



Challenges and Opportunities of English Education in the AI Era

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Abstract

With the rapid advancement of artificial intelligence technology, English education confronts a dual landscape of opportunities and challenges. This paper systematically investigates core issues in English instruction within the AI era, encompassing the pragmatic value of some commonly used AI tools, the transformation of teachers' roles from a traditional context to an AI context, the equilibrium between human-computer interaction and authentic interpersonal connections, and the potential risks of using AI. This review suggests that AI tools mitigate inherent limitations in traditional education, including constrained practice opportunities, delayed feedback mechanisms, and inadequate personalization. Moreover, they enable immersive, scenario-based learning and data-driven instructional adaptation. Conversely, they introduce significant threats to academic integrity, potential linguistic skill degradation, cultural bias infiltration, and systemic ethical vulnerabilities. Consequently, a paradigm shift is required, repositioning educators as facilitators of critical thinking and digital literacy. This paper provides theoretical frameworks and practical pathways, advocating for a nuanced, balanced integration of technology to foster the sustainable evolution of English education in the AI era.

Keywords

Artificial Intelligence; English education; teacher roles; Human-Computer collaboration; potential risks

1. Introduction

In contemporary educational contexts, artificial intelligence technology is reshaping educational paradigms. Within the domain of English language education, particularly in second language acquisition (SLA) contexts, inherent challenges have long persisted, such as limited student practice opportunities, delayed instructor feedback, and barriers to personalized instruction (Chapelle, 2001; Hattie & Timperley, 2007). The advent of intelligent conversational agents (e.g., ChatGPT, DeepSeek) has introduced novel possibilities for English education, as these AI tools can simulate authentic dialogues and deliver real-time feedback, thereby expanding students' opportunities for immersive language practice (Mohammed et al., 2025). Nevertheless, concomitant challenges persist. While AI tools should not be overstated (Selwyn, 2019), the foundational goals of education—such as fostering critical thinking—must be preserved, necessitating the development of novel theoretical frameworks for AI-education integration.

Within the domain of Second Language Acquisition (SLA), particularly English language teaching (ELT), the integration of artificial intelligence presents a dual landscape of opportunities and challenges (Özdere, 2023). Specifically, while AI technologies have introduced innovative instructional tools, they simultaneously raise critical

inquiries: What categories of AI tools are applicable to English language instruction? How should educators redefine their roles within AI-integrated pedagogical environments? What strategies facilitate the balance between human-computer interaction and authentic interpersonal connection? And what latent educational risks may emerge from AI implementation? These critical issues necessitate rigorous examination, suggesting that current teacher training must evolve beyond simple tool instruction to encompass deep pedagogical integration. For English language educators, this analysis holds significant implications for pedagogical practice. By comprehending the application modalities of AI in English instruction, educators can enhance instructional preparedness, optimize the utilization of technical tools, and develop vigilance toward potential risks.

2. Typologies and Functional Applications of AI Tools in Language Education

The integration of Artificial Intelligence (AI) in language education has fostered a diverse ecosystem of tools, which are actively redefining language pedagogy and acquisition through unprecedented degrees of personalization, instructional efficiency, and enhanced accessibility. From adaptive learning platforms that tailor content difficulty to student performance data, to generative conversational agents capable of providing authentic, real-time practice, AI is fundamentally altering the teaching landscape. This section moves beyond general discussion to specifically delineate the typologies and core functionalities of these distinct AI tools currently deployed in modern language education, providing a necessary map for navigating this rapidly evolving technological environment.

Digital platforms can be used to leverage AI algorithms to customize learning pathways. For instance, Duolingo employs data analytics on individual learning patterns to calibrate lesson difficulty dynamically (Betancourt et al., 2025). Advanced applications can construct detailed learner profiles and generate tailored instructional plans, transcending the traditional “one-size-fits-all” paradigm to facilitate individualized instruction (Luckin & Holmes, 2016). Conversational agents such as Talkpal AI can simulate authentic conversational interactions, providing real-time corrective feedback on linguistic errors (Warschauer et al., 2023). Artificial intelligence facilitates educators in efficiently designing instructional materials. Tools such as MagicSchool AI and Twee can generate lesson plans, quizzes, and reading comprehension exercises based on specific topics or text inputs (Kasneci et al., 2023). In practical applications, educators may utilize OCR technology to digitize textbook content, which can then be input into AI systems like Gemini to rapidly generate supplementary materials such as picture books or assessments, thereby substantially improving lesson preparation efficiency (Hao et al., 2024).

