattie, Timperley, 2007). The relevance of writing tasks, collaboration, and a supportive environment also contribute to a positive climate (Dörnyei, 2001).

Beyond these, the integration of ludic elements and active learning methodologies like gamification can improve motivation and knowledge retention compared to traditional methods (Dicheva et al. 2015; Plass et al. 2015). These methods, rooted in constructivist and socio-constructivist theories (Mollica 1976; 2019), create interactive experiences that foster cognitive and socio-emotional competencies through engaging narratives and interactive challenges.

To further understand the mechanisms underlying motivation, several theoretical frameworks offer insights. The Self-Determination Theory (SDT), states that intrinsic motivation is fostered when three psychological needs are met: autonomy, competence, and relatedness (Deci, Ryan 1985). In ESL writing, this suggests that providing choices and collaborative tasks can enhance engagement.

Flow Theory (Csikszentmihalyi 1990) describes a state of optimal experience where an individual is fully immersed in an activity. For flow to occur, there must be a balance between task challenge and individual skill. Appropriately challenging tasks increase engagement and enjoyment.

The ARCS Model (Keller 1987) focuses on Attention, Relevance, Confidence, and Satisfaction. Applying ARCS to writing means designing novel tasks (Attention), showing practical utility (Relevance), providing scaffolding (Confidence), and offering meaningful feedback (Satisfaction).

Finally, and complementing broader theories of motivation, The L2 Motivational Self System (L2MSS) (Dörnyei 2009) offers a framework comprising the Ideal L2 Self, the Ought-to L2 Self, and the L2 Learning Experience.

2.2 Generative AI in Language Learning: Benefits and Challenges

While traditional digital tools enhanced engagement via authentic materials (Mahdi 2014; Zeng, Takatuska 2009), image GenAI introduces a new dimension to "authentic materials" by enabling students to generate visuals directly related to their writing ideas, increasing ownership. Traditional research shows that images aid vocabulary acquisition and reduce anxiety (Paivio 1986; Mayer 2001). GenAI takes this further by allowing learners to create their own visuals, tapping into deeper cognitive processes through active creation rather than passive reception.

Recent studies uncover the transformative potential of image GenAI. Significant reductions in writing anxiety and improved

self-regulation have been observed due to the non-judgmental nature of AI feedback (Tiandem-Adamou 2024; Mohammed, Khalid 2025). AI tools further increase motivation through up-to-date information, real-time feedback, and gamified features, bridging gaps left by traditional methods (Ahmed et al. 2025). As writing assistants, these tools support brainstorming, provide samples for analysis, and scaffold the writing process while developing critical thinking (Wang, Dang 2024; He 2024).

Regarding the L2 Motivational Self System (L2MSS), research indicates that GenAI positively affects the Ideal L2 Self and L2 Learning Experience, significantly enhancing writing self-efficacy (Huang, Mizumoto 2024; Zaim et al. 2025). In secondary school settings, AI-generated images boost motivation and learning speed, with students finding tasks “more fun than sitting and looking at other pictures” (Berg et al. 2024, 503). Furthermore, AI-generated feedback has been shown to improve trait emotional intelligence and writing proficiency through detailed focus on grammar and coherence (Mohammed, Khalid 2025; Rachmawati et al. 2024).

However, challenges remain. Over-reliance on technology can hinder writing development and create dependency (Zhai et al. 2024; Abbas et al. 2024). Concerns regarding inaccurate information, cultural bias, and unequal access to high-speed internet are paramount (Ahmed et al. 2025; (Wang, Dang 2024)). Integration is contingent on structured guidance to manage issues like plagiarism and the development of prompt engineering skills, which are not inherent (Huang, Mizumoto 2024; Berg et al. 2024). Additionally, teachers face time constraints in keeping up with shifting AI literacy levels. Despite these hurdles, GenAI remains a valuable tool for students with writing difficulties (Kuerban et al. 2025). The key to success lies in striking a balance between technology and traditional pedagogy.

