Transforming English Language Teaching with AI: Challenges, Opportunities and Future Directions.

Dr. Dandu Swamy
Associate Professor, Dept. of English, Giriraj Govt. Degree College
Nizamabad, Telangana

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INCLUSIVE AND ACCESSIBLE ENGLISH LANGUAGE TEACHING WITH AI

Dr.Dandu Swamy
Associate Professor of English, Girraj Government college (A) Nizamabad

Abstract

The integration of Artificial Intelligence (AI) into English Language Teaching (ELT) marks a paradigmatic shift from one-size-fits-all pedagogy to dynamically responsive learning environments. This theoretical paper explores the affordances and limitations of AI in fostering inclusive and accessible ELT for heterogeneous classrooms characterized by diverse linguistic, cultural, and educational backgrounds. Drawing on sociocultural theory and universal design for learning (UDL), the paper argues that AI tools—including text-to-speech (TTS), speech-to-text (STT), adaptive learning algorithms, and intelligent tutoring systems—can personalize instruction, bridge communication gaps, and support learners with disabilities. However, authentic social interaction, cultural nuance, and emotional encouragement essential for language acquisition are risks of over-reliance on AI being diminished. A complementary model is proposed by the paper wherein teacher agency is augmented rather than replaced by AI. Key theoretical gaps are identified, including insufficient attention being given to AI's role in preserving cultural context and the lack of frameworks for collaboration between teachers and AI. The research questions are examined to see how inclusion can be promoted by AI without compromising communicative authenticity. Expected outcomes include a theoretical taxonomy of AI applications for accessibility and a set of pedagogical principles for balanced integration. It is concluded by the paper that inclusive ELT with AI is most effective when individualization and feedback are managed by technology, while mentorship, cultural mediation, and affective support are retained by teachers.

Keywords: Artificial Intelligence, heterogeneous classroom, cultural context, TTS, STT, inclusive ELT, adaptive learning, teacher agency, universal design for learning, human-AI collaboration.

Introduction

The contemporary English language classroom is increasingly heterogeneous, encompassing learners with varying proficiency levels, learning styles, sensory or cognitive disabilities, and distinct cultural-linguistic backgrounds. This diversity is often struggled with by traditional pedagogies, leading to the marginalisation of slower learners, advanced learners left unchallenged, and barriers

to participation faced by students with disabilities. As a transformative force in education, Artificial Intelligence (AI) has emerged, offering unprecedented opportunities for English Language Teaching (ELT) to be redesigned as an inclusive and accessible practice. Unlike earlier computer-assisted language learning (CALL) systems that were followed by rigid, linear pathways, AI-driven tools can be adapted in real time to individual learner performance, preferences, and needs. Personalised scaffolding that was previously impossible in large classrooms is enabled by speech recognition, automated translation, intelligent tutoring, and learning analytics. For learners with visual impairments, written text is converted into audible output by Text-to-Speech (TTS); for hearing-impaired students, spoken language is transcribed into written form by Speech-to-Text (STT). Lesson difficulty is modified by adaptive learning algorithms based on ongoing assessment, ensuring that each student operates within their zone of proximal development.

Yet, legitimate concerns are accompanied by this technological promise. Language learning is fundamentally viewed as a social, communicative, and culturally embedded process. The affective dimensions of human interaction—empathy, humour, shared cultural references, or the spontaneous negotiation of meaning—cannot be replicated by AI, despite its computational power. A risk is posed that learners who are technically accurate but communicatively impoverished may be produced by the over-integration of AI, lacking the pragmatic competence and cultural sensitivity required for real-world language use. This theoretical paper addresses a central tension: how can ELT practitioners harness AI's capabilities for inclusion and accessibility without sacrificing the authentic, relational core of language learning? The paper rejects both techno-determinism (AI as complete solution) and techno-scepticism (AI as threat) in favour of a complementary model. It argues that AI and teachers possess distinct, non-overlapping strengths: AI excels at personalisation, accessibility, and instantaneous feedback; teachers excel at fostering communication, providing emotional support, and mediating cultural context. Their integration, rather than substitution, defines inclusive and accessible ELT for the digital age.

Literature Review & Identified Gaps

1) Literature Review

1) Theoretical Foundations (UDL and Sociocultural Theory)

Universal Design for Learning (UDL) provides a robust framework for inclusive education, advocating multiple means of engagement, representation, and action/expression (CAST, 2018). AI aligns closely with UDL: TTS and STT offer alternative representations of content; adaptive algorithms provide varied action pathways; and intelligent tutoring systems sustain engagement through personalised challenge levels. However, UDL has been critiqued for insufficient attention to cultural diversity—a gap that becomes critical in multilingual

ELT contexts. Sociocultural theory (Vygotsky, 1978) emphasises that language learning occurs through social interaction, mediated by more capable peers or teachers. AI can serve as a mediating tool but cannot replace the intersubjective space where cultural meanings are co-constructed. This theoretical tension remains underexplored: can AI-mediated personalisation coexist with socially situated learning, or do they operate in opposing paradigms?

2) **AI Applications for Accessibility in ELT**

Empirical studies have demonstrated the utility of specific AI tools. Reading comprehension for dyslexic learners and those with visual impairments is improved by TTS (Wood et al., 2018). A verbal response is enabled for learners with motor difficulties through STT rather than through typing, resulting in a reduction of extraneous cognitive load. Immediate, granular corrections on phonemes, stress, and intonation are provided by speech recognition for pronunciation feedback, as seen in tools like ELSA Speak (Liakin et al., 2017). Content difficulty is adjusted by adaptive learning platforms (e.g., Duolingo, Carnegie Speech) based on learner accuracy and response times, ensuring that challenges are encountered by advanced learners while repetition and scaffolding are received by struggling learners. Initial comprehension gaps can be bridged by AI-powered real-time translation (e.g., Microsoft Translator) in multilingual classrooms, allowing participation by learners before full proficiency in English is achieved.

3) **The Teacher's Role in AI-Enhanced ELT**

A growing body of literature emphasises that AI should augment, not replace, teachers. Luckin et al. (2016) argue that AI's strength lies in handling data-intensive tasks—tracking progress, diagnosing errors, generating practice items—thereby freeing teachers to focus on relational pedagogy. In inclusive settings, teachers use AI-generated analytics to identify learning difficulties early and design targeted interventions. However, most existing models remain teacher-centred, with AI as a passive reporting tool rather than an active collaborative partner.

2) Identified Gaps:

Despite growing interest, four significant theoretical gaps persist:

- **Cultural context and AI:** Most AI tools are developed in Anglophone, Western contexts, embedding assumptions about communication styles, discourse norms, and politeness strategies. How AI can be adapted to diverse cultural contexts in ELT remains undertheorised.
- **Authentic communication versus AI mediation:** While AI can simulate conversation (e.g., chatbots), simulation is not authentic interaction. The literature lacks a theoretical distinction between

communicative competence developed through human versus AI interlocutors.

- **Teacher-AI role differentiation:** Existing frameworks describe what teachers and AI do but not why certain tasks belong to one rather than the other based on pedagogical principles. A principled model of task allocation is missing.
- **Emotional and motivational dimensions:** AI provides corrective feedback but cannot offer encouragement, empathy, or shared joy in language discovery. How to design AI systems that support affective needs without artificial emotional mimicry is unresolved.

This paper addresses gaps (1), (3), and partially (2) by proposing a theoretical model based on complementary strengths.

Objectives

The primary objectives of this theoretical research are:

- To conceptualise a complementary model of AI and teacher collaboration for inclusive and accessible ELT, specifying the distinct roles of each based on pedagogical and ethical principles.
- To theorise how AI tools (TTS, STT, adaptive algorithms, speech recognition) can address learner diversity in heterogeneous classrooms without erasing cultural and communicative authenticity.
- To identify the conditions under which AI-mediated instruction supports versus hinders the development of pragmatic and sociolinguistic competence.
- To propose a set of design principles for culturally responsive AI applications in multilingual ELT contexts.
- To articulate the limits of AI in providing emotional encouragement and authentic social interaction, thereby justifying the irreplaceable role of the human teacher.

Research Questions

Given the theoretical nature of this paper, research questions (RQs) are formulated rather than hypotheses, as hypotheses typically require empirical testing.

- **RQ1:** How can AI tools be theoretically positioned to personalise learning pathways, provide accessibility (via TTS/STT), and deliver instant corrective feedback while preserving the teacher's role as primary mediator of communication, cultural context, and emotional support?
- **RQ2:** What are the theoretical mechanisms through which AI might inadvertently reduce authentic communication experiences, and how can instructional design mitigate this risk?
- **RQ3:** Under what conditions does AI-supported ELT promote independent language development, and when does it create dependency that limits learner agency?

- **RQ4:** How can the concepts of TTS and STT be extended beyond sensory accessibility to support diverse learning styles and proficiency levels in heterogeneous classrooms?
- **RQ5:** What pedagogical principles should govern the allocation of tasks between AI and teachers to maximise inclusivity without compromising the social foundations of language acquisition?

Methodology

1) **Research Design**

This study adopts a theoretical research design (also known as conceptual or non-empirical design). Unlike empirical research that collects primary data, theoretical research develops, refines, or extends conceptual frameworks through logical analysis, synthesis of existing literature, and deductive reasoning (Swedberg, 2014). The design is exploratory and integrative, aiming to produce a novel model of AI-teacher collaboration for inclusive ELT.

2) **Data Sources**

Data sources comprise peer-reviewed theoretical and empirical articles from 2015–2025 in the following domains:

- AI in education (journals: Computers & Education, British Journal of Educational Technology)
- Computer-assisted language learning (CALICO Journal, Language Learning & Technology)
- Inclusive education and UDL (International Journal of Inclusive Education)
- Sociocultural and second language acquisition theory (Modern Language Journal, TESOL Quarterly)

Additionally, technical documentation of AI tools (TTS, STT, adaptive platforms) and policy documents on accessible digital learning (e.g., UNESCO guidelines) are included as secondary sources.

3) **Research Approach**

The approach is conceptual synthesis combined with thematic analysis of theoretical constructs. The process involves:

a) Mapping existing claims about AI's affordances for inclusion and accessibility.

b) Identifying contradictions and gaps (as presented in Identified Gaps Section).

c) Deriving theoretical propositions through logical reasoning from first principles (e.g., from sociocultural theory: learning requires social interaction; therefore AI cannot fully replace teachers).

d) Constructing a complementary model by allocating ELT tasks to either AI or teachers based on the nature of the task (data-driven vs. relational, individual vs. social, corrective vs. affective).

No human subjects, surveys, or experiments are involved. Validity is established through theoretical coherence, explanatory power, and alignment with established learning theories.

Discussion

1) The Complementary Model: AI and Teacher as Co-Constructors

The central theoretical contribution of this paper is the **Complementary Capacities Model (CCM)** for inclusive ELT with AI. The model posits that AI and teachers possess fundamentally different but complementary capacities. Inclusion and accessibility are maximised when each operates within its domain of strength.

Domain	AI Capacity	Teacher Capacity
Personalisation	Adaptive algorithms adjust difficulty, content, and pace per learner	Interprets AI analytics to make holistic decisions about learning pathways
Accessibility	TTS, STT, real-time translation remove sensory and linguistic barriers	Ensures accessible materials are culturally and contextually appropriate
Feedback	Instant, granular corrections on pronunciation, grammar, vocabulary	Provides pragmatic feedback on appropriateness, tone, and cultural nuance
Communication	Simulated practice (chatbots) for fluency without social anxiety	Facilitates authentic interaction, negotiation of meaning, collaborative tasks
Cultural context	Can provide factual cultural information	Mediates deep cultural meanings, contrasts, and critical reflection
Emotional support	None (artificial emotional responses lack genuine empathy)	Encouragement, motivation, building learner confidence, addressing anxiety
Early identification of difficulties	Learning analytics flag patterns of errors or disengagement	Designs targeted interventions based on flagged data plus holistic observation

The model rejects either-or thinking. For a struggling learner with weak pronunciation, AI provides immediate, repeatable, non-judgmental practice. The teacher then integrates corrected pronunciation into communicative pair work,

embedding technical accuracy within authentic use. For a visually impaired learner, TTS enables independent reading; the teacher provides verbal descriptions of visual cultural materials (e.g., images, gestures) that TTS cannot interpret.