The AI tools can also deliver automated, granular feedback mechanisms. Grammarly functions as an AI-driven writing assistant, evaluating grammar, stylistic consistency, and clarity, while providing explanatory corrections to facilitate learning (Bahari, 2026). For oral proficiency, platforms including AI Presto and the Ali Cloud Intelligent Education Platform offer multi-dimensional pronunciation assessment, evaluating accuracy, fluency, and intonation in real time (Altafi et al., 2025). These systems enable automated scoring and highlight specific lexical items requiring improvement, thereby liberating educators to deliver more constructive and targeted feedback. Tools such as Sonix facilitate comprehension of spoken content by learners through accurate transcription of audio/video lectures into searchable text, multi-language translation, and subtitle generation (Paquot & Tracy-Ventura, 2023). This functionality is paramount for non-native speakers, learners with diverse needs, and the creation of reviewable study materials from live instruction, thereby transforming the accessibility and utilization of educational content. The AI tools can also be used to construct immersive practice environments. LanguaTalk facilitates connections between learners and AI conversation partners for structured speaking practice (Rani, 2024). Emerging technologies, such as “Digital Human” instructors and virtual immersive environments (e.g., IBM’s Conversational Interaction Repository), can situate learners within simulated cultural contexts—such as a Chinese restaurant—to engage in natural dialogue, integrating immersive experiences with gamified learning modalities (Zhou et al., 2024).

For effective integration of these tools, educators and institutions should at least address three key considerations: First, identify core instructional needs by determining whether the primary objective is to provide personalized student practice, alleviate instructor workload in content creation/assessment, or enhance content accessibility for diverse learners. Second, evaluate integration compatibility and cost-effectiveness by assessing tool interoperability with existing workflows (e.g., Learning Management Systems) and exploring educational pricing models or free trial offerings, which are commonly available across platforms. Third, implement the “AI + Human” collaborative model, wherein AI handles repetitive tasks (e.g., drilling exercises, initial scoring, transcription), thereby liberating educators to focus on higher-order pedagogical activities such as facilitating critical discussions, delivering nuanced

feedback, and providing cultural instruction. In summary, the diverse ecosystem of AI tools in language education offers tailored solutions to various instructional and learning challenges. By strategically integrating these tools while centering educator expertise, stakeholders can construct more efficient, inclusive, and engaging language learning ecosystems.

3. Redefining Teacher Roles in AI-Integrated English Pedagogical Environments

Within AI-integrated English education environments, educators must transition from sole knowledge disseminators to orchestrators, mentors, and designers of the learning experience (Zou et al., 2025). This critical role evolution enables educators to fully leverage AI's technical strengths—such as instantaneous feedback and data analytics—while simultaneously prioritizing uniquely human competencies. By stepping back from rote instruction, teachers can focus on fostering nuanced skills like complex critical thinking, cultural interpretation, and empathetic communication. This strategic shift ensures that technology enhances, rather than replaces, the essential interpersonal dynamics that drive deep second language acquisition.

In traditional pedagogical frameworks, educators functioned primarily as sole content disseminators; their classroom authority rested upon the delivery of information deemed necessary for student mastery. However, within AI-integrated environments, their role undergoes a fundamental evolution, transitioning into that of learning designers and curators (Kayal, 2024). This new professional mandate entails selecting and judiciously integrating appropriate AI tools—such as sophisticated conversational bots, automated grammar checkers, or advanced text synthesizers—directly into meticulously planned instructional blueprints. Crucially, this involves more than mere tool adoption; it requires curating and contextualizing the raw, AI-generated materials, ensuring they align precisely with specific curriculum goals and student needs.