2.3 Research Gaps

Despite growing research, significant gaps remain regarding how image GenAI affects motivation and engagement for younger ESL learners (secondary school). Existing literature often focuses on traditional visuals or general digital tools, lacking comprehensive pedagogical frameworks tailored for this demographic. We need more studies on long-term impacts on writing development (Berg et al. 2024; Huang, Mizumoto 2024). Additionally, there is a lack of research on how GenAI can meet diverse cultural and linguistic needs of students from varying backgrounds (Weng, Fu 2025; Zaim et al. 2025).

3 Conceptualising a Pedagogical Framework for GenAI in Motivating Younger Learners: Significance, Methodology and Guiding Theories

In light of the identified gaps in the existing literature, there is a clear and pressing need for the development of tailored pedagogical frameworks to effectively harness the motivational potential of GenAI, particularly for younger learners. The MotivAI Writing Framework addresses the lack of AI-integration models specifically designed for secondary education. GenAI offers unique possibilities beyond traditional practice, acting as a role-play partner and personalizing learning experiences (TeachingEnglish.org.uk, n.d.). Crucially, text-to-image tools (e.g., Canva) transform routine writing into interactive tasks by linking linguistic precision to visual output. As demonstrated by Buyuksimkesyan (2023), visualising descriptions fosters self-correction and clarity, providing immediate feedback that stimulates creativity.

This paper proposes a novel pedagogical framework for integrating image GenAI into ESL writing instruction. The methodology employed in developing this framework is primarily qualitative and theoretical, drawing upon a review of existing literature on motivation, engagement, and image GenAI, complemented by insights derived from personal experience in language education. As this is a didactic proposal rather than an empirical study, the methodology focuses on the conceptual design and rationale behind the proposed instructional approaches.

The development of this pedagogical framework was a thoughtful process, beginning with the synthesis of key theoretical tenets directly from the literature review. I consciously aligned my design principles with established models of motivation, such as Self-Determination Theory (SDT), which underscores the vital needs for autonomy, competence, and relatedness to foster intrinsic motivation. Similarly, Flow Theory, with its emphasis on optimal experience when challenges align with skills, and Keller's ARCS Model, providing a systematic approach to capturing attention, establishing relevance, building confidence, and ensuring satisfaction, served as guiding stars. Moreover, Dörnyei (2009) posits that a strong and vivid Ideal L2 Self is a powerful motivator, as learners are driven by the desire to reduce the discrepancy between their current and ideal L2 selves. This aligns with the MotivAI Writing Framework's aim to foster a sense of autonomy and competence, allowing students to visualise their linguistic potential through AI-generated content, thereby strengthening their Ideal L2 Self and promoting greater engagement and persistence in ESL writing tasks. These theories provided the conceptual scaffolding upon which I built the proposed intervention. This involved a creative and analytical process of identifying precise

integration points within the ESL writing continuum where image GenAI could exert the most meaningful impact. Could it be leveraged in the pre-writing phase to spark initial ideas and overcome writer's block by creating visual prompts? Could it assist in the drafting process by helping students visualise characters or settings, thus enriching their descriptive language? Or perhaps in revision, by offering a new perspective through AI-generated imagery derived from their text? Each proposed integration was carefully considered for its potential to enhance intrinsic motivation and engagement, aligning directly with the theoretical principles identified.

A crucial aspect of this design process was the commitment to practical applicability. Given that this paper is a didactic proposal, it was essential to move beyond abstract concepts and generate concrete, actionable examples. This involved conceiving detailed activities and illustrative lesson plan segments that vividly demonstrate how image GenAI could be brought to life in a secondary ESL classroom. These examples are rooted in an understanding of real-world classroom dynamics, the diverse proficiency levels of ESL learners, and the practical constraints faced by educators.

Furthermore, the methodology proactively addressed potential challenges and the necessity for scaffolding. No technological integration is without its hurdles, and image GenAI presents unique considerations. Ethical concerns, such as the responsible use of AI and avoiding perpetuating biases, were front of mind. Copyright issues, particularly regarding AI-generated content, also required careful thought. Crucially, the framework was designed with an inherent understanding of the need for robust teacher training and professional development to ensure educators are equipped to effectively utilise and manage these tools. Strategies for scaffolding were also integrated, ensuring that students with varying levels of language proficiency and digital literacy could access and benefit from the frameworks, preventing the technology from becoming an additional barrier rather than an enabler.