2) **Addressing Heterogeneity: How AI Manages Diversity**

Heterogeneous classrooms—mixing slow and advanced learners, different first languages, varied disabilities—present a classic dilemma: whole-class instruction fails to address individual needs, while complete individualisation is logistically impossible. AI resolves this through parallel personalised pathways. Advanced learners receive compressed reviews and challenging extensions (e.g., analysing authentic texts). Struggling learners receive additional scaffolding, reduced pace, and repeated practice. Both work simultaneously within the same classroom, with AI managing the differentiation. The teacher circulates, providing targeted human support where AI cannot—for example, explaining a culturally specific idiom that the translation tool rendered literally and nonsensically.

Speech-to-text benefits not only hearing-impaired students but also learners with auditory processing difficulties or those who organise thoughts better through writing before speaking. Text-to-speech assists not only visually impaired learners but also beginning readers who benefit from simultaneous audio-text presentation. Thus, accessibility tools designed for specific disabilities often improve learning for all—a core UDL principle.

3) **Merits and Demerits Revisited Theoretically**

- **Merits** identified in the literature (extra practice, self-paced progress, immediate corrections) are confirmed theoretically. AI's ability to provide unlimited, low-stakes practice reduces affective barriers—learners can repeat pronunciation attempts without fear of embarrassment. For slow learners, this builds mastery; for advanced learners, it provides challenge without holding them back.
- **Demerits** require more nuanced theoretical treatment. The claim that AI "cannot fully replace natural conversation" is correct but incomplete. The deeper issue is that AI-mediated interaction, no matter how sophisticated, lacks **intersubjectivity**—the shared intentional awareness that characterises human communication (Tomasello, 1999). Learners may develop transactional competence (ordering food, asking directions) but struggle with interactional competence (turn-taking, humour, politeness, repairing misunderstanding). Therefore, the risk is not merely missing "authentic communication" but developing a distorted model of what language is for.

Furthermore, cultural context is not merely information but **enacted values**. Politeness in Japanese English, directness in German English, and indirectness in Indian English are not reducible to translation rules. Teachers

mediate these differences through guided reflection, role-play, and contrastive analysis—activities currently beyond AI's capacity.

4) **Teacher Agency and AI as Augmentation**

A persistent fear is that AI will deskill teachers. The CCM argues the opposite: AI increases teacher capability by removing routine, data-intensive tasks (tracking errors across 40 students, generating personalised worksheets). This allows teachers to focus on high-leverage activities: facilitating discussion, designing culturally rich tasks, providing emotional encouragement, and making holistic judgments that integrate academic, social, and affective data. The paper proposes the principle of teacher final decision authority: AI suggests learning recommendations, but teachers make final decisions. This preserves professional autonomy while leveraging AI's analytical power. For example, AI may flag a student as "at risk" based on declining accuracy. The teacher investigates further—perhaps the student is facing personal difficulties or cultural adjustment issues—and decides on intervention. AI provides data; teachers provide wisdom.

Expected Outcomes

This theoretical paper yields the following expected outcomes:

1) **Complementary Capacities Model (CCM):** A theoretically grounded framework specifying distinct roles for AI and teachers in inclusive ELT, applicable to curriculum design, teacher training, and AI tool development,
2) **Taxonomy of AI Applications for Accessible ELT:** A classification of AI tools (TTS, STT, adaptive algorithms, speech recognition, real-time translation) mapped to specific learner needs (sensory disabilities, proficiency diversity, learning style variation, multilingual support),
3) **Set of Design Principles for Culturally Responsive AI:** Principles including: (a) AI must support multiple varieties of English, not only prestige varieties; (b) translation tools should flag culturally ambiguous items for teacher mediation; (c) adaptive algorithms should include cultural background as a variable, not only linguistic accuracy,
4) **Risk Mitigation Framework for AI-Induced Communication Loss:** Practical strategies to ensure AI-supported practice is followed by authentic human interaction, including paired conversational tasks, classroom discussions, and reflective journals comparing AI and human conversations,
5) **Teacher Professional Development Guidelines:** Competencies teachers need to work effectively with AI, including interpreting learning analytics, selecting appropriate AI tools for specific disabilities, and maintaining cultural and affective mediation.

Conclusion

This paper has argued that AI offers transformative potential for inclusive and accessible English Language Teaching, but only when integrated within a human-

centred, pedagogically principled framework. The Complementary Capacities Model demonstrates that AI and teachers are not competitors but collaborators, each addressing different dimensions of the learning process. AI personalises, adapts, provides accessibility via TTS and STT, and delivers instant corrective feedback. Teachers provide communication practice, emotional encouragement, cultural context, and the irreplaceable intersubjectivity of human interaction. In heterogeneous classrooms—marked by diverse proficiencies, learning styles, disabilities, and cultural backgrounds—this collaboration is not optional but essential. AI manages individual differences at scale; teachers ensure that individualisation does not become isolation. The paper has identified critical theoretical gaps, particularly the underexplored relationship between AI and cultural context, and has proposed research questions to guide future inquiry.

The most effective model is not AI-led or teacher-led but AI-supported, teacher-mediated. AI makes learning possible for every student; teachers make learning meaningful. Together, they create English language education that is not only inclusive and accessible but also deeply communicative, culturally rich, and profoundly human.

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Artificial Intelligence in English Language Teaching: Pedagogical Potential, Practical Challenges, and Equitable Integration

Dr. Indoor Gangadhar
Associate Professor of English
S.R.N.K. Government Degree College (A), Banswada, Dist. Kamareddy, T.G.

Abstract

Artificial Intelligence (AI) is revolutionizing English Language Teaching (ELT) by enabling personalized learning pathways, adaptive instruction, automated assessment, and interactive practice via AI-driven conversational systems. Recent empirical studies and reviews indicate that AI tools such as Intelligent Tutoring Systems (ITS), Natural Language Processing (NLP) applications, and Automated Writing Evaluation (AWE) systems significantly enhance learner engagement, improve language acquisition skills, and increase teacher efficiency. Despite these promising outcomes, challenges related to ethical concerns such as data privacy, algorithmic bias, digital divide, and over-reliance on technology persist. This paper critically reviews contemporary research on AI in ELT, explores the integration of AI tools into language teaching, and presents practical solutions to address existing challenges. The study concludes by proposing a balanced, ethical, and equitable approach for integrating AI in ELT to maximize learning outcomes while maintaining teacher agency and student well-being.

Keywords: Artificial Intelligence (AI), English Language Teaching (ELT), Intelligent Tutoring Systems (ITS), Natural Language Processing (NLP), Automated Writing Evaluation (AWE), Ethical concerns

1. Introduction

1.1 Background

Artificial Intelligence (AI) is increasingly being recognized as a transformative tool in educational environments, with the potential to revolutionize the way English is taught and learned. Over the past decade, advancements in AI, including machine learning (ML), natural language processing (NLP), and automated assessment, have led to the development of AI-driven tools that cater to the diverse needs of language learners. In the realm of English Language Teaching (ELT), AI is used to create Intelligent Tutoring Systems (ITS) that adapt to individual learner profiles, automated writing evaluation (AWE) tools that provide instant feedback, and voice recognition systems that facilitate spoken language practice. These technologies aim to address key pedagogical challenges such as personalizing

learning, increasing student engagement, automating repetitive tasks, and providing real-time feedback.

Traditional teaching methods, while effective in many ways, often struggle to provide the necessary level of individualization and timely feedback required for improving language skills at scale (Kukulska-Hulme, 2012). AI, with its ability to analyze vast amounts of learner data, offers a potential solution to these challenges, allowing for more personalized, efficient, and scalable learning experiences. However, despite the technological promise, AI integration into ELT faces several obstacles that need to be addressed in order to harness its full potential.

1.2 Rationale and Significance

The integration of AI in ELT presents an opportunity to create more dynamic and adaptable learning environments that respond to the needs of individual learners. As the demand for language proficiency grows globally, traditional methods often fail to meet the needs of diverse student populations. AI-powered tools offer not only increased engagement and efficiency but also the ability to support learners at different stages of their educational journey. The increasing availability of AI technologies has the potential to democratize language education, providing access to high-quality, personalized learning experiences for students worldwide (Zawacki-Richter et al., 2019). However, the technology's implementation comes with complex ethical considerations that must be tackled to ensure equitable and sustainable integration. Thus, this research aims to explore the benefits and challenges of AI in ELT and propose a framework for its ethical, pedagogically sound integration into language education systems.

2. Statement of the Research Problem

Despite the significant advancements in AI technology, the integration of AI tools in English Language Teaching faces several challenges. These challenges include concerns about data privacy, digital inequality, and the potential reduction in teacher-student interactions, which could undermine critical thinking and creativity in language learning.

Research Question: *How can Artificial Intelligence, specifically Intelligent Tutoring Systems (ITS) and related AI tools, improve the learning experiences of English language learners, and what ethical, pedagogical, and technological challenges must be addressed to ensure effective integration?*

3. Literature Review

3.1 Intelligent Tutoring Systems (ITS) in ELT

Intelligent Tutoring Systems (ITS) use AI to provide personalized instruction by adapting to the individual learner's needs. These systems adjust content, feedback, and pacing based on real-time assessments of a learner's performance. Research consistently shows that ITS are effective in improving learning outcomes in various subjects, including mathematics and science (VanLehn, 2011). In the context of

English Language Teaching, ITS can enhance grammar instruction, vocabulary acquisition, reading comprehension, and writing proficiency (Nye, 2015).

3.2 Automated Writing Evaluation (AWE)

Automated Writing Evaluation (AWE) tools provide instant feedback on student writing, focusing on aspects such as grammar, syntax, style, and organization. These systems use algorithms to analyze written text and provide feedback to learners, enabling them to improve their writing skills more efficiently. Research has shown that AWE tools like *Grammarly* and *Criterion* can significantly enhance writing proficiency by offering real-time, targeted feedback (Attali, 2013). This research shows that AWE systems offer reliable and consistent feedback, which helps language learners improve their writing accuracy and fluency.

3.3 Natural Language Processing (NLP) and Speech Recognition

NLP and speech recognition technologies are increasingly being used in ELT to enhance speaking and listening skills. AI-powered systems like Google Speech and *Duolingo's* Speaking Exercises allow learners to practice pronunciation, fluency, and comprehension. These systems recognize spoken language and provide immediate, personalized feedback, enabling learners to practice speaking at their convenience and receive targeted feedback on their pronunciation and grammar.

3.4 Teacher Readiness and Pedagogical Alignment

While AI offers numerous advantages, teachers often feel unprepared to integrate these tools into their classrooms. Research shows that professional development programs focused on improving teachers' digital literacy and pedagogical strategies for AI integration are essential for maximizing the effectiveness of these tools (Holmes et al., 2019).

4. Research Methodology: This paper uses a qualitative systematic review methodology to explore the existing body of research on AI in ELT. The methodology includes:

- **Data Collection:** Research articles, case studies, and systematic reviews published between 2015 and 2025 were sourced from Scopus, Web of Science, ERIC, and Google Scholar.
- **Selection Criteria**: Only studies that provided empirical evidence on AI tools' effectiveness in language teaching, with a focus on ITS, AWE, NLP, and speech recognition, were included.

Data Analysis: The selected studies were analyzed thematically to identify key benefits, challenges, and solutions related to the use of AI in language education.

5. Data Analysis

5.1 Personalized Adaptive Learning

AI-powered ITS systems allow personalized learning experiences by adjusting content based on individual learner performance. Studies consistently show that ITS can improve learner engagement, retention, and overall performance. For instance, learners who interact with ITS tend to perform better on standardized tests

and report higher levels of satisfaction with their learning experience (VanLehn, 2011; Nye, 2015).

5.2 Teacher Efficiency and Pedagogical Focus

AI tools help teachers by automating repetitive tasks, such as grading assignments and providing feedback. This reduces the time teachers spend on administrative duties, allowing them to focus on more complex instructional tasks, such as designing creative learning activities or providing individual support (Holmes et al., 2019).