Historically, teachers served as uniform task assigners, providing the same work to every student under the assumption of a standardized learning pace. In AI-integrated settings, this model collapses. Educators transition to becoming personalization architects—skilled professionals who leverage AI-driven analytics to diagnose individual student competencies and deficiencies with unprecedented granularity. This diagnostic capability empowers them to design truly differentiated learning pathways and deploy targeted, timely interventions that address specific knowledge gaps immediately, rather than waiting for summative assessments (Takona, 2024).

Furthermore, the function of feedback undergoes a significant metamorphosis. Traditionally positioned as the primary, often delayed, feedback providers, educators in AI-enhanced contexts now assume the indispensable role of feedback facilitators and mentors. While tools like Grammarly or specialized linguistic agents can instantly correct surface-level errors (syntax, mechanics), the human educator's role becomes guiding students in interpreting this machine-generated data. The teacher then delivers the high-level, nuanced assessments that AI currently struggles with: evaluating the quality of creativity, the robustness of argumentation, and the sensitivity of cultural contextualization in student output (Shuaibu et al., 2024). This requires a deep, interpretive human judgment that AI cannot replicate.

The shift in classroom management is equally profound. Whereas teachers once operated primarily as classroom managers, enforcing rules and monitoring compliance, AI integration redefines them as human skills catalysts. In this capacity, educators are responsible for orchestrating complex activities that demand interpersonal dexterity—fostering robust discussions, designing high-stakes debates, and managing collaborative projects that necessitate empathy, complex critical thinking, and acute cultural nuance—domains where current AI exhibits inherent limitations (Dittmar, 2026). The classroom becomes a laboratory for practicing essential human literacies that technology cannot teach or assess effectively on its own.

Finally, moving beyond localized classroom management, educators transition from individual instructors to data-informed guides. They are tasked with analyzing aggregated metrics streamed from various AI platforms to monitor class-wide learning trends, predict potential structural challenges before they manifest, and implement evidence-based instructional adjustments across the entire cohort (Sajja et al., 2025). This holistic, analytical oversight allows for continuous pedagogical improvement, moving instruction away from intuition and toward systematic, data-supported practice, ultimately maximizing the impact of both human expertise and artificial intelligence.

To effectively navigate these evolving roles, we recommend that educators adopt the following strategic orientations and practices. Firstly, assume the role of a critical evaluator by developing competencies to rigorously assess AI tools for pedagogical validity, accuracy, and learner-specific suitability. For instance, prior to implementing an

AI conversation partner, educators should validate its linguistic complexity and topic relevance against learner proficiency levels. Secondly, prioritize non-AI-replicable competencies by reallocating classroom time to advanced human-centric skills that exceed AI capabilities. These include: critical analysis (e.g., evaluating bias or perspective in AI-generated texts), creative expression (e.g., crafting personal narratives or persuasive essays emphasizing voice and originality), social interaction (e.g., facilitating role-plays, group discussions, and presentations), digital and AI literacy instruction (explicitly education responsible and effective AI tool utilization), and embracing a co-education paradigm (framing AI as a pedagogical assistant for drill, practice, and preliminary feedback, thereby liberating educators to focus on relationship-building, student motivation, and nuanced compassionate guidance). Fundamentally, the educator's paramount function becomes orchestrating the synergy between human and artificial intelligence, ensuring technology enhances rather than supplants the interpersonal connection central to language acquisition.

4. Navigating the Interface Between Human-Computer Interaction and Authentic Interpersonal Connection

Effectively navigating the interplay between Human-Computer Interaction (HCI) and authentic interpersonal connection necessitates a balanced approach that prioritizes both technological enhancement and relational preservation (Meunier et al., 2022). While AI tools offer unmatched efficiency and data-driven practice, educators must consciously design activities that safeguard the nuances of human communication—empathy, cultural context, and subtle negotiation of meaning. The goal is not replacement, but strategic integration, ensuring that digital interaction scaffolds, rather than supplants, the vital face-to-face exchanges crucial for holistic language development.