In essence, this methodology outlines a rigorous, theoretically informed process of conceptual design. It moves from a deep understanding of the problem space, established in the literature review, to the crafting of practical solutions in the form of a pedagogical framework. It is a testament to the potential of synthesising established educational theory with emerging technological capabilities to foster more motivating and engaging learning environments for ESL students.

4 The MotivAI Writing Framework: Design and Principles

Building upon the theoretical foundation previously established in the literature review and the methodological approach outlining our didactic proposal, The MotivAI Writing Framework utilises image GenAI to stimulate motivation and engagement in ESL writing. It is a flexible pathway conceptualised to be tailored to diverse learning objectives and various classroom contexts. Its core lies in fostering a dynamic interplay between visual inspiration and linguistic expression, thereby transforming writing into an interactive, personalised, and intrinsically motivating experience.

The architecture of the framework is rooted in SDT, Flow Theory, and the ARCS Model. At its very essence, it champions learner autonomy and ownership, empowering students to actively shape their creative journey by enabling students to generate visual prompts and manipulate AI output through precise language. This developed autonomy fosters a stronger sense of competence, with AI acting as an ally to overcome writing barriers and providing immediate feedback. The novelty and interactive nature of GenAI naturally capture attention and relevance, aligning perfectly with the ARCS Model's initial components. Furthermore, the framework aims to cultivate a state of flow where visual-to-text challenges balance with linguistic abilities. The integration of image generation with ludic elements and inspiration, such as theatre-based like (e.g., *Kamishibai*, improvisation, creating tableau vivant scenes, or even character-driven role-playing scenarios and visual narrative techniques or comic strips), transforms writing into a playful endeavour which significantly enhances student involvement and deeper learning. Therefore, this framework is designed to stimulate creativity, autonomy, and critical awareness.

The primary goals of The MotivAI Writing Framework are multifaceted and directly address the objectives identified for language learning in a technologically evolving society:

- Enhance intrinsic motivation through the novelty and personalization of image GenAI.
- Deepen engagement via visual prompts that spark creativity.
- Foster visual-linguistic connections, requiring precise language and strengthening grammatical skills (e.g., present simple) to translate abstract ideas into imagery.
- Develop critical thinking and prompt engineering skills, emphasising the importance of linguistic precision.
- Promote confidence by helping students create compelling visual and written works.
- Encourage responsible AI use, fostering awareness of ethical implications and AI-generated content such as bias.

4.1 Key Components and Integration into the Writing Process

The framework incorporates image GenAI across the writing continuum, transforming each phase into a visual-linguistic synergy:

- Pre-writing: Students brainstorm keywords and experiment with AI prompts to generate exploratory images. These visuals serve as ‘concrete anchors’, providing a rich vocabulary that overcomes writer’s block and inspires narrative arcs.
- Drafting: Images provide visual scaffolding. Students describe emotions, interpret visual elements, or build stories around AI-generated characters. This tangible reference point helps organize thoughts and expand vocabulary through immediate feedback.
- Revising: Students generate alternative visuals based on their drafted text. Discrepancies between the intended scene and the AI output highlight vague language, reinforcing the need for linguistic precision. Peer feedback includes discussing the alignment between text and imagery.
- Presenting: Students use AI to create covers, digital storyboards, or background illustrations. This adds a professional dimension to their output, fostering pride and providing a shareable artefact of their creativity.

4.2 The MotivAI Writing Framework in Action: A Sample Didactic Intervention

To illustrate the framework, I present an activity mirroring a successful intervention for a lower secondary ESL class focused on environmental sustainability. The objective is the collaborative creation of a short story, emphasizing descriptive language and the consistent application of the present simple (third person singular), a common grammatical hurdle for this demographic.

- Phase 1: Visual Story Foundation with *Kamishibai*. The lesson begins with brainstorming environmental vocabulary. Using *Kamishibai* (Japanese paper theatre), groups draft a short story in English. Expected sentences maintain controlled structures (e.g., subject-verb-complement) to reinforce grammatical rules, with each sentence accompanied by a hand-drawn illustration. This choral narrative stimulates both oral and written production through a traditional, tactile medium.
- Phase 2: AI-Powered Digital Storyboards. After a brief overview of GenAI and ethical use, students transition from their drawings to digital storyboards using an image GenAI app (e.g., Canva). They translate their *Kamishibai* phrases into precise AI prompts. This process forces students to observe how linguistic

precision - vocabulary and syntax - directly influences the visual output. Notably, students must repeat detailed descriptions of recurring elements (e.g., protagonists) because GenAI lacks inherent contextual memory, further reinforcing the need for grammatical consistency and descriptive clarity.