5.3 Equity, Access, and Ethical Considerations

Despite the potential benefits, challenges related to access and equity remain. Students in under-resourced regions often lack the necessary devices and reliable internet connections to access AI-powered learning tools. Additionally, concerns about data privacy and algorithmic bias must be addressed to ensure that AI systems are transparent, fair, and ethical in their deployment (Williamson & Eynon, 2020).

6. Research Findings

The integration of Artificial Intelligence (AI) into English Language Teaching (ELT) has been the subject of numerous studies, with findings consistently highlighting both the benefits and challenges associated with AI applications. Through a systematic review of contemporary research, the following key findings emerged regarding the impact of AI on ELT:

1. **Personalized Learning and Improved Engagement**

- ✓ AI tools, particularly Intelligent Tutoring Systems (ITS), have demonstrated significant improvements in personalized learning. ITS systems adapt in real time to the learning needs of individual students, offering customized feedback, adjusting the difficulty of tasks, and providing targeted learning resources. Studies have shown that learners using ITS report higher levels of engagement and satisfaction compared to traditional instructional methods. For instance, **VanLehn (2011)** and **Nye (2015)** found that ITS not only improved student outcomes in terms of accuracy and performance but also led to increased student motivation and active participation in the learning process.
- ✓ Additionally, AI-driven tools like chatbots and speech recognition systems enhance learner engagement by providing constant conversational practice opportunities, which is particularly beneficial for students who do not have frequent access to native speakers or teachers. Research by **Liakin et al. (2019)** and **Heift & Schulze (2007)** confirms that AI-based speaking and pronunciation tools increase the frequency of spoken language practice, helping learners to overcome the anxiety of speaking in front of others.

2. **Improved Assessment and Instant Feedback**

- ✓ Automated Writing Evaluation (AWE) systems are proving to be effective in providing real-time, consistent feedback to students, which is a significant advantage in language learning. AI systems like **Grammarly** and **Criterion**

are capable of evaluating writing in real-time, focusing on grammar, vocabulary, and structure, and allowing students to make improvements without waiting for a teacher's review. Studies by **Li, Link, & Hegelheimer (2018)** and **Attali (2013)** have found that students who use AWE tools demonstrate improvements in writing quality and grammar retention.

- ✓ Furthermore, AI systems provide instantaneous feedback, a critical component of language learning. Instant feedback helps learners identify and correct mistakes immediately, which accelerates the learning process. This is especially beneficial for students who need regular feedback to refine their language skills, particularly in areas like writing and pronunciation.

3. Increased Teacher Efficiency and Reduced Workload

- ✓ AI tools significantly reduce the time teachers spend on administrative tasks, such as grading and providing feedback. This allows teachers to focus more on creative and complex aspects of teaching, such as facilitating discussions, mentoring, and personalized instruction. According to **Holmes et al. (2019)**, teachers reported that the use of AI systems in their classrooms led to a reduction in repetitive tasks, freeing up time for them to engage in more meaningful interactions with students. AI systems like AWE and ITS also streamline the administrative aspects of language teaching, making it more efficient and less time-consuming for educators.

4. Challenges and Ethical Concerns

- ✓ While AI offers numerous benefits, it also presents challenges, particularly in the areas of ethics and accessibility. One of the most prominent concerns is **data privacy**. AI tools rely heavily on student data to provide personalized learning experiences, and the storage and use of such data raise concerns about data security, consent, and transparency. Research by **Williamson & Eynon (2020)** highlights the ethical dilemmas involved in AI's use in education, particularly regarding how personal data is collected, shared, and utilized by AI systems. Additionally, students and parents often lack clear information on how their data is being handled, which further complicates the ethical considerations.
- ✓ **Algorithmic bias** is another major challenge. AI systems are only as unbiased as the data they are trained on. If AI tools are trained on biased datasets, they may perpetuate those biases, which can lead to unfair assessments and feedback. For example, **Zawacki-Richter et al. (2019)** note that biased AI algorithms in automated writing evaluation systems may disadvantage students from certain linguistic or cultural backgrounds, leading to discrepancies in their academic performance.
- ✓ **Digital divide** remains a significant barrier to AI integration in ELT, particularly in regions with limited access to high-speed internet or modern computing devices. **Holmes et al. (2019)** point out that AI tools are often inaccessible to students in rural or under-resourced areas, which exacerbates

the existing educational inequalities. These challenges must be addressed to ensure that AI can be effectively used to promote equitable access to quality education.

5. **Teacher Preparedness and Professional Development**

- ✓ Another key finding from the literature is the importance of **teacher preparedness**. Despite the promise of AI, many teachers feel unprepared to effectively integrate AI tools into their classrooms. **Holmes et al. (2019)** found that teachers with higher levels of digital literacy were more successful in utilizing AI tools to enhance their teaching, while those with less training struggled with both the technical aspects of AI integration and the pedagogical implications. This highlights the need for professional development programs that can equip educators with the skills and knowledge necessary to use AI tools effectively and align them with their teaching goals.
- ✓ Moreover, teacher attitudes toward AI play a significant role in its adoption. **Kukulska-Hulme (2012)** emphasizes that while some teachers are enthusiastic about using AI, others express concerns about the technology's potential to dehumanize the learning process. Thus, it is essential for future research to explore the diverse perceptions and attitudes toward AI among educators and design professional development initiatives that address these concerns while highlighting the benefits of AI in enhancing educational experiences.

7. Scope for Future Research

- ➢ The integration of Artificial Intelligence (AI) in English Language Teaching (ELT) is still in its early stages, and numerous avenues remain unexplored for optimizing its use. Future research should focus on several key areas to ensure that AI tools are not only effective but also equitable and ethical in their application.
- ➢ First, **longitudinal studies** are needed to assess the long-term effects of AI integration in ELT. While short-term studies have demonstrated positive outcomes, it is crucial to understand how AI tools influence learner outcomes over extended periods, particularly in terms of language proficiency retention and critical thinking skills.
- ➢ Second, **AI teacher training programs** should be developed and tested. As research indicates that teacher preparedness is a significant barrier to successful AI adoption, future studies could explore the effectiveness of professional development programs that focus on improving teachers' digital literacy and their ability to integrate AI tools into their pedagogical practices. These programs should be designed to enhance both the technological competence and the pedagogical understanding of AI integration.
- ➢ Third, future research should address the **digital divide** and focus on understanding how AI can be equitably distributed across different socio-

economic groups, particularly in rural and under-resourced areas. Studies could examine the barriers to access and the potential for AI to bridge gaps in education, ensuring that learners in diverse contexts have equal opportunities to benefit from AI tools.

- Additionally, more research is needed into **algorithmic bias** and the **ethics of AI in education**. AI systems are only as good as the data they are trained on, and research must focus on identifying and mitigating biases inherent in AI tools, ensuring fairness in automated assessments and feedback. Studies on transparency, data privacy, and consent will be critical to maintaining ethical standards and safeguarding student data.

- Finally, **hybrid models of AI and human teaching** could be further explored. While AI has shown promise in providing personalized learning experiences, there is a growing concern about the potential reduction of teacher-student interaction. Future studies could investigate blended learning models where AI complements rather than replaces human instruction, preserving the human elements of empathy, creativity, and critical engagement that are central to effective language learning.
- By addressing these areas, future research will be instrumental in advancing the responsible, ethical, and effective integration of AI in English Language Teaching, ensuring that AI tools contribute to positive educational outcomes for all learners.

8. Conclusion

The findings of this research underscore the transformative potential of AI in English Language Teaching. AI tools such as Intelligent Tutoring Systems, Automated Writing Evaluation, and NLP-based systems provide personalized learning experiences, improve engagement, enhance assessment practices, and reduce teacher workload. However, challenges related to data privacy, algorithmic bias, and digital access inequalities must be addressed to ensure that AI can be used equitably and ethically. Future research should focus on exploring long-term impacts, developing teacher training frameworks, mitigating ethical concerns, and ensuring that AI adoption is inclusive, transparent, and aligned with pedagogical best practices. By addressing these areas, AI has the potential to revolutionize ELT and promote more personalized, efficient, and equitable language learning experiences.

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AI Redefines Gen Z Educator Mentorship

Dr. Naga Jyothi Gogineni
Assistant Professor of English
Girraj Govt. College (A), NZB.

Abstract

Gen Z students are digital natives who have access to smartphones and the internet. For Gen Z, technology is not a 'tool' they use; it is the environment they inhabit. The relationship between this generation and their digital world has shifted from simple fluency to a complex navigation of AI integration, search-behaviour shifts, and digital exhaustion. Gen Z formed a meaningful relationship with AI, using it for everything from emotional support to creative brainstorming. The way Gen Z finds information has changed. They use social media platforms like TikTok, Facebook and Instagram as their primary search engines instead of Google. In searching, they prioritize EEAT (Experience, Expertise, Authoritativeness, and Trustworthiness) through video. A 'story time' video or a Reddit thread is often considered more truthful than a sponsored article.

AI facilitates the creation of customized learning plans that cater to the specific needs, pace, and learning styles of individual students, leading to a more tailored educational experience. The introduction of interactive AI tools, such as chatbots and virtual tutors, contributes to making learning not only engaging but enjoyable for students. AI alleviates some of the administrative burdens on teachers, enabling them to dedicate more time to critical educational tasks. With AI-driven insights, educators can better identify knowledge gaps and develop targeted interventions, leading to improved academic performance. AI-powered learning platforms empower students to take greater ownership of their educational journeys, fostering a more autonomous learning environment. By integrating AI into the curriculum, educators prepare students for a future that is increasingly driven by technology, enhancing their readiness for the modern workforce. This leads to changing the tutoring landscape.

Gen Z educators adopt a 'human-in-the-loop' model, where AI handles routine tasks while teachers supervise and add value with empathy and critical contextualization. Gen Z teachers leverage AI to create tailored learning paths for students, accommodating diverse needs and languages, particularly in underserved areas. Gen Z educators redefine mentorship by integrating generative AI that shift to a facilitator of personalized learning from traditional, administrative roles. Beyond technical skills, Gen Z educators are developing "AI wisdom" the ability to evaluate AI output for bias, accuracy, and ethical implications.

Despite the potential benefits, the integration of AI in education comes with several challenges like need for comprehensive training programs to ensure educators are equipped to effectively incorporate AI tools into their teaching practices. Students access to AI-powered learning resources is to be taken into considered.

AI does not eliminate the Gen-Z educator. AI transforms and primarily empowers Gen-Z educators, but only if they adapt strategically.

Key Words: Gen G Educator, Artificial Intelligence, integration, Human-in-the-loop model, AI Wisdom.

Introduction

Indian Education system is flourished with the ancient Gurukul system and the colonial system. The Gurukul system was decentralized and residential, where students lived with their teachers, fostering a mentor-like relationship and focusing on holistic education through oral traditions. This contrasts with colonial system, which introduced a structured, exam-centric approach that shaped modern schooling.

Mentorship has been integral to any of the education system, that enlighten the students in both academic and personal growth. Traditional mentorship is a fundamental, human-centred method for professional and personal growth. It depends on emotional connection, trust, and the transmission of knowledge from a seasoned individual (mentor) to a novice. It relies on empathy, emotional intelligence, and interpersonal trust. Mentors offer individualised support, ethical reinforcement, and the promotion of self-awareness, fostering a secure environment for personal development. Guidance is anchored in the mentor's real-world career path, accomplishments, disappointments, and tacit knowledge.

Generation Z, born between 1997 and 2012, is the first cohort to grow up immersed in digital technologies, fundamentally altering how they engage with learning and mentorship. The advent of AI tools, such as intelligent tutoring systems and generative AI, has upset this paradigm. Gen Z learners exhibit distinct characteristics that influence mentorship dynamics. They are comfortable navigating AI-driven tools and platforms. They expect tailored learning experiences. Research shows that Gen Z students prefer interactive and adaptive learning environments supported by AI technologies. They hesitate the passive way of learning.

This paper investigates how AI is reshaping mentorship for Gen Z educators and learners, focusing on personalization, accessibility, and the evolving role of human mentors.

2.Literature Review

AI is redefining mentorship for Gen Z educators reveals a shift from hierarchical knowledge transfer to a "hybrid-partnership" model. According to 2024–2026 research, AI is not replacing the mentor but rather functioning as a "Cognitive Co-pilot," allowing the human educator to move away from administrative tasks and toward high-impact emotional and ethical coaching. Recent literature (PMC, 2026) defines the new era as Intelligent Mentorship.