Technology presents a potent duality regarding human connection. On one hand, it significantly facilitates interpersonal connectivity by collapsing geographical barriers through tools like video conferencing, instant messaging platforms, and shared collaborative digital workspaces, thereby enabling communication with and access to previously inaccessible communities. Conversely, this power carries risk: poorly designed or excessively utilized technology often supplants meaningful in-person communication, encourages superficial engagement driven by transactional metrics, or introduces pervasive distractions during vital face-to-face interactions (Anas et al., 2020). Therefore, effective Human-Centric HCI frameworks must strictly prioritize the augmentation of interpersonal relationships rather than their replacement (Omer, 2024).

This augmentation manifests in tools that serve as enablers, not mediators. Examples include shared digital whiteboards utilized for genuine collaborative ideation or coordination applications that efficiently facilitate in-person meetups. Fundamentally, empathy must remain central to interface design considerations. Interfaces that actively foster perspective-taking—such as immersive virtual reality experiences designed to promote empathetic understanding across diverse cultural viewpoints—or applications that support emotional awareness, like those allowing for quick interpersonal check-ins regarding mental well-being, can significantly enhance the authenticity and depth of human interaction.

Digital communication modalities frequently lack nonverbal communicative cues (e.g., prosodic features, kinesics), contributing to interpretive ambiguities (Venter, 2019). Emerging HCI innovations—such as advanced avatar systems in virtual environments or haptic feedback mechanisms—endeavor to mitigate this gap. Authenticity necessitates vulnerability and presence; interface design should minimize cognitive burden to enable users to focus on reciprocal engagement rather than technological mediation. Users should develop digital mindfulness practices, discriminating between technological mediation for connectivity and intentional disengagement to nurture in-person relationships. HCI design can promote salutogenic interaction patterns through features that encourage focused engagement or prompt periodic breaks from digital interaction. The sociocultural impact of HCI is contingent upon its normative usage patterns. Establishing explicit norms—such as device-free communal meals or video conferencing etiquette—facilitates the preservation of authentic interaction. Design interventions can subtly influence these normative behaviors—for instance, applications that deter multitasking during synchronous communication.

Beyond mere communication, certain HCI applications possess the capacity to cultivate self-awareness and emotional intelligence—crucial components for effective language use. Tools such as mood-tracking applications, which prompt users toward enhanced emotional articulation and reflection, serve as powerful catalysts for introspection (Mejia & Sargent, 2023). Within broader interpersonal contexts, shared digital experiences, including collaborative gaming or synchronized media consumption, can successfully engender shared meaning-making. However, this relational benefit is contingent; it requires that the shared digital event actively precipitates meaningful

dialogue that extends beyond the screen-mediated interaction itself. If technology merely provides a passive viewing experience without prompting subsequent human interpretation or debate, the opportunity for genuine relational deepening is lost.

5. Risks in AI Integration for English as a Foreign Language Education

Integrating artificial intelligence into English as a foreign language (EFL) education, while promising, presents multifaceted and serious risks (Karan & Angadi, 2023). These challenges are complex and demand careful navigation by educators and developers alike. The primary concerns can be robustly categorized into four distinct domains: significant threats to learning integrity (e.g., cheating via generative text), potential degradation of foundational language proficiency as reliance grows, critical challenges related to linguistic authenticity and inherent bias embedded within AI models, and crucial systemic concerns regarding equity, access, and ethical data use.

Over-reliance on AI tools for language tasks may diminish learner agency, increase vulnerabilities to academic misconduct, erode intrinsic motivation, promote superficial engagement, and facilitate academic dishonesty (Dang, 2025). The most critical risk is AI's potential to circumvent the essential cognitive struggle inherent in language acquisition. For instance, while AI writing assistants such as Grammarly can reduce surface-level errors, students may utilize them to generate or extensively rewrite text rather than engaging in critical self-revision. Similarly, instant translations and explanations may preclude learners from grappling with unfamiliar vocabulary or complex grammatical structures—a process integral to long-term memory consolidation and skill development. This over-dependence can precipitate a decline in metacognitive competencies, including the ability to self-monitor, evaluate, and adjust learning strategies (Avsheniuk et al., 2025).