- Phase 3: Revision and Ethical Reflection. Groups evaluate the alignment between the AI-generated images and their intended narrative. Students refine their text or adjust prompts to improve coherence. This phase includes a teacher-led discussion on the ethical implications of AI, emphasizing the human role in critical thinking and the necessity of verifying AI outputs for bias or inaccuracy.
- Phase 4: Presenting and Sharing. Groups present their digital storyboards, explaining how AI supported their creative process. The project can culminate in a contest, providing a tangible goal. Students reflect on their learning journey, acknowledging how the synergy of traditional methods and AI enhanced both their language skills and their engagement.

4.3 Addressing Potential Challenges

The integration of image GenAI, while immensely promising, necessitates a thoughtful and proactive approach to potential challenges. Regarding ethical considerations, the framework explicitly integrates discussions around the responsible use of AI. Students are guided to understand that AI is a tool to augment, not replace, human creativity, viewing AI as an ‘ally’. Concerning copyright and attribution, the evolving landscape of AI-generated content is acknowledged. For educational purposes, the framework emphasizes that images created by AI are primarily for internal classroom use. Students are taught to attribute the AI tool us, fostering an understanding of intellectual property. For external or commercial use, explicit guidance on licensing and usage rights would be provided, prioritising the pedagogical context. Finally, teacher training and preparedness are crucial for the success of this framework, which hinges on equipping educators with the necessary technical knowledge and skills. This necessitates dedicated professional development workshops that cover not only the technical aspects of using image GenAI tools and effective prompt engineering, understanding different AI models but also including pedagogical strategies for integrating AI meaningfully into the ESL curriculum. Teachers must facilitate discussions around AI’s limitations, guiding students through the creative process while providing targeted linguistic feedback.

4.4 Scaffolding for Diverse Learners

The framework is designed with flexibility to support varying levels of language proficiency and digital literacy, promoting inclusion as a core outcome. For students developing proficiency, the framework offers several supports: teachers can provide pre-selected prompts and sentence starters to reduce cognitive load. Initial activities focus on basic descriptive tasks, where AI images function as dynamic visual dictionaries. Additionally, teacher modelling of prompt creation provides clear examples and reduces student anxiety.

For students with advanced proficiency, the framework encourages experimentation with abstract or multi-layered prompts to create sophisticated images. This challenges them to describe complex emotions or philosophical concepts visually. Students can also create images fitting specific literary genres, pushing their stylistic boundaries. Furthermore, they can engage in critical analysis of AI output, discussing how different prompts yield varying visual interpretations. To support varying digital literacy, the framework begins with a guided introduction to AI tools. Collaborative learning is encouraged through group activities, where digitally literate students support their peers. Activities gradually increase in complexity, moving from simple image creation to intricate visual storytelling, ensuring a gradual development of computational thinking. By integrating GenAI and providing appropriate scaffolding, The MotivAI Writing Framework offers a dynamic pathway for ESL students to cultivate their skills and experience renewed motivation.

5 Discussion

The proposed MotivAI Writing Framework emerges as a response to the identified gaps in the literature, particularly the need for pedagogical approaches that addresses the unique motivational needs of younger ESL learners in an AI-infused educational landscape. By explicitly integrating GenAI, this framework moves beyond general technology integration to offer targeted strategies. Drawing on SDT, the framework enhances autonomy through creative expression, fosters competence via immediate visual feedback, and promotes relatedness through collaborative activities, turning writing into a shared, interactive experience. This directly addresses the often-cited challenge of engaging “digital natives” who exhibit “poverty of attention” by offering novel, interactive, and visually rich tasks that align with their digital sensibilities (Prensky 2001b; Simon 1971).

The core strength of the MotivAI Framework lies in its practical application of GenAI to spark creativity and engagement. By transforming descriptive writing into an interactive challenge,

the framework capitalises on the novelty and immediacy of AI. This process allows to visually verify the clarity of their language. The iterative nature of refining prompts to achieve desired visual outcomes inherently develops critical thinking and precise language use. Furthermore, AI's ability to act as a role-play partner (Peachey 2024) directly supports the ARCS Model by capturing attention and building confidence. The playful and explorative nature of generating images can transform writing from a daunting task into a more fun activity (Berg et al. 2024), fostering a state of flow (Csikszentmihályi 1990) and boosting motivation and retention (Dicheva et al. 2015).

5.1 Ethical Considerations and Responsible AI Use in Education

The MotivAI Framework is also designed with a critical awareness of the challenges posed by GenAI integration. Concerns about over-reliance, plagiarism, potential biases, and “hallucinations” (Wang, Dang 2024; Zaim et al. 2025; Peachey 2024) are not overlooked. Instead, the framework positions these challenges as opportunities for learning. For example, evaluating AI-generated images fosters digital literacy by showing that AI requires human oversight. The emphasis on crafting precise prompts for AI interaction inherently teaches effective communication and problem-solving. The framework promotes a balanced and pedagogical approach, encouraging teachers to move beyond simply banning AI towards rethinking assessment. Addressing practical issues like teacher training and equitable access remains paramount, underscoring that the framework's success relies on systemic support, guiding students to understand that AI is a tool to augment, not replace, human creativity. Conversations about AI bias are crucial to foster critical thinking, underlining the importance of the human element in creative processes. The emphasis remains on the student's original thought, with AI serving as a visual prompt, ensuring the human element remains central.

6 Conclusion

This paper presented The MotivAI Writing Framework, a didactic proposal designed to utilise the capabilities of image GenAI to enhance motivation and engagement in ESL writing, particularly for younger learners. By synthesising insights from motivational theories (SDT, Flow Theory, ARCS Model), and practical classroom experiences, the framework offers a structured and innovative approach to address a critical gap in literature regarding tailored AI pedagogical frameworks for primary and secondary schools.

The framework's strength lies in its capacity to transform writing into an interactive, creative, and intrinsically motivating experience. By enabling students to visualise their descriptive language through AI-generated images, it provides immediate feedback, fosters critical thinking through prompt refinement, and promotes autonomy and competence. While acknowledging potential pitfalls such as over-reliance and the need for critical evaluation of AI outputs, the MotivAI Framework champions a balanced and responsible integration of AI as a tool to complement, not replace, traditional teaching. This theoretical proposal, while comprehensive, calls for empirical validation in diverse classroom settings to assess its impact on learner outcomes. Moving forward, empirical studies are needed to validate the framework's effectiveness across diverse educational contexts, focusing on long-term impacts on writing proficiency and teacher AI literacy. Future research should also explore its use in different age groups, investigate long-term effects of AI on writing skill development, and examine specific teacher professional development models for successful implementation. Optimal prompt engineering strategies and the impact of AI on the socio-emotional aspects of learning among younger students represents a promising direction for future inquiry. Ultimately, educators should embrace technological innovation with pedagogical foresight, ensuring AI serves as an ally in creating dynamic, inclusive, and highly engaging learning environments.

Bibliography

- Abbas, M.; Jam, F.A.; Khan, T.I. (2024). "Is It Harmful or Helpful? Examining the Causes and Consequences of Generative Ai Usage Among University Students". *International Journal of Educational Technology in Higher Education*, 21(1), 10-23. <https://doi.org/10.1186/s41239-024-00444-7>.
- Ahmed, I.; Ghafoor, A.; Liliuara, D.; Akyuningrum, V.Q. (2025). "The Impact of Ai Learning Tools on ESL Learners' Motivation and Success: A Systematic Literature Review". *English Learning Innovation (englie)*, 6(1), 134-142. <https://doi.org/10.22219/englie.v6i1.38961>.
- Berg, C.; Omsén, L.; Hansson, H.; Mozelius, P. (2024). "Students' AI-generated Images: Impact on Motivation, Learning and Satisfaction". *4th International Conference on AI Research (ICAIR 2024)*. <https://doi.org/10.34190/icair.4.1.3243>.
- Brown, H.D. (2007). *Principles of Language Learning and Teaching*. 5th ed. New York: Pearson Education.
- Buyuksimkesyan, E. (2023). *Ask AI to Generate the Picture You Described. A Writing Lesson Idea With A Touch of AI Creativity. A Journey in TEFL*. <http://evasimkesyan.com/2023/10/16/ask-ai-to-generate-the-picture-you-described-a-writing-lesson-idea-with-a-touch-of-ai-creativity/>.
- Citton, F. (2017). *The Ecology of Attention*. Cambridge: Polity Press.
- Csikszentmihalyi, M. (1990). *Flow: The Psychology of Optimal Experience*. New York: Harper & Row.
- Deci, E.L.; Ryan, R.M. (1985). *Intrinsic Motivation and Self-determination in Human Behavior*. New York: Plenum.
- Deci, E.L.; Ryan, R.M. (1992). "The Initiation and Regulation of Intrinsically Motivated Learning and Achievement". Boggiano, A.K.; Pittman T. (eds), *Achievement and Motivation: A Social-Developmental Perspective*. Cambridge: Cambridge University Press. 71-85.
- Deci, E.L.; Ryan, R.M. (2000). "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being". *American Psychologist*, 55(1), 68-78. <https://doi.org/10.1037/0003-066X.55.1.68>.
- Dichev, D.; Dichev, C.; Agre, G.; Angelova, G. (2015). "Gamification in Education: A Systematic Mapping Study". *Journal of Educational Technology & Society*, 18(3), 75-88.
- Dörnyei, Z. (2009). "The L2 Motivational Self System". Dörnyei, Z.; Ushioda, E. (eds), *Motivation, Language Identity and the L2 Self*. Bristol: Multilingual Matters, 9-42.
- Hattie, J.; Timperley, H. (2007). "The Power of Feedback". *Review of Educational Research*, 77(1), 81-112. <https://doi.org/10.3102/003465430298487>.
- He, Y. (2024). "The Metaphor of Ai in Writing in English: A Reflection on EFL Learners' Motivation to Write, Enjoyment of Writing, Academic Buoyancy, and Academic Success in Writing". *The International Review of Research in Open and Distributed Learning*, 25(3), 271-86. <https://doi.org/10.19173/irrodL.v25i3.7769>.
- Huang, J.; Mizumoto, A. (2024). "Examining the Effect of Generative AI on Students' Motivation and Writing Self-Efficacy". *Digital Applied Linguistics*, 1, 102324. <https://doi.org/10.29140/dal.v1.102324>.
- Keller, J.M. (1987). "Development and Use of the Arcs Model of Instructional Design". *Journal of Instructional Development*, 10(3), 2-10. <http://dx.doi.org/10.1007/BF02905780>.
- Kohnke, L.; Zou, D.; Su, F. (2025). "Exploring the Potential of GenAI for Personalised English Teaching: Learners' Experiences and Perceptions". *Computers and*

- Education: Artificial Intelligence*, 8, 100371. <https://doi.org/10.1016/j.caeai.2025.100371>.
- Kuerban, Y.; Oyelere, S.S.; Sanusi, I.T. (2025). "ReadSmart: Generative AI and Augmented Reality Solution for Supporting Students with Dyslexia Learning Disabilities". *International Journal of Technology in Education and Science (IJTES)*, 9 (1), 159-76. <https://doi.org/10.46328/ijtes.599>.
- Levin, J.R.; Anglin, G.J.; Carney, R.N. (1987). "On Empirically Validating and Theoretically Explaining the Effectiveness of Pictorial Mnemonics". Pressley, M.; Brainerd, C.B. (eds), *Cognitive Learning and Memory in Children. Progress in Cognitive Development Research*. New York: Springer, 263-294.
- Mahdi, H. (2014). "The Impact of Computer-mediated Communication Environments on Foreign Language Learning: A Review of the Literature". *World Journal of English Language*, 4(1), 9-19.
- Mirhadizadeh, M. (2016). "A Review of Internal and External Factors Influencing Second Language Acquisition". *Journal of Applied Linguistics and Language Research*, 3(5), 188-195.
- Mohammed, S.J.; Khalid, M.W. (2025). "Under the World of Ai-generated Feedback on Writing: Mirroring Motivation, Foreign Language Peace of Mind, Trait Emotional Intelligence, and Writing Development". *Language Testing in Asia*, 15(7), 1-26. <https://doi.org/10.1186/s40468-025-00343-2>.
- Mollica, A. (1976). "A Short Guide to the Teaching of Italian". *Italica*, 53(3), 362-378.
- Mollica, A. (2019). *Ludolinguistica. I giochi linguistici e la didattica dell'italiano*. Loreto: Eli La Spiga.
- Paivio, A. (1986). *Mental Representations: A Dual Coding Approach*. Oxford: Oxford University Press.
- Peachey, N. (2024). *Generative AI and the language classroom*. London: British Council.
- Pinto, J.M.; Silva, E.T.; Pereira, M. (2021). "The Utopian and Dystopian Visions of the Internet: A Critical Analysis". *Journal of Digital Social Research*, 3(1), 1-15.
- Plass, J.L.; O'Keefe, P.A.; Homer, B.D. (2015). "Foundations of Game-Based Learning". *Educational Psychologist*, 50 (4), 258-283. <https://doi.org/10.1080/00461520.2015.1122533>.
- Prensky, M. (2001a). "Digital Natives, Digital Immigrants". *On the Horizon*, 9(5), 1-6. <https://doi.org/10.1108/10748120110424816>.
- Prensky, M. (2001b). "Digital Natives, Digital Immigrants Part 2: Do They Really Think Differently?". *On the Horizon*, 9(6). <https://doi.org/10.1108/10748120110424843>.
- Rachmawati, D.L.; Oktafiah, Y.; Hastari, S. (2024). "Exploring Learner Perceptions and Motivation of AI-Assisted Writing Tools in English for Specific Purposes Classrooms". *Proceeding of the International Conference on Global Education and Learning*. <https://doi.org/10.62951/icgel.v1i2.113>.
- Rambe, P.; Nel, L. (2015). "Technological Utopia, Dystopia and Ambivalence: Teaching with Social Media at a South African University". *British Journal of Educational Technology*, 46(3), 629-48. <https://doi.org/10.1111/bjjet.12159>.
- Scanni, S. (2023). *The Effectiveness of Online Language Learning: A Case Study of Italian as a Foreign Language* [Phd dissertation]. Birmingham: University of Birmingham.
- Simon, H.A. (1971). "Designing Organizations for an Information-Rich World". Greenberger, M. (ed.), *Computers, Communications, and the Public Interest*. Baltimore: Johns Hopkins Press, 37-52.
- Tiandem-Adamou, Y. (2025). "Using Generative Artificial Intelligence to Support EFL Students' Writing Proficiency in University in China". *Journal of*

- Educational Technology and Innovation*, 6. <https://doi.org/10.62515/JETI.202412060004>.
- Wang, H.; Dang, A. (2024). "Enhancing L2 Writing with Generative AI: A Systematic Review of Pedagogical Integration and Outcomes".
- Weng, Z.; Fu, Y. (2025). "Generative AI in Language Education: Bridging Divide and Fostering Inclusivity". *International Journal of Technology in Education*, 8. <https://doi.org/10.46328/ijte.1056>.
- Yar, M. (2014). *Cybercrime and society*. London: Sage Publications.
- Zhai, C.; Wibowo, S.; Li, L.D. (2024). "The Effects of Over-Reliance on AI Dialogue Systems on Students' Cognitive Abilities: A Systematic Review". *Smart Learning Environments*, 1. <https://doi.org/10.1186/s40561-024-00316-7>.
- Zaim, M.; Arsyad, S.; Waluyo, B.; Ardi, H.; Al Hafizh, M.; Zakiyah, M.; Syafitri, W.; Nusi, A.; Hardiah, M. (2025). "Generative AI as a Cognitive Co-Pilot in English Language Learning in Higher Education". *Education Sciences*, 15(6), 686. <https://doi.org/10.3390/educsci15060686>.
- Zeng, G.; Takatsuka, S. (2009). "Text-Based Peer-peer Collaborative Dialogue in a Computer-mediated Learning Environment in the EFL Context". *System*, 37, 434-46. <https://doi.org/10.1016/j.system.2009.01.003>.