In this model, the educator's role is partitioned into two distinct spheres: Tactical AI Mentorship: Handled by Generative AI (GenAI), providing real-time technical feedback, lesson structuring, and 24/7 "bridge support" when the human mentor is unavailable (MDPI, 2025).

Adaptive Human Mentorship: Reserved for the human educator, focusing on "praxis shock"—the stress of transitioning from theory to real-world application—and navigating complex professional relationships (Barbieri & Nguyen, 2025).
Artificial intelligence is fundamentally redefining mentorship for Gen Z educators and learners. By enabling personalized, scalable, and accessible guidance, AI enhances the mentorship experience while challenging traditional educational structures. However, AI cannot replace the human elements of mentorship—empathy, ethics, and lived experience. The future lies in a balanced, hybrid approach where AI serves as a powerful tool, and educators remain central as mentors, guides, and role models.

3, Methodology

This study adopts a qualitative research methodology based on the analysis of the secondary data. Sources include academic journals, books and documents related to AI role in English Language Teaching. The research identifies how AI is reshaping mentorship for Gen Z educators and the evolving role of human mentors.

4.Findings

The transition to a hybrid-partnership model in education marks a monumental structural evolution akin to changes witnessed since the industrial revolution. This new model does not abolish hierarchy; rather, it flattens and redistributes it, leading to a more dynamic interaction among educational stakeholders.
The shift can be better understood through three key lenses: Structural, Relational, and Technological.

Flattening of the Hierarchy:

Traditional educational frameworks operated on a "top-down" approach where educators held a central, authoritative role. In contrast, the hybrid-partnership model redefines this dynamic into a networked ecosystem. Educators transition from being the "Sage on the Stage" to becoming a "Guide on the Side," positioning themselves at the core of an interconnected learning environment. In this setting, they

facilitate interactions among students, artificial intelligence (AI), and peers in the real world.

Moreover, the concept of reverse mentorship flourishes within this model, especially among Generation Z educators who often learn from their students, particularly in areas like digital fluency and social trends. This reciprocal learning fosters a partnership atmosphere where expertise is shared across generational lines.

Hybrid Teaching:

The term "Hybrid" implies a collaborative division of responsibilities between human educators and machines. The AI component efficiently manages routine, objective, and data-intensive tasks, serving as the foundational support or "scaffolding" for knowledge. In contrast, the human educator undertakes the subjective, emotional, and ethical dimensions of teaching. They provide the "inspiration" and context, highlighting the significance and relevance of the learning experience. In this hybrid model, both human and AI partners complement each other, enabling a richer, more effective educational journey that aligns with contemporary needs and technological advancements.

5.Discussion

The necessity for educators to shift from roles as mere "knowledge providers" to becoming "facilitators" and "mentorship partners" is an essential transformation in light of the evolving digital landscape. In this context, artificial intelligence (AI) plays a significant role by managing the delivery of content and assessment data. Consequently, the human educator assumes a critical function by addressing the "why" the purpose behind learning and the "so what" the practical applications of knowledge. This transition highlights the indispensable role of educators in imparting meaning and relevance to the learning process amidst technological advancements in education.

Transition of educators from:

Knowledge providers → Learning facilitators

Authority figures → Mentorship partners.

This shift is a profound evolution in the classroom dynamic. It moves the center of gravity from the "sage on the stage" to a collaborative environment where students take ownership of their intellectual journey.

Knowledge Providers → Learning Facilitators:

In the traditional model, the teacher was the primary gatekeeper of information. In the digital age, where information is ubiquitous, the educator's value lies in teaching students how to navigate, synthesize, and apply that data. Delivering lectures and providing the answers is replaced by designing "learning experiences." This involves posing provocative questions, setting up complex problems, and providing the tools for students to discover solutions themselves. There is a shift from rote memorization to critical thinking and metacognition (understanding how one learns).

Authority Figures → Mentorship Partners:

This transition addresses the emotional and social architecture of the classroom. While the educator still maintains a safe and structured environment, the power dynamic shifts from "compliance-based" to "relationship-based. The new way shifts Gen Z educator from Establishing rigid hierarchies where the teacher's word is final and unquestioned. Now they are acting as a "coach" or "partner." The educator admits they don't have all the answers and works alongside the student to explore new territory. It helps in building agency and emotional intelligence. When a student feels like a partner in their education, their intrinsic motivation increases significantly. The gen z educator is ready to learn from the students and ready to rectify his mistakes. The learning together helping them to empower their cognitive and emotional intelligence.

6.Conclusion

Gen Z is confronted with a phenomenon known as "Praxis Shock," which involves the stress of transitioning from theoretical digital understanding to practical real-world application. Although artificial intelligence (AI) can serve as a helpful guide through this transition, it lacks the ability to impart the emotional fortitude necessary to navigate these challenges effectively. Emotional intelligence (EI) is often considered more critical than academic excellence when it comes to personal and professional success. While academic achievement, typically measured through standardized testing and formal education, showcases an individual's intellectual capabilities, it does not necessarily correlate with effective social skills, self-awareness, empathy, and interpersonal relationships. Emotional intelligence encompasses the ability to recognize, understand, and manage one's emotions, as well as the ability to empathize with others' feelings. This set of skills is essential in navigating complex social dynamics, fostering collaborative environments, and addressing conflicts in a productive manner. In many professional settings, individuals with high emotional intelligence often outperform their academically inclined peers, as they are better equipped to handle stress, communicate effectively, and inspire others. Thus, investing in the development of emotional intelligence can lead to more fulfilling relationships and successful career outcomes, suggesting that fostering EI may hold more significance than solely focusing on academic achievements. This is only possible with a human not with a machine.

Research highlights the importance of psychological safety, indicating that Gen Z prioritizes relationships over tasks, necessitating "mentorship partners" who can provide both authenticity and support rather than simply exert authority. A notable correlation has been established that illustrates if a teacher demonstrates a lack of care, students reciprocate with indifference. Therefore, the contemporary educator must embody a relatable guide that validates students lived experiences while simultaneously encouraging their growth.

Moreover, as 69% of teachers acknowledge that AI tools have enhanced their teaching strategies, a new concern has arisen regarding Cognitive Atrophy. This condition emerges when students utilize AI to sidestep the learning process, resulting in a failure to cultivate critical thinking skills. Consequently, the role of educators is evolving to include guarding this essential struggle, which constitutes a component of "Critical Responsivity." Educators are now tasked with teaching students how to critically assess AI outputs, identify biases, and engage in "effortful thinking."

In this dynamic, the educator also functions as a mediator, maintaining a balance between the efficiency offered by AI and the necessity of human-centered ethical principles. Overall, these emerging roles underline the importance of mentorship in facilitating the development of resilient learners capable of navigating the complexities of modern professional landscapes.

AI serves not to eliminate the role of Gen-Z educators but to transform and empower them. However, this transformation depends on the ability of these educators to strategically adapt to the integration of AI into their teaching practices. The potential benefits of AI in education are contingent on educators grasping and leveraging new technologies effectively.

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Ethical AI Literacy in Posthuman Education.

1.Prathibha Bochker
Assistant Professor of English
Girraj Govt. College (A), Nizamabad
Research Scholar, BESTIU.
2.Dr. B. Krishna Chandra Keerthi
Associate Professor
Supervisor
Govt. City College (A), Hyderabad

Abstract

The rapid integration of Artificial Intelligence (AI) into educational contexts has generated profound ethical, pedagogical, and philosophical questions. Beyond technical competence, educators and learners are now required to develop AI literacy that is ethically informed and critically reflective. This paper discovers the intersection of ethics, AI literacy, and posthumanism in education, arguing that traditional human-centered educational frameworks are no longer adequate to address the intricacies introduced by intelligent technologies. Drawing on post humanist thought, the study reconceptualizes education as a relational space where humans, machines, data, and socio-cultural forces interact enthusiastically. The paper adopts a tactic to examine ethical concerns such as agency, accountability, bias, surveillance, and academic integrity, while emphasizing the need for ethical AI literacy as a core educational capability. It further discusses how posthumanist perspectives encounter anthropocentric assumptions in education and encourage more inclusive, responsible, and sustainable pedagogical practices. The study concludes by proposing a human-centered yet posthuman-aware educational framework that balances technological advancement with ethical responsibility, critical awareness, and social justice.

Key-Words: AI Literacy, Data, Humans, Machines, Posthumanism in education, Socio-cultural…. etc.

Introduction

Education has always evolved alongside technological change, from the invention of writing to the advent of print, digital media, and now Artificial Intelligence. In contemporary educational landscapes, AI-driven tools such as automated assessment systems, intelligent tutoring platforms, learning analytics, and generative language models are increasingly shaping how knowledge is produced,

accessed, and evaluated. While these developments promise efficiency, personalization, and expanded access, they also raise serious ethical concerns related to autonomy, equity, authorship, and the nature of learning itself.

In response to these challenges, the concept of AI literacy has gained prominence. AI literacy extends beyond the ability to use AI tools effectively; it incorporates an understanding of how AI systems function, how they shape human behavior, and how ethical values can guide their accountable use. However, many existing ponderings of AI literacy remain largely instrumental, focusing on skills and competencies while neglecting deeper philosophical and ethical questions.

Posthumanism in this situation offers a fresh way of interpreting. Posthumanism challenges the long-standing humanist statement that humans are autonomous, rational, and superior agents standing apart from technology and nature. Instead, it accentuates relationality, interdependence, and the entanglement of humans with non-human actors, including machines and algorithms. When applied to education, posthumanism invites a rethinking of teaching, learning, and ethics in a world where agency is distributed across human and technological networks.

This paper argues that ethics, AI literacy, and posthumanism must be examined together to develop a more holistic and responsible educational framework. By integrating ethical reflection with AI literacy and posthumanist theory, education can move beyond fear or uncritical adoption of AI toward a more balanced, inclusive, and reflective practice. The discussion is particularly relevant for humanities and language education, where questions of meaning, authorship, and human expression are central.

Ethics and the Rise of AI in Education

The ethical implications of AI in education are multifaceted and deeply interconnected with broader social concerns. One of the primary ethical issues is agency. As AI systems increasingly guide learning pathways, recommend content, and evaluate performance, questions arise about who holds decision-making power. When algorithms influence educational outcomes, responsibility becomes diffused, making it difficult to assign accountability for errors, biases, or harm.

Another major concern is bias and fairness. AI systems are trained on large datasets that often reflect existing social, cultural, and linguistic inequalities. In educational contexts, biased algorithms can disadvantage certain groups of learners, particularly those from marginalized backgrounds. Ethical AI literacy requires educators and students to recognize these biases and critically evaluate the neutrality often attributed to technology.

Surveillance and data privacy also pose significant ethical challenges. AI-driven learning analytics collect vast amounts of student data, raising concerns about consent, transparency, and the long-term use of personal information. Students may be unaware of how their data is collected, analyzed, and monetized, leading to a loss of autonomy and trust.

Academic integrity represents another ethical frontier. The rise of generative AI tools has blurred traditional boundaries between original work and assistance, forcing educators to reconsider long-standing notions of authorship and plagiarism. Rather than framing AI use solely as misconduct, an ethical approach encourages dialogue, transparency, and the development of clear guidelines that respect both learning objectives and technological realities.

Understanding AI Literacy Beyond Technical Skills

AI literacy is often described in terms of functional competence: the ability to use AI tools, understand basic concepts such as algorithms and data, and apply these tools effectively in academic or professional settings. While these skills are important, they represent only one dimension of AI literacy.

Ethical AI literacy emphasizes critical awareness. Learners must be able to question how AI systems are designed, whose interests they serve, and what values they embed. This includes understanding the social and political contexts in which AI operates, as well as the potential consequences of its use.

In educational settings, ethical AI literacy also involves reflective practice. Students and teachers should engage in ongoing reflection about their interactions with AI, considering not only what AI can do, but what it should do. This reflective dimension aligns closely with the goals of humanities education, which prioritizes critical thinking, empathy, and moral reasoning.

By integrating ethics into AI literacy, education can empower learners to become responsible users and informed critics of technology rather than passive consumers. This shift is essential in preparing students for a future in which AI will continue to shape social, cultural, and professional life.