Excessive utilization of translation tools and passive consumption of AI-generated responses may precipitate a decline in cognitive engagement, weaken critical thinking capacities, impede problem-solving abilities, and hinder the construction of deep linguistic knowledge (Georgiou, 2025). AI-generated output exhibits formulaic and repetitive tendencies, lacking linguistic and cultural authenticity (Godwin-Jones, 2024). Language models, trained on datasets containing inherent biases, may perpetuate cultural stereotyping. Such systems often produce stilted language, constrain expressive range, and present risks of cultural misrepresentation and implicit bias. AI models frequently generate text that is syntactically correct but culturally homogenized and stylistically uniform, lacking the nuanced expressivity characteristic of human-produced language. Over-reliance on AI thus risks inculcating learners with a standardized, repetitive form of English. More critically, many AI models are trained on data predominantly reflecting Western cultural contexts and perspectives, potentially embedding ideological biases that subtly shape learners' worldviews. Hallucinations and factual inaccuracies represent prevalent risks in AI systems, which exacerbate existing digital divides and raise significant data privacy concerns (Danyaro et al., 2025). Learners may be exposed to incorrect information, unequal access to AI tools may widen educational achievement gaps, and personal data may be subject to inappropriate exploitation.

Mitigating these risks necessitates a strategic, human-centered framework. Firstly, establishing clear parameters for AI functionality: educators must explicitly position AI as a supplementary tool rather than a replacement for human instruction. For instance, AI can function as a brainstorming collaborator, draft reviewer, or conversation simulator, rather than serving as the primary source of knowledge or feedback. Secondly, prioritizing critical evaluation competencies: education in AI literacy is imperative, with learners trained to rigorously interrogate AI outputs through questions such as “Is this phrasing linguistically natural?” “What cultural perspectives may be absent?” and “Can this information be independently verified?”

Thirdly, establish regulatory frameworks. Educational institutions require explicit policies addressing academic integrity, data privacy, and equitable access. This includes conducting bias audits of AI tools, implementing robust student data protection measures, and ensuring all learners have access to necessary resources and support.

Ultimately, the overarching objective within this evolving educational paradigm is to establish a robust and synergistic collaboration between human expertise and artificial intelligence. In this ideal partnership, AI assumes the burden of routine, scalable tasks—such as automated grading, adaptive drilling, and delivering high-volume practice opportunities. This operational shift is essential because it actively liberates human educators to concentrate on their irreplaceable core competencies. These uniquely human domains include fostering authentic, spontaneous communicative interaction, cultivating deep cultural literacy, providing empathetic engagement, and guiding complex critical thinking processes—elements that remain the foundational, indispensable cornerstones of meaningful language education.

6. Conclusion

This comprehensive study systematically reviews the intricate challenges and emerging opportunities inherent in English oral instruction within the nascent artificial intelligence era. We analyze the pedagogical utility of AI technology in this domain, charting the critical transformation of educators' roles, examining the complex interplay between human-computer interaction, and identifying inherent systemic risks. While AI tools have proven highly effective in mitigating long-standing limitations of traditional English education—such as severely constrained practice opportunities, delayed feedback mechanisms, and insufficient personalization—they simultaneously introduce novel paradigms and significant challenges, particularly concerning educators' necessary role transformation and the dynamics of human-computer interaction. Nevertheless, instructional vigilance remains paramount regarding the systemic risks posed by unchecked AI adoption, including the surge in academic misconduct, the potential for linguistic skill regression due to over-reliance, and the critical danger of cultural bias propagation.

In synthesis, AI introduces powerful, personalized innovations poised to revolutionize spoken English pedagogy. Crucially, however, it cannot supplant the central, irreplaceable role of human educators. Therefore, future instructional frameworks must explicitly implement an “AI-human” collaborative model. There are some teaching implications. Educators should strategically delegate routine assessment and initial feedback to AI while reserving class time for high-value activities such as nuanced communicative role-plays, socio-cultural discussions, and complex argumentative debates. This model leverages technological advancements to enhance operational efficiency while preserving the teacher-led cultivation of empathy, creativity, and critical thinking, ultimately achieving a harmonious integration of efficiency and instructional depth in language education.

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