



Integrating Artificial Intelligence into English Language Curricula: Pedagogical Shifts and Instructional Challenges

Ms. Reshma A

Research Scholar

Dr Janaki Ammal Campus, Palayad

E-mail: reshmamadakkal@gmail.com

Dr Sindhu Thamban

Assistant Professor

PG & Research Department of English

Payyanur College

E-mail: sindhuthamban@gmail.com

Abstract

The emergence of Artificial Intelligence is redefining educational practices across disciplines, including the field of English language education. AI offers valuable support by introducing new methods, activities, assessment strategies, and opportunities for interaction. Although AI tools are becoming more accepted, their integration into English language curricula is still inconsistent and underexplored. This paper examines how AI technologies can be integrated into English Language curricula, with particular attention to pedagogical strategies, tool evaluation, and curriculum redesign. This study adopts a mixed methods approach, combining a comprehensive review of relevant literature with an analysis of classroom-based case studies. The findings show that while AI technologies can support aspects of language acquisition, such as differentiated instruction, feedback, and learner



engagement, their effective integration requires careful pedagogical design and ethical consideration to ensure that learning remains human-centered. The paper proposes practical frameworks for incorporating AI into English language curricula and examines their broader implications for teacher training and curriculum reform.

Keywords: Artificial Intelligence, English Language Curriculum, Language Learning Technologies, Educational Innovation, Pedagogical Integration, AI Tools in Language Teaching

Introduction

The integration of artificial intelligence (AI) into educational settings has gained attention over the last ten years, fundamentally changing the traditional methods of teaching and learning in various disciplines. AI technologies are offering new possibilities for enhancing instruction efficiency, personalizing students' learning experiences, and broadening access to educational resources. As the education sector undergoes digital transformation, there has been an upsurge in the interest of how AI could influence the development of subject-specific pedagogies. AI in English language education offers a set of possibilities as well as challenges.

AI-powered writing assistants, speech recognition software, and chatbots are some of the tools being experimented with to aid grammar instruction, language practice, reading comprehension, and feedback giving. Such tools can help the teacher by giving learners immediate, personalized support. Nevertheless, despite the increasing availability of such tools, their use in formal English language teaching is still inconsistent and mostly informal. Most curricula are currently not prepared for the innovative, data-driven, and adaptable nature of AI technologies, thus creating a gap between technological advancement and pedagogical practice. This paper aims to explore how AI can be meaningfully integrated as a teaching assistant in English language classrooms, and thereby identifies the challenges associated with the integration in the teaching-learning process. It also examines pedagogical frameworks that facilitate AI use, maps out the challenges of technology integration, and looks into the ensuing changes possible in curriculum and teacher professional development. Through a review of the literature and the presentation of teaching experience case studies, the research sets out to provide practical guidance to educators, curriculum developers, and policymakers who are currently involved in the transformation of education by technology.



Materials and Methods

This study adopts a qualitative method of inquiry, mainly referring to literature, supported by the analysis of some classroom case studies. The primary aim was to investigate how artificial intelligence (AI) has been integrated into the English language curricula and to identify the pedagogical, practical, and ethical considerations related to this process.

Literature Review

The literature reviewed for this study includes peer-reviewed journal articles, curriculum frameworks, practitioner reports, and educational policy documents published in the last ten years (2015-2025). The selection criteria for these sources were their closeness to the topics of AI in education, English language teaching, and curriculum development. Prior research has heavily documented the general potential of technological interventions in language learning; for instance, Luckin et al (2016) argued that AI has the capacity to unleash personalized learning pathways by acting as an intelligent tutor, while Reinders and Pegrum (2015) highlighted how digital platforms offer decentralized support for language learners. Furthermore, mobile-assisted language learning applications have demonstrated significant success in targeted domains such as vocabulary acquisition and grammar self-editing (Heil et al., 2020; Li & Hegelheimer, 2013).

Recent meta-analyses evaluating artificial intelligence in English instruction highlight a significant shift away from traditional, rigid computer-assisted language learning (CALL) toward intelligent, generative systems capable of dynamic feedback loops (Chang, 2023). Empirical tracking of AI conversational agents reveals a profound positive impact on L2 learner speaking proficiency, pronunciation, and output fluency, due to the tools' capacity to simulate low-anxiety, immersive environments (Li, 2024; Qiao & Zhao, 2023). However, contemporary literature reveals that these technological implementations are largely documented as isolated, tool-based interventions. Studies frequently emphasize the mechanical capacity of generative AI to produce writing tasks or vocabulary lists, but overlook how these activities fit into broader curricular architectures (Cambridge University Press, 2025). Thus, a pronounced pedagogical research gap remains: there is a critical scarcity of studies examining how these standalone platforms interact systematically with formal curriculum goals, localized assessment criteria, and the holistic professional knowledge required by teachers to sustain them.

**Selection criteria included:**

- Recency Aspect: Preference was given to literature from the past 10 years to maintain relevance in a drastically changing technological environment.
- Credibility aspect: Peer-reviewed sources and publications by well-known educational organizations were given priority.
- Contextual Relevance Aspect: Research studies that focused specifically on English Language teaching or curriculum integration were seen as highly relevant.

Theoretical Framework: Technological Pedagogical Content Knowledge (TPACK)

The study is based on the Technological Pedagogical Content Knowledge (TPACK) framework, which provides an essential analytical framework for exploring how teachers execute technology integration within subject-specific instruction (Mishra & Koehler, 2006; Mouza et al., 2016). In the context of AI-driven English language education, integration cannot be viewed solely as a technical task; it requires a sophisticated intersection of Content Knowledge (the linguistic nuances of English), Pedagogical Knowledge (the methodologies of second language acquisition), and Technological Knowledge (the affordances and constraints of AI tools).

Grounding this study in the TPACK framework is highly relevant, as recent studies confirm that technology integration in language education fails when tools are decoupled from pedagogical intent. Recent data mapping English teachers' readiness indicates that while many display adequate Technological Content Knowledge (TCK)—such as utilizing an AI application for surface-level spelling or grammar adjustments—they face structural bottlenecks in Technological Pedagogical Knowledge (TPK), finding it difficult to orchestrate AI tools alongside traditional communicative tasks (Chan & Tang, 2024). Consequently, an expanded TPACK-AI perspective is necessary to evaluate how an educator's understanding of English instruction (Content Knowledge) and second language acquisition methodologies (Pedagogical Knowledge) can actively supervise, filter, and adapt the unpredictable outputs generated by artificial intelligence (Technological Knowledge) within a formal curriculum layout.

Case Study Analysis

Besides the literature review, three classroom-based case studies were reviewed to gain a practical understanding of how AI is currently integrated into the English language curriculum. These case studies were based on published research and



educational reports that described actual AI tools' application in secondary and higher secondary English language classrooms [see Endnotes for detailed profiles of Case 1, Case 2, and Case 3]. Each case was selected to illustrate a different usage scenario such as writing assistance, speaking practice, or formative assessment, thus providing a wider perspective of the pedagogical impact across diverse learning contexts. The analysis focused on the specific AI tools used, how the tools were integrated into the curriculum, student and teacher responses, and reported outcomes and challenges. The data from the selected literature and classroom-based case studies were analysed using thematic analysis. An initial open reading of the sources was undertaken to identify recurring ideas related to AI integration in English language teaching. These ideas were then coded and categorised into broader thematic groups such as pedagogical affordances, instructional challenges, teacher readiness, and ethical concerns. The TPACK framework functioned as the primary analytical lens, enabling the interpretation of findings in terms of the interaction between technological knowledge, pedagogical practices, and content-specific requirements of English language teaching.

Results, Findings, and Discussion

Through the examination of the literature and case studies that were reviewed, the main focus was placed on the incorporation of artificial intelligence (AI) into English language curricula. The integration of AI into curricula raised four main thematic dimensions that map directly onto the components of the TPACK framework: (1) the emerging patterns of AI integration, (2) pedagogical affordances, (3) practical and curricular challenges, and (4) concerns about ethics and equity. Below, these themes are detailed and analyzed in dialogue with prior theoretical expectations.

1. Emerging Patterns of AI Integration

The use of AI tools in teaching the English language is becoming more common through various platforms and applications. AI-powered writing assistants such as Grammarly and Quillbot are among the popular implementations, while speech recognition technologies are used for pronunciation practice (e.g., ELSA Speak, Google's Read Along). Adaptive learning systems that provide personalized feedback are also common. Both the case studies and the literature indicate that AI tools are leveraged to enhance language instruction as well as to replace certain aspects of teaching. As an illustration, a grammar-checking AI application was integrated at a secondary school to help students check for mistakes while essay



drafting. In a higher secondary environment, an institution utilized an AI-driven speaking tool to provide learners instant feedback on their pronunciation, fluency, and intonation.

From a TPACK perspective, these emerging patterns reflect an expansion of the 'Technological Knowledge' (TK) domain within language classrooms. However, simply deploying these platforms does not guarantee effective 'Technological Content Knowledge' (TCK), as the mechanical application of automated tools often operates independently of structural language acquisition theories.

2. Pedagogical Affordances

A number of pedagogical advantages that could be derived were as follows:

- **Personalized Learning:** AI programs were seen to adapt instructional materials and feedback to the needs of individual students, making differentiation easy.
- **Improved Learner Engagement:** AI-driven, game-based interfaces inspired students to practice English outside the classroom.
- **Feedback Mechanism:** AI tools provided instant – often personalised – feedback on multiple levels of linguistic elements (eg grammar, vocabulary, pronunciation) for formative assessment at a time when the teacher's ability to provide feedback may be restricted by other factors such as class size and time available.

One such case study shows a demonstrable enhancement in students' descriptive writing following the use of an AI tool with automatically generated vocabulary suggestions and sentence restructuring prompts (Dipper, 2007). Teachers also reported that such tools promoted student independence and greater reflective use of language. This aligns directly with the 'Pedagogical Knowledge' (PK) dimension of TPACK, demonstrating how AI can shift the classroom dynamic from teacher-led delivery to learner-centered optimization, fulfilling the theoretical potential of automated formative assessments.

3. Practical and Curricular Challenges

However, in spite of these pedagogical advantages, some practical challenges were reported:

- **Teacher preparation:** Numerous teachers felt ill-prepared and lacked confidence in their ability to use AI tools for teaching.



- **Technical challenges:** Infrastructure concerns such as poor or no internet connectivity, inadequate hardware, and unstable platforms were evident in schools with resource limitations.

- **Curriculum Misalignment:** Several AI tools produced outputs inconsistent with curriculum standards that generated tensions between AI-assisted learning and traditional knowledge assessment needs.

For instance, in one case study report, students found that AI-augmented grammar correction was helpful for writing, but the feedback sometimes simplified grammatical explanations (or even contained errors), leading to potential confusion among learners and misalignment with curriculum expectations. This clearly highlights a deficiency in 'Technological Pedagogical Knowledge' (TPK) and 'Technological Content Knowledge' (TCK). When AI feedback oversimplifies grammar rules or clashes with standard curricula, it underscores the gap between autonomous technology and the precise content requirements of formal English language teaching.

4. Ethical and Equity Concerns

The deployment of AI tools in classrooms resulted in the revealing of several ethical considerations and equity issues related to the use of the AI tools:

- **Data Privacy:** Teachers and parents expressed their concern about the use of student data that has been gathered and stored by third-party AI vendors.

- **Bias and Fairness:** Research demonstrated that AI language models inherit the biases of their training data and hence can perpetuate stereotypes or normalize a set of linguistic features at the expense of linguistic diversity.

- **Digital Divide:** The lack of adequate access to devices, internet connectivity, and technical support has further deepened the educational inequalities that already existed, especially among students from rural or low-income communities.

In one case, a teacher refused to use an AI platform due to unclear data governance policies and unresolved concerns about student data security. This confirms that ethical considerations must be integrated into a teacher's broader TPACK profile; understanding technology means not only knowing how to operate it, but also recognizing its systemic risks, structural biases, and equity implications in diverse classroom settings.



Strategic Recommendations

To navigate the tensions between technology and pedagogy, and to bridge the clear gaps between theoretical potential and classroom practice, the following strategic measures are recommended:

1. For Educators: Continuous professional development must be prioritized. Training programs should move beyond basic tool operation (Technological Knowledge) to focus on the holistic development of TPACK—equipping teachers with the expertise to critically evaluate when, why, and how AI can enrich or hinder specific linguistic outcomes.

2. For Curriculum Developers: There must be active collaboration between curriculum architects and technology designers. This ensures that AI systems are purposefully aligned with national curriculum standards, linguistic benchmarks, and formal assessment criteria rather than functioning as disruptive, external additions.

3. For Policymakers: Immediate frameworks for robust data governance and algorithmic privacy must be enacted to protect student data. Furthermore, intentional funding and infrastructure support must be directed toward low-income and rural schools to prevent the digital divide from widening into an unbridgeable educational chasm.

4. For Researchers: Longitudinal and experimental classroom studies are essential to track how AI impacts long-term language proficiency and to observe how teachers dynamically develop their TPACK frameworks through sustained classroom application.

Conclusion

This study underscores that while artificial intelligence offers transformative opportunities to personalize learning, stimulate engagement, and provide instantaneous feedback in L2 English classrooms, its successful deployment is fundamentally contingent upon human-centered design. The true value of AI in education cannot manifest in a vacuum; it requires a highly qualified teaching workforce possessing a mature blend of technological, pedagogical, and content knowledge (TPACK). It demands a curriculum that is structurally aligned with technological tools, and a policy landscape deeply committed to data privacy and equitable access.

While this study is bounded by its qualitative, literature-based approach and limited case selection, it establishes a foundational baseline for future inquiry. To



fully capture the evolving landscape of AI in education, subsequent research must transition toward longitudinal methodologies and experimental designs that contrast diverse integration models. Ultimately, if guided by intentional pedagogical design and ethical responsibility, artificial intelligence can serve as a powerful catalyst for achieving an inclusive, adaptive, and highly effective paradigm of language education.

Endnotes: Profile of Classroom Case Studies

Note 1: Case Study 1 (Secondary School Level) focused on the deployment of an automated writing assistant (e.g., Grammarly/Quillbot) integrated during the drafting stage of argumentative and descriptive essays to provide real-time syntactic support.

Note 2: Case Study 2 (Higher Secondary Level) examined an AI-driven speech evaluation tool (e.g., ELSA Speak) utilized to provide immediate phonetic, fluency, and intonation metrics to students preparing for oral proficiency exams.

Note 3: Case Study 3 (Formative Assessment Scenario) analyzed an adaptive learning platform that customizes grammar and vocabulary reinforcement exercises based on diagnostic pre-tests, tracking student progression over an academic term.

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