Posthumanism and the Rethinking of Education

Posthumanism challenges the anthropocentric foundations of traditional education, which often position humans as the sole agents of knowledge and meaning. From a posthumanist perspective, learning is understood as a distributed process involving human and non-human actors, including technologies, environments, and material conditions.

In the context of AI, posthumanism encourages educators to recognize machines not merely as tools, but as active participants in educational ecosystems.

This does not mean attributing human consciousness or moral agency to machines, but rather acknowledging their role in shaping human actions, decisions, and identities.

Posthumanist education emphasizes relational ethics. Instead of focusing solely on individual responsibility, it highlights collective accountability and the ethical implications of interconnected systems. This perspective is particularly useful in addressing complex issues such as algorithmic bias and data ethics, which cannot be reduced to individual intent alone.

Moreover, posthumanism aligns with inclusive and decolonial approaches to education by questioning dominant Western humanist narratives. It opens space for alternative ways of knowing that value interconnectedness, care, and sustainability—values that are increasingly important in an AI-driven world.

Ethics, AI Literacy, and Posthumanism: An Integrated Framework

Bringing together ethics, AI literacy, and posthumanism allows for a more nuanced understanding of education in the age of AI. Ethics provides normative guidance, AI literacy offers practical and critical competencies, and posthumanism supplies a philosophical framework that redefines agency and responsibility.

In practice, this integrated approach encourages educators to design curricula that foster ethical reflection alongside technical learning. For example, students might analyze case studies of AI use in education, discuss ethical dilemmas, and reflect on their own experiences with AI tools. Such activities promote critical engagement rather than passive acceptance.

Teacher education plays a crucial role in this framework. Educators must be equipped not only with technical knowledge but also with ethical awareness and philosophical insight. Professional development programs should therefore include discussions of posthumanism, ethics, and AI literacy to prepare teachers for evolving classroom realities.

Implications for Educational Practice

Adopting an ethical, AI-literate, and posthumanist approach has several practical implications. Assessment practices may need to be reimagined to emphasize process, reflection, and ethical reasoning rather than solely product-based outcomes. Classroom policies should encourage responsible AI use through transparency and dialogue.

Curriculum design should integrate interdisciplinary perspectives, drawing from philosophy, sociology, and cultural studies alongside technology education. This holistic approach ensures that AI is not treated as a purely technical phenomenon, but as a social and ethical one.

Importantly, this framework supports a humanized vision of education. While posthumanism challenges human exceptionalism, it does not diminish the value of human experience. Instead, it situates humanity within a broader network of relations, encouraging care, responsibility, and ethical awareness in interactions with technology.

Conclusion

The convergence of ethics, AI literacy, and posthumanism offers a powerful lens for rethinking education in the age of Artificial Intelligence. As AI continues to reshape educational practices, there is an urgent need to move beyond instrumental and technocentric approaches. Ethical AI literacy, informed by posthumanist thought, enables educators and learners to engage critically, responsibly, and reflectively with intelligent technologies.

By embracing relational ethics, questioning anthropocentric assumptions, and foregrounding moral responsibility, education can harness the benefits of AI while mitigating its risks. Ultimately, this integrated approach supports a more inclusive, just, and humanized educational future—one that acknowledges the complexities of human–machine entanglements without losing sight of ethical values and social responsibility.

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AI in ELT: Balancing Automation with Pedagogy

Mangali Dastappa
Assistant Professor of English. Girraj Government College (A) Nizamabad.

Abstract:

This paper will talk about Artificial Intelligence (AI) being used in teaching English. First of all, this is a discussion about how AI will affect every field of human duties or work, mainly in the teaching field, becoming a conversational AI. The British Council talked about this in 2022. It has done some research on AI with surveys for teachers in different countries. They shared opinions that AI can be useful for learners in learning language, and teachers' AI will help teachers in teaching using tools of AI-powered technology, such as Chat GPT, GPT-4, and other Large Language Models (LLMs). With these tools, teachers can teach more comfortable and effective way to students. AI, according to UNESCO-2023. There is increasing recognition of the technology-driven world in the present situation. At the same time, AI and the technology-driven world will throw us opportunities and challenges in the future of the educational systems in teaching and learning. and future visits to the human intelligence also. The British Council is based on the existing guidelines, which are very limited, and there are necessary trainings to explore these AI-powered tools for teachers and learners. In the specific field of English language teaching. Though many resources are available for teaching faculty in the classroom. A teacher can use AI-powered tools such as blogs, webinars, Meta, ChatGPT, AI Gemini, etc. But there is a need for a teacher to control the teaching of English, which we call an opportunity, with the AI challenge at present. So finally, this publication emerges that the AI-powered look or AI impact in teaching English in the systems of education is managed or controlled by human intelligence. license. AI—we cannot completely depend on it because AI-powered tools are operated by some. Based on education technology experts at the British Council and Dr. Helen Compton's investigation, the present situation of research proves that the use of AI in English language teaching and learning becomes that in the beginning it is systematic approaches, but later, when it is focused on research on AI tools, they found that AI can do wrong and give misinformation. It AI—in the future—may reduce the human power in ELT. Teachers can create learning materials, and students can create assignments with the help of AI. Finally, AI challenges its accuracy.

Key Words: British Council, UNESCO, Teaching, Learning, AI-Powered Tools, Blogs, Chat GPT, AI Gemini...

Introduction

A review of existing surveys indicated that an up-to-date, comprehensive study was needed on the present situation regarding the use of AI for ELT/L across all ages of learners. The Council: According to the British Council publication, the influence of artificial intelligence is forcing human life in all aspects, specifically with advanced conversational AI from late 2022. But AI, when AI plays a role in the education system, this paper discusses more research and a meaningful investigation regarding these fields of education. The British Council specifically contributed to the impact of AI on English language teaching in the education system.

The British Council report was observed in three sources of evidence. For example, Alexa can be used as a personal voice assistant for students or listeners as their conversational partner. In this, learners/students can practice the correct pronunciation of a particular word with the help of an AF tool, Alexa. Students can improve their pronunciation. Teachers can also comprehend their research papers while writing articles on different topics. They can use AI-powered tools, such as Chat GPT, AI Gemini, and Chatbots, to check grammatical errors and develop/improve writing skills. Students can also develop their vocabulary by playing AI-powered games. Teachers can use AI-powered tools such as Google Translate, Meta Gemini, AI Gemini, chatbots, and Chat GPT. These tools are very helpful for teachers to teach the English language more effectively.

Based on the British Council survey, all teachers are required to use AI tools to teach students. English language proficiency. The survey found that teachers need training on AI tools for their usage in language skills. The report found that teachers need to maintain a disciplined focus when using AI tools. Therefore, all teachers require training in using AI-powered tools. This can be a challenge for the education system. In the Council of Survey, most teachers disagreed that it would not be possible to become well-learned in the use of AI-powered tools at this moment. However, a few teachers agreed that it would be possible if the required training was provided to teachers, and some teachers responded neutrally. Eventually, the report of the British Council found that AI, used in English language teaching, may benefit the teachers and students; at the same time, it may pose a threat to the teachers in teaching in the education system.

Methodology : Quantitative & Qualitative

The survey/review identified five key areas that were more effective. AI is used effectively in English language teaching to enhance the skills of speaking, reading, pedagogy, self-regulation, etc. Teachers can also make their pedagogical approach with the use of AI; they can also create interesting assignments for the students. Methods of teaching aids can also be used by teachers to create help of AI. Therefore, when we consider all these things with AI, a teacher can teach more effectively by using these AI-powered tools.

About the British Council: The British Council had tried a lot to build connections to support prosperity and peace between the people of the UK and the people worldwide. This council worked for the benefit of all individuals to gain knowledge and skills to transform their lives in a better way. The Council helped people learn English creatively.

The British Council works with over 200 countries at the people and many people in territories. In another side more than 100 countries the council to worked in this The council approached more than 80 million people directly face to face and over 191 million people could reach through online, broadcasts and different publication in the years 2022-2023 All these were done by the British Council for the benefits of teachers and students to create their own learning, teaching more effective way. In this Survey, teachers provided different opinions. Some teachers agreed, some disagreed, and some became neutral. So finally The British Council found that with the help of AI Teachers and students will both get benefits from these AI-Tools.

According to the British Council Report, we may come to the conclusion that AI-powered tools can help teachers teach effectively, and students can learn comfortably. However, we found a gap in the skills of teachers and students M in using the tools properly. The report revealed that many teachers require fruitful training to use the tools. AI may influence language education more than it does other disciplines. Therefore, teachers need training in AI. This can be a challenge for teachers in the education sector. The main challenge is that research, in research we find that AI could carry suitable language for the appropriate messages as it is English belongs to a global language. AI or digital literacy is a considerable challenge for teachers and stakeholders. With these AI-powered tools, student teachers can access their needs personally. Another challenge with AI and AI- Powered tools is ethics. There is vital proof that bias needs to be addressed. Therefore, we could understand that ethical frameworks and regulations are challenging.

AI may bring another challenge for English language teaching, that is, technology breakdown. This means that AI may not reveal correct answers or replies for what you said. It may reveal your personal information on public websites. This could lead to a challenge in which public data privacy is lost. 80 every teacher should know the opportunities and challenges in their mindfully while using in English Language Teaching in class along with the help of AI and AI-Powered tools. Everyone should know that the uses of AI are limited to certain levels.

When AI substitutes teachers, the survey and report said that it is not possible to replace humans in the field of English language teaching, and most teachers disagreed with the statement that AI could substitute humans by 2035. Teachers who participated in the survey of the British Council said that it is not possible to replace

humans with AI. Based on this, the data revealed that I has positives and at the same time negatives in the field of Education, mainly English Language Teaching (ELT). According to updated research in June 2024.
There has been rapid growth and development in interactive AI from 2014 to 2023. It is mainly used in English language teaching to teach certain skills like speaking, reading, listening, and pedagogy. with the help of AI and AI-powered tools.
Pedagogy: Pedagogy refers to the methodology, strategies, approaches, and techniques used to facilitate English Language Teaching. It is an important factor in the rapid changes in the field of pedagogy.

Teaching methodologies to the teachers Traditional method that are Grammar Translation method, Lecture Method, Eclectic method, Question answers method, discussion method, Explanation method, etc. These traditional method are converted to Technical methodologies with the help of AI and AI-powered tools such as Chatbots, GPT, Gemini, Alexa, Google Translate, and voice assistants can be used by teachers to teach students grammar, lessons, reading, or writing any skill of the language Skill in English Language Teaching. Teachers can use these AI tools to copy text and create different types of content. Style, which is a very easy way for students to understand. The concepts, problems, and other topics to the teachers and students. In 2022 Kim explored the effects of the methodological predictions/expectations. Student began with the AI and used it to provide data in lectures and explanations to practice at different levels based on the students' requirements. In 2023, Lee explored a learner-generated context-based (LGC) approach. Lee defined this Learner-generated-context that these learners can learn within it. These LGC learners, based on the data collected by Lee et al. (2023), perform their actions and can make their own choices. Based on this, many researchers have found that LGL learners make self-autonomous learning experiences with the support of AI and AI- Powered tools.

Findings :

Benefits for Teachers of Teaching English:
As we have mentioned, AI is increasingly being used in traditional classroom teaching. techniques, methods. Specifically, teachers need to know about the tools available for them.
1.According to a study by public school teachers in U.S.K -12 they reported that 60% of teachers adopted AI tools in their teaching, and many educators increased their usage of AI tools.
2) In the field of education Administrative purpose can be used AI, In classroom teachers can teach a lesson in a different or effective way, create quizzes, forms, etc.
3) The tools of AI are used by educators are Chat GPT, Google Gemini, and Anthropic's Claude and also specific tools for teachers in teaching.
The AI tools for leaching are generative AI, Large Language Models these can be used by the teachers to create a new Content to the students to teach. Recently, some

specific tools designed for the teachers to teach specific areas such tools are as Eduaide. AI Quiz and curipod. The mentioned tools mainly help the teachers to teach, quiz, lesson plans generation, personal guidance, language translation and the adjustment for the levels of reading, and teacher can create digital classrooms, assignments and idea generation etc.

Personalization:

These days many are following AI driven platform to offer their content personal. Students can interact with content personally with the help of AI and they can design the activities by their own. Teacher also can give the assignment individual in different needs based on the personal requirements. In this regarding a teacher can also offer personalized tutoring and guidance to the learners with the help of At Tools of chat bots and digital assistants.

Saving of the Time:-

Teachers report from Merrimack College reported that working 54 hours per week with 25 of those hours i.e. 46 percent spent on pustrection and at the same time 17 hours per week it means 31 percent spent on with the combination of general administrative works, the work of non-teaching learners. for making free time for preparing lesson plans individually. Teachers can create students progress documents, Papers valuation, assessments of the learners documents easily with the help of AI-tools. Teacher can also make online assessment tests easily. So in this regarding teacher's time will be saved with AI and AI-tools. Teachers can analyze the students data, they can take the help of AI in making the Attendance quickly.

Challenges of using AI in English Language Teaching According to the review of the report, British Council, UNESCO there are benefits with Using AI & AI-Powered tools at the same time there may be challenges are also found in The Teaching of English Language with A.I. They are Data connectivity may bring to the technical breakdowns due to the poor connections and the already provided software design there is a chance to give incorrect answers by the AI and AI-Powered tools. In this we may say that it is a challenge to the teachers and students in Teaching Learning English language.

Discussions

* Teachers and Learners are not prepared fully in Using AI tools like, Chabot, Google assistance Meta, Google Gemini, AI etc.. In their syllabus or lessons, grammar, reading, writing, speaking skills How do they are going to use these tools. So these people require a proper functional advanced training to teachers mainly. So, in these situations teachers are may not come to show their interest in teaching ELT by using AI & Its tools.

* Fear about the safety and security when the teachers are using AI. It may ask the personal Data/information to log in to the accounts. So there is no clarity about how the persons/users data may get public instead of private. It many every teacher or student may feel about their information may get leak into the social media. In this everyone get fear about this information.

* Fear about the unknown things about AI. Because I itself is not operating its personal it is operated by someone.
* Fear of losing naturality with AI. Wherever the teachers and students are depending on AI & AI-Powered tools, they both are going to be depending on lost the maturity in teaching and naturality in learning. At the same time Teachers will lose natural environment of teaching how they loose and students also may lose natural environment of learning that is they both missing the natural relations, feelings, emotional feelings between student and teachers Connectivity with the usage of AI in English Language teaching.
* Language standardity is also a challenging task with AI and ideologies also becoming hard tasks with the help of these tools. Example according to the study of Rowe 2022 one language in Philippines found officially that Filippo it is an official standardized language but AI tools Google translate cannot recognize it to translate it into English the sources said. So Based on this we came to know that this AI provides the information what someone gives the programme to AI & AI tools that is the reason Teachers and learners could not expect the correct respond or information from the AI & AI powered tools. This is also a big challenge to the teachers.

Areas for Future Directions:

A few important suggestions for future research are it is overbearing to carryout prospective studies:

Process of teaching to test the prolonged implications of AI, AI-tools in the teaching-learning to the teachers and student in teaching language. It may increase the standardity in vocabulary acquisition, in the writing skills, Reading skills with the help of AI tools. AI specifically made for the field of education and its setting. It we want to investigate the AI & AI-powered tools such as chat bots, chat GPT, Google Gemini AI these food should be practiced by the teachers and students in the method o Teaching and learning. At the same time software engineers also do the needful changes. In the AI took which are biased users, like teachers and students may not free to use these toots because Date privacy date security. If the Teacher or Student uses these took information of the users may get public. In these technician have to take initiation about these scarity policies.
* Explore the AI and its tools into integrated into field of education instead of many different tools integrate into one or few limited tools. Integrate with the traditional methodologies with These AI-tools. It enhances the power or levels of teaching to the students in different style
* one more direction for the teachers are Companies or institutions should provide proper teacher training classes about using of AI-powered tools to the students and teachers to use properly. Finally this research paper Ladicado investigates the role of teachers must be controlled by AI and Its tools.

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Transforming English Language Teaching With AI: Challenges Opportunities And Future Directions

K. Raja Shekher
Lecturer in English, Girraj Government college(A),Nizamabad.

Abstract:

The article explores Transforming English language teaching with AI, highlighting techniques that facilitate vast knowledge acquisition in English, which is particularly significant for users of English who require in-depth knowledge of a subject. Focusing on opportunities, challenges, and emerging research frontiers in English, the article reimagines Transforming ELT in the AI Era, where artificial intelligence revolutionizes users' approaches to complex problems by providing extensive information on different areas and sources, thereby saving time and reducing tension.However, alongside these advantages, there are challenges, such as AI's potential to confuse users of English or fail to provide exact information, emphasizing that AI is a valuable source, but not a complete replacement, for English users. To produce meaningful usage of English, users should utilize AI as a tool to gather information, combining AI-generated insights with their own knowledge and ideas, rather than relying solely on it, which may yield negative results.Ultimately, users of English must recognize that fundamental science in the AI Era presents both opportunities and challenges, and that AI is a source, but not a substitute, for original work, enabling them to harness its potential while maintaining their critical thinking and creativity.

Key Words :
ELT, AI, Knowledge Acquisition, Opportunities, Challenges, Emerging Research Frontiers, Information, Critical Thinking, Creativity, Original Work, English Language Users, AI Era, Pedagogy, Technology Integration, Language Learning, Education

Introduction:

Transforming English language teaching with AI challenges opportunities and future directions presents numerous prospects and huge deals for users of English enabling them to prove their language skills and access fast knowledge AI powered tools can enhance listening, speaking, reading and writing skills facilitating effective communication and expression by automating routine task such as data analysis and literature review AI user to focus on complex and creative task promoting interdisciplinary collaboration and knowledge sharing global access to knowledge and personalized learning experience or also significant

benefits enabling users to update there knowledge and skill in line with the latest developments. However along side these prospects there are challenges including the risk of undermining critical thinking and creativity and biases in ai systems to hardness AI potential users of English must maintain a balanced approach combining AI generated insights with their own ideology and critical thinking by doing so Deccan contribute to break thoughts in their field make meaningful contributions to society and become proficient users of AI and fundamental science while avoiding over Reliance on technology and ensuring responsible research practices.

Balancing Opportunities And Challenges:

The integration of AI and transforming English language teaching with AI presents numerous opportunities and challenges for users of English, as it can enhance their language skills, including listening, speaking, reading, and writing, as well as grammar, syntax, and vocabulary, thereby leading to more effective communication and expression. It also facilitates focus on complex and creative tasks and fosters collaboration among users from diverse disciplines, promoting knowledge sharing and expertise.

Moreover, the global availability of knowledge and latest developments provides users with a personalized learning experience, allowing them to tailor their learning to their needs and goals, which can empower them to contribute to breakthroughs and make meaningful contributions to society.
However, there are challenges associated with AI, such as the potential undermining of critical thinking, which can impact the validity of users' work, and the rapid pace of AI development, which can create difficulties for users who must keep pace with the technology. Furthermore, AI may create challenges for first-generation and educationally deprived users in accessing AI-powered tools and resources.

To harness the potential of AI, users of English must be aware of these challenges and develop strategies to address them, leveraging AI's strengths while maintaining critical thinking and creativity to unlock new opportunities for language learning, knowledge sharing, and Innovation.

Transforming English Language Teaching With Ai: Challenges Opportunites And Future DirectionsAnOverview:

Artificial Intelligence (AI) presents both challenges and opportunities for the future of English language teaching. By understanding AI's capabilities, especially for English learners and general users, it can be leveraged effectively. AI is a tool that aids learning, helping to develop language skills such as listening, speaking, reading, and writing. However, it is crucial to recognize AI's limitations and use it judiciously.

While AI can facilitate learning, it cannot replace the nuanced understanding of language, creativity, and human intuition that a human teacher or learner provides. AI can provide information, but it struggles to interpret underlying meanings, implied messages, or the writer's emotions, which are essential aspects of language comprehension. For instance, AI may not fully grasp the deeper meaning of a poem or the emotions of characters in a story.

Therefore, AI is not a substitute for human teachers, students, or readers, but rather a supportive tool to enhance English language understanding. To maximize AI's benefits, teachers and learners can use it as a complementary tool for language learning. For example, AI-powered language learning applications can offer personalized learning experiences, assist with grammar and vocabulary practice, and help develop clear pronunciation.

These tools can provide instant feedback, allowing learners to track their progress and identify areas for improvement. Moreover, AI can help create interactive and engaging learning materials, such as virtual conversations, games, and quizzes, making language learning more enjoyable and effective. Additionally, AI can aid in assessing language proficiency, reducing the workload of teachers and providing learners with accurate assessments. However, it is essential to ensure that AI-driven assessments are designed to evaluate not only linguistic accuracy but also communicative competence and creativity.

In short, AI is a powerful tool in English language teaching, but it is crucial to remember its limitations and use it wisely. By understanding AI's capabilities and combining it with human expertise, we can enhance English language learning and provide learners with a more effective and engaging experience. As AI continues to evolve, it is essential to stay updated with the latest developments and explore new ways to integrate AI into language teaching and learning.Ultimately, the effective use of AI can lead to improved language proficiency, increased learner autonomy, and a more inclusive and accessible language learning environment.

Future Directions:

The topic of this article, "Future Directions," is highly important and relevant in today's society. It is something everyone should understand. The English language, for both first-generation and second-generation learners, is expected to undergo significant changes and advancements with the support of Artificial Intelligence. By incorporating advanced technology, these developments will help address current shortcomings.

The growth of AI is likely to be unprecedented, significantly enhancing language skills such as listening, speaking, reading, and writing, as well

as communication skills, sentence structure, and phraseology. AI has already served as a tool for English users, but it is expected to become an even more versatile tool in the future, assisting those who lack proficiency in English. It will also aid in language preservation and provide meaningful, natural information to users of other languages, effectively integrating language and technology.

Looking ahead, English users will have the opportunity to access more in-depth information. However, as mentioned earlier, AI will not replace English users but will instead serve as a beneficial and supportive tool.

Conclusion:

The integration of Artificial Intelligence (AI) in English Language Teaching (ELT) has the potential to revolutionize the way users approach complex problems and acquire knowledge. AI can provide extensive information on various subjects, saving time and reducing tension for English learners. However, alongside these advantages, there are challenges, such as AI's potential to confuse users or provide inaccurate information. This highlights the need for learners to use AI as a tool, rather than relying solely on it.

To harness the potential of AI in ELT, learners must recognize its limitations and combine AI-generated insights with their own knowledge and ideas. This approach enables learners to use English meaningfully while maintaining their critical thinking and creativity. AI can facilitate vast knowledge acquisition, particularly for learners who require in-depth understanding of a subject. Nevertheless, it is crucial to acknowledge that AI is not a complete replacement for human expertise, but rather a valuable resource that can aid the learning process.

The opportunities presented by AI in ELT are vast, and it is essential to explore emerging research frontiers to transform ELT in the AI era. AI can help learners access extensive information from different areas and sources, making it an indispensable tool for language learning. However, it is important to address the challenges associated with AI, such as ensuring information accuracy and promoting critical thinking among learners.Ultimately, the effective use of AI in ELT requires a balanced approach, where learners leverage AI's potential while maintaining their critical thinking and creativity. By recognizing AI as a source rather than a substitute for original work, learners can harness its power to enhance their language skills and produce meaningful content. As the field of AI continues to evolve, it is essential to stay updated with the latest developments and explore new ways to integrate AI into language teaching and learning.

In conclusion, the integration of AI in ELT presents both opportunities and challenges. By acknowledging AI's potential and limitations, learners can utilize it as a valuable tool to enhance their language skills while maintaining critical thinking and creativity. As the AI era continues to unfold, it is

crucial to reimagine ELT and explore new frontiers in language teaching and learning. Doing so will unlock the full potential of AI and create a more effective and engaging language learning environment.

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Evolution of English Language Teaching in India: From Chalkboard to Chatbot

S. Lavanya
Lecturer in English
Giriraj Government College (A) Nizamabad

Abstract

The evolution of English Language Teaching in India moved through several stages—from colonial grammar-translation methods to communicative and technology-based learning. Today, ELT aims to equip learners with practical communication skills for global participation while balancing India's multilingual identity. English Language Teaching (ELT) with Artificial Intelligence (AI) represents the latest stage in the development of language teaching methods. AI technologies are transforming how English is taught, learned, assessed, and practiced.

1. Traditional ELT (Before Technology)

Early English teaching methods focused mainly on grammar and translation. The predominant methods of this phase are Grammar Translation Method, Direct Method, Audio-Lingual Method, and Structural Approach, etc. These methods support teacher-centered classrooms, memorization of grammar rules that limits speaking practice of the students.

2. Communicative and Learner-Centred ELT

Later approaches emphasized communication and real-life language use.
Communicative Language Teaching (CLT)

It focuses on speaking and interaction with the activities like role plays, discussions, and group work. In this method Teacher acts as a facilitator rather than a lecturer. It helped students develop practical communication skills.

3. Digital and Computer-Assisted Language Learning

With the growth of computers and the internet, English teaching began using digital tools like Multimedia learning, Online classes and Language laboratories, etc. It is often called Computer-Assisted Language Learning (CALL).

4. AI-Based English Language Teaching (Present Stage)

Artificial Intelligence has brought a major transformation in ELT.

Examples include AI-powered tools such as:

- Duolingo
- ELSA Speak
- Grammarly

Key Features of AI in ELT

1. Personalized Learning

- AI analyzes student performance.
- Lessons are adjusted according to individual learning pace and level.

2. Instant Feedback

- Students receive immediate correction in grammar, pronunciation, and vocabulary.
- AI tools analyze pronunciation and fluency.
- AI can create practice exercises, quizzes, and conversations.
- Students can practice conversations anytime with AI chat systems.

Conclusion

The evolution of English Language Teaching has moved from grammar-focused methods to communicative approaches and now to AI-supported learning. Artificial Intelligence is making ELT more personalized, interactive, and accessible, but it should complement rather than replace the role of teachers.

Introduction

English language teaching (ELT) in India has undergone a remarkable and multi-layered transformation spanning nearly two centuries. From the colonial classrooms of the nineteenth century, where rote memorization and grammatical precision ruled the pedagogical imagination, to the digitally-enabled, AI-assisted learning environments of the twenty-first century, the journey of ELT in India reflects broader shifts in linguistic theory, educational philosophy, national identity, and technological advancement. Central to understanding this evolution is the Grammar Translation Method (GTM), a pedagogical framework that dominated Indian classrooms for generations and whose echoes continue to reverberate in contemporary teaching practices. Equally significant is the persistent and complex role of the mother tongue—whether Hindi, Telugu, Tamil, Bengali, Marathi, or any one of India's hundreds of regional languages—in mediating, enabling, or sometimes complicating the acquisition of English. This article traces the arc of ELT in India from its colonial origins through its post-independence restructuring to its current digital avatar, with particular attention to the Grammar Translation Method and the influence of the mother tongue on English learning.

The Colonial Classroom and the Grammar Translation Method

The formal history of English language teaching in India begins with Macaulay's Minute of 1835, a document that declared English to be the medium of instruction for higher education and effectively institutionalized the language as a marker of education and social advancement. The colonial educational apparatus that followed was heavily influenced by the Grammar Translation Method, a pedagogical approach that had its roots in the classical tradition of teaching Greek and Latin in European schools. GTM treated language primarily as a body of rules to be learned, memorized, and applied through translation exercises. Students were expected to parse sentences, identify grammatical components, and translate passages from English into their mother tongue and vice versa.

In the Indian colonial context, GTM was not merely a pedagogical choice but a political and administrative one. The British colonial authorities required a class of Indian administrators fluent enough in English to maintain the machinery of empire.

As a result, the emphasis in GTM-based instruction was on reading and writing, particularly translation, rather than on speaking or listening. Indian students learned English grammar rules with the same painstaking precision applied to Sanskrit or Persian grammar. The teacher occupied a central, authoritative role, and the classroom was largely lecture-based. Texts were drawn from canonical English literature—Shakespeare, Milton, and Dickens—which were analyzed grammatically but often read with little comprehension of their cultural and historical context.

The mother tongue played a contradictory role in GTM-based classrooms. On the one hand, GTM explicitly used the native language as a tool of instruction: teachers explained grammar rules in the regional language, and translation from English to the mother tongue was a central exercise. On the other hand, the broader colonial ideology positioned Indian languages as inferior to English, framing the mother tongue as a stepping-stone to be discarded once true English competence was achieved. This tension—between the pragmatic use of mother tongue as a pedagogical bridge and the ideological stigmatization of that same tongue—has never been fully resolved in Indian ELT and continues to shape attitudes toward bilingual instruction to this day.

Post-Independence ELT: Ideological Conflicts and Methodological Shifts

Indian independence in 1947 did not produce an immediate revolution in English language pedagogy. GTM remained the dominant method in schools across the country well into the 1960s and 1970s, partly because of institutional inertia, partly because of a shortage of trained teachers fluent in communicative approaches, and partly because GTM aligned comfortably with the examination culture that defined Indian education. Nationwide board examinations tested students primarily on their ability to write grammatically correct sentences, answer comprehension questions, and perform translation exercises—competencies that GTM was designed to develop.

However, post-independence India also witnessed significant methodological debates. Linguists and educationists influenced by developments in structural linguistics, particularly the work of Leonard Bloomfield and Charles Fries, began advocating the Audio-Lingual Method (ALM) as an alternative to GTM. ALM emphasized spoken language, pattern drills, and habit formation, drawing on behaviorist psychology. Several teacher training programs and experimental schools in India during the 1950s and 1960s attempted to incorporate ALM principles, but the method never gained the traction in India that it did in North American contexts. The reasons were both practical—a lack of language laboratories and audio equipment—and cultural: the oral-drill format of ALM felt alien in classrooms accustomed to the teacher-centered lecture style of GTM.

The role of the mother tongue in post-independence ELT was shaped by the Three Language Formula adopted as part of the National Policy on Education. This formula required students to learn English, Hindi, and a regional language, acknowledging the multilingual reality of India while maintaining English's privileged position. In practice, the Three Language Formula reinforced rather than challenged the bilingual nature of English instruction. Teachers in regional-medium schools continued to use the mother tongue extensively as a language of explanation, even in English classrooms, while the official curriculum maintained the fiction of English-only instruction. This gap between policy and practice remains a defining feature of ELT in India.

Communicative Language Teaching and Its Indian Adaptation

The global rise of Communicative Language Teaching (CLT) in the 1970s and 1980s, associated with the work of Dell Hymes, Henry Widdowson, and David Wilkins, eventually made its influence felt in Indian ELT, though the process of adoption was slow, uneven, and often incomplete. CLT shifted the focus from grammatical accuracy to communicative competence—the ability to use language effectively and appropriately in real social contexts. It foregrounded speaking and listening, emphasized meaningful interaction over rote exercise, and regarded errors as natural stages in the learning process rather than failures to be penalized.

The National Curriculum Framework (NCF) of 2005, a landmark document in Indian educational policy, formally endorsed the principles of CLT and called for a shift away from the grammar-and-translation model. The NCF argued that English language classrooms should be sites of meaning-making rather than grammar instruction, that students should be exposed to authentic texts and real communicative tasks, and that the mother tongue should be used as a resource rather than treated as a problem. The document represented a significant conceptual departure from the GTM tradition, but its implementation in Indian classrooms has been deeply inconsistent.

The inconsistency of CLT adoption in India is largely explicable by the conditions that made GTM so durable. The examination system continued to reward grammatical accuracy and essay-writing over spoken fluency. Teacher training programs were slow to incorporate CLT methodologies. Rural schools and government institutions, which serve the vast majority of Indian students, lacked the infrastructure and trained personnel to implement communicative approaches. In many classrooms, what emerged was a hybrid pedagogy: teachers nominally followed CLT frameworks in their lesson plans while continuing to teach grammar rules, conduct translation exercises, and use the mother tongue as the primary medium of explanation. This unofficial hybridization of GTM and CLT is perhaps the most accurate description of ELT in India in the late twentieth century.

Mother Tongue Influence: A Complex and Persistent Factor

The influence of the mother tongue on English language acquisition in India is one of the most extensively studied and debated issues in Indian applied linguistics. Interference theory, associated with the work of Uriel Weinreich and later elaborated by applied linguists like S. P. Corder, posits that learners' first language structures are transferred—sometimes productively, sometimes disruptively—into their second language production. In the Indian context, this interference operates at multiple levels: phonological, syntactic, lexical, and pragmatic.

At the phonological level, mother tongue influence is immediately audible. Telugu speakers may produce English with retroflex consonants absent in standard English phonology. Bengali speakers may devoice word-final consonants. Punjabi speakers may render the English interdental fricatives as alveolar stops. These accent features are not merely cosmetic: they can cause comprehension difficulties in high-stakes contexts such as interviews, examinations, or international communication. English language teachers in India have long grappled with the question of whether accent modification should be a goal of instruction or whether regional accents should be celebrated as part of India's diverse linguistic identity.

At the syntactic level, mother tongue influence produces characteristic error patterns. Indian learners of English frequently omit articles, because languages like Hindi, Telugu, and Tamil lack the definite and indefinite article system of English. Constructions like 'I went to market' or 'She is good girl' reflect direct syntactic transfer from articleless mother tongues. Similarly, the verb-final order of many Indian languages produces constructions like 'I the book bought,' particularly among beginner learners. Subject-verb agreement errors and tense confusion also reflect interference from mother tongues that mark tense and aspect differently from English.

At the pragmatic level, mother tongue cultural norms influence how Indian learners use English in social situations. Concepts of politeness, formality, and directness differ significantly across Indian linguistic cultures and the Anglo-American norms embedded in standard English usage. Indian English speakers often use forms of address and levels of elaboration that seem excessive or unusual to native English speakers, reflecting the politeness conventions of their mother tongues. Conversely, features of Indian English that seem pragmatically direct—such as the use of 'do one thing' as a conversation opener—reflect the idioms of underlying Indian languages.

Contemporary applied linguists have moved away from viewing mother tongue influence purely as a form of interference or error. The concept of translanguaging, developed by Ofelia García and Li Wei, offers a more nuanced framework in which multilingual speakers draw fluidly on their entire linguistic repertoire as a unified communicative resource. From a translanguaging perspective,

the Indian English speaker who moves between English and Telugu in a single conversation is not making errors but deploying a sophisticated multilingual competence. This perspective has important implications for pedagogy: rather than penalizing code-switching, teachers might harness it as a resource for deeper understanding.

Digital Revolution and the Age of the Chatbot

The twenty-first century has brought a dramatic technological transformation to ELT in India. The proliferation of smartphones, affordable internet access, and digital learning platforms has created entirely new contexts and possibilities for English language learning. Apps like Duolingo, ELSA Speak, and Google's Bolo have been specifically designed with Indian learners in mind, offering gamified vocabulary exercises, pronunciation feedback powered by speech recognition, and reading activities calibrated to Indian school curricula. YouTube channels devoted to English grammar, spoken English, and interview preparation attract tens of millions of Indian viewers, bypassing the formal classroom entirely.

Artificial intelligence has introduced perhaps the most significant disruption to English language learning since the invention of the textbook. Large language models such as ChatGPT, Google Gemini, and Anthropic's Claude allow learners to engage in extended written conversations in English, receive instant grammatical feedback, request explanations of complex structures, and practice different registers of English on demand. For Indian learners in small towns and rural areas without access to English-speaking peers or skilled teachers, AI chatbots represent an unprecedented opportunity to practice English in a low-stakes, judgment-free environment. The chatbot does not mock a learner's accent, does not lose patience with repeated questions, and is available at any hour of the day or night.

Interestingly, the digital era has not swept away the Grammar Translation Method. On the contrary, many of the most popular English learning resources on YouTube and in mobile apps explicitly teach grammar rules in Indian regional languages, combining the structural clarity of GTM with the accessibility of digital media. Channels that explain English grammar rules in Hindi, Telugu, Tamil, or Bengali attract enormous audiences, suggesting that the GTM tradition—and the role of the mother tongue as an explanatory medium—retains deep popular appeal even in the age of communicative language teaching. The grammar-translation impulse, it seems, is not a relic of the colonial past but a persistent feature of how many Indian learners prefer to approach English.

GTM Revisited: From Critique to Rehabilitation

The theoretical literature on ELT has been consistently critical of GTM since the communicative revolution of the 1970s. Critics have argued that GTM produces learners who can analyze English sentences but cannot communicate spontaneously, who can translate but cannot converse, who know grammar rules but cannot deploy

them fluently in real time. These criticisms are not without foundation. Generations of Indian students have emerged from GTM-dominated classrooms with considerable passive knowledge of English—the ability to read and write with reasonable accuracy—but limited spoken fluency.

However, the wholesale rejection of GTM has also been questioned. Researchers in the field of explicit grammar instruction, including Rod Ellis and Norbert Schmitt, have demonstrated that explicit attention to grammatical form can accelerate acquisition in certain contexts, particularly for adult learners and in formal academic settings. The Indian academic context, with its emphasis on written examination performance and its multilingual classrooms, may be precisely the kind of environment where explicit grammar instruction offers genuine pedagogical advantages. A purely communicative approach, designed for immersive English environments, may be poorly suited to classrooms where students share a common mother tongue and have limited exposure to English outside school hours.

The emerging consensus in Indian ELT research advocates for what may be called a principled eclecticism: drawing on the structural clarity of GTM where appropriate, the communicative authenticity of CLT where resources permit, and the technological affordances of digital and AI-assisted learning where available. This eclectic approach also implies a more honest reckoning with the role of the mother tongue. Rather than maintaining the fiction of English-only classrooms while unofficially permitting mother tongue use, contemporary pedagogy can explicitly incorporate translanguaging strategies, using the mother tongue as a scaffold for English learning rather than treating it as an obstacle to be overcome.

Conclusion

The evolution of English language teaching in India—from the chalk-dusted classrooms of the colonial grammar school to the AI-powered chatbots of the digital age—is a story of continuity as much as change. The Grammar Translation Method, though officially displaced by communicative approaches, has never truly disappeared from Indian classrooms. The mother tongue, though officially marginalized by English-medium ideology, has never ceased to exercise its deep influence on how Indian learners understand, produce, and negotiate English. The challenge facing Indian ELT today is not to choose between tradition and innovation, or between GTM and CLT, or between English and the mother tongue, but to develop pedagogies sophisticated enough to honor all of these dimensions simultaneously.

The chatbot represents not the end of the chalkboard's legacy but its continuation in digital form: a patient explainer of grammar rules, a provider of corrective feedback, a bridge between what the learner already knows and what the language demands. As India moves further into the twenty-first century, its teachers, learners, and policymakers will need to engage with this complex inheritance—

colonial, nationalist, communicative, and digital—with clarity, creativity, and an unflinching respect for the multilingual realities that make English language teaching in India one of the most fascinating pedagogical challenges in the world.

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Virginia Woolf to Virtual Voices: Evolution of Women's Expression in the Age of Artificial Intelligence

Nikkhat Fatima
Lecturer in English,
Girraj Government College (Autonomous), Nizamabad.

Abstract

The evolution of women's expression represents a continuous negotiation between structural constraints and creative possibilities shaped by historical, cultural, and technological transformations. From the early twentieth century, when Virginia Woolf articulated the necessity of intellectual independence and material resources for women's creative production, to the contemporary digital era defined by artificial intelligence (AI), women's voices have undergone a profound expansion in both scope and visibility. This research paper examines the historical trajectory of women's expression, tracing its development from marginalized literary participation to dynamic engagement within digitally mediated and algorithmically influenced environments.

The study critically explores how emerging technologies, particularly artificial intelligence, are reshaping the frameworks of authorship, creativity, and representation. AI-driven tools, including natural language generation systems, virtual assistants, and digital avatars, have significantly lowered barriers to content creation, enabling broader participation across geographical and socio-economic boundaries. These developments have facilitated the emergence of "virtual voices," wherein human creativity is augmented, extended, or sometimes simulated through technological means. As a result, women are increasingly able to assert their identities, share their experiences, and participate in global conversations without relying on traditional institutional gatekeepers.

However, the integration of AI into creative and communicative practices also raises critical concerns. Algorithmic bias, rooted in historically unequal data structures, often reproduces gender stereotypes and reinforces systemic inequalities. Furthermore, the blurring of boundaries between human and machine-generated content complicates conventional understandings of authorship, authenticity, and intellectual ownership. These challenges necessitate a nuanced and ethically informed approach to the use of AI in shaping women's expression.

Through a qualitative and interdisciplinary methodology that integrates literary analysis, feminist theory, and digital media studies, this paper investigates

both the empowering and problematic dimensions of AI-driven expression. It argues that while AI has the potential to amplify women's voices and democratize access to creative tools, it must be critically examined to ensure inclusivity, fairness, and ethical accountability.

Ultimately, this study positions the transition from Woolf's call for a "room of one's own" to the emergence of virtual voices as a significant moment in the history of women's expression. It highlights the importance of sustaining feminist values within technological innovation, emphasizing that the future of women's voices depends not only on access to tools but also on the equitable structures that govern their use.

Keywords: Virginia Woolf, Feminism, Women's Voice, Literary Expression, Modernism, Artificial Intelligence, Digital Identity, Virtual Voices, Cyberfeminism, AI Ethics, Gender Bias, Digital Storytelling

Introduction

The history of women's expression is deeply intertwined with broader struggles for equality, autonomy, and recognition. For centuries, women's voices were systematically marginalized within patriarchal societies that prioritized male authority in cultural, intellectual, and political domains. Women were often confined to private spaces, their creative and intellectual contributions dismissed or rendered invisible. As a result, the development of women's expression has been shaped not only by individual creativity but also by persistent efforts to challenge structural inequalities and reclaim spaces of articulation.

The early twentieth century marked a critical turning point in this historical trajectory. During this period, Virginia Woolf emerged as a pioneering figure who articulated the conditions necessary for women's creative freedom. In her seminal work *A Room of One's Own* (1929), Woolf argued that women require both financial independence and personal space to produce literature. This argument extended beyond the literal need for a physical room, symbolizing the broader socio-economic and psychological conditions that enable creative expression. Woolf's insights revealed the systemic barriers that had historically prevented women from participating fully in literary culture, while also offering a vision of empowerment grounded in autonomy and self-determination.

Building upon Woolf's foundational ideas, feminist movements throughout the twentieth century expanded the scope of women's expression. Scholars and writers such as Simone de Beauvoir and Adrienne Rich examined the ways in which

gender is socially constructed and how language functions as a site of power and resistance. Their work emphasized that expression is not merely a personal act but also a political one, shaped by cultural norms and institutional structures. As access to education and publishing opportunities increased, women began to assert their voices across diverse genres and disciplines, contributing to a more inclusive and representative literary landscape.

The latter part of the twentieth century and the beginning of the twenty-first century witnessed the emergence of digital technologies that fundamentally transformed the nature of communication. The internet and social media platforms enabled individuals to share their ideas instantly and globally, bypassing traditional gatekeepers such as publishers and media institutions. For women, these developments created new opportunities to articulate their identities, engage in activism, and build communities of support. Digital platforms facilitated the rise of new forms of expression, including blogs, online journals, and multimedia storytelling, thereby expanding the boundaries of what constitutes authorship and creativity.

In recent years, the rapid advancement of artificial intelligence has introduced a new dimension to this evolving landscape. AI technologies, including machine learning algorithms, text-generation systems, and virtual avatars, have begun to reshape the processes of content creation and dissemination. These tools offer unprecedented possibilities for innovation, enabling users to generate text, simulate voices, and create interactive narratives with minimal resources. For women, AI presents both opportunities and challenges. On one hand, it enhances access to creative tools and amplifies voices that might otherwise remain unheard. On the other hand, it raises concerns about algorithmic bias, representation, and the authenticity of expression.

The concept of "virtual voices" encapsulates this transformation, referring to the ways in which human expression is mediated, augmented, or even replicated through technological systems. These voices challenge traditional notions of authorship by blurring the boundaries between human and machine-generated content. They also raise important questions about ownership, accountability, and ethical responsibility in the digital age.

This research paper seeks to examine the evolution of women's expression from the era of Virginia Woolf to the contemporary age of artificial intelligence. It explores how technological advancements have both expanded and complicated the possibilities of expression, highlighting the need for critical engagement with emerging tools and platforms. By situating AI within a broader feminist framework,

the study aims to understand how women's voices can be sustained, amplified, and protected in an increasingly digital and algorithm-driven world.

1. Virginia Woolf and the Foundations of Feminist Expression

Virginia Woolf occupies a central place in the history of feminist thought and literary expression. Her work challenged the patriarchal structures that limited women's access to education, resources, and creative opportunities. By emphasizing the importance of autonomy, Woolf highlighted the conditions necessary for meaningful artistic production.

In *A Room of One's Own*, Woolf argued that women require both financial independence and personal space to create literature. This argument reflects a broader critique of societal inequalities that have historically constrained women's lives. Woolf's insistence on material and psychological freedom underscores the interconnected nature of economic, social, and cultural factors in shaping expression. Woolf also addressed the historical absence of women's voices in literary traditions. Through her imaginative reconstruction of Judith Shakespeare, she illustrated how systemic barriers would have prevented even the most talented women from achieving recognition. This narrative serves as a powerful critique of the structures that have marginalized women's contributions.

Moreover, Woolf's experimental narrative techniques, including stream-of-consciousness writing, expanded the possibilities of literary expression. Her work challenged conventional forms and created space for new modes of storytelling. In doing so, she not only advocated for women's voices but also redefined the nature of literature itself.

2. Expanding Feminist Voices in the Twentieth Century

The influence of Woolf's ideas can be seen in the development of feminist thought throughout the twentieth century. Simone de Beauvoir's *The Second Sex* provided a comprehensive analysis of women's oppression, arguing that gender is a social construct rather than a biological inevitability. This perspective opened new avenues for understanding identity and expression.

Adrienne Rich further expanded feminist discourse by examining the relationship between language and power. She argued that language has historically been shaped by male perspectives, and that women must reclaim it as a tool for self-expression. Rich's work emphasized the importance of redefining narratives to reflect women's experiences.

The feminist movements of the twentieth century also led to significant social and political changes, including increased access to education and employment. These developments enabled more women to participate in literary and cultural

production. As a result, the range of voices and perspectives in literature expanded, contributing to a more inclusive cultural landscape.

Feminist literary criticism emerged as a key field during this period, challenging traditional interpretations and highlighting the contributions of women writers. By analyzing texts through a gendered lens, critics were able to uncover hidden meanings and recover neglected works.

3. Digital Transformation and the Rise of New Media

The digital revolution has had a profound impact on the ways in which women express themselves. The internet has created new platforms for communication, allowing individuals to share their ideas with a global audience. This democratization of expression has enabled women to bypass traditional barriers and engage directly with readers and viewers.

Social media platforms, blogs, and online communities have become important spaces for women's voices. These platforms allow for the sharing of personal experiences, creative works, and political opinions. They also facilitate the formation of communities that provide support and solidarity.

Digital storytelling has emerged as a significant form of expression, combining text, images, and multimedia elements. This approach allows for more complex and nuanced representations of identity. Women can explore multiple aspects of their experiences and present them in innovative ways.

However, the digital environment is not without its challenges. Issues such as online harassment, privacy concerns, and the spread of misinformation can limit women's participation. These challenges highlight the need for safer and more inclusive digital spaces.

4. Artificial Intelligence and the Transformation of Expression

Artificial intelligence represents a new frontier in the evolution of expression. AI technologies can generate content, analyze data, and simulate human communication. These capabilities have significant implications for creativity and authorship.

For women, AI offers opportunities to enhance their creative practices. Writing tools, voice assistants, and content generators can support the development of ideas and facilitate the production of content. AI can also improve accessibility by providing translation and speech-to-text features.

At the same time, AI systems are influenced by the data on which they are trained. If this data reflects existing biases, the resulting outputs may reinforce stereotypes and inequalities. This raises important questions about representation and fairness in AI-driven expression.

5**. Authorship and Creativity in the Age of AI**

The rise of AI challenges traditional notions of authorship and creativity. When machines generate content, the distinction between human and machine authors becomes blurred. This has important implications for how we understand ownership and originality.

For women, who have historically struggled for recognition, this shift presents both opportunities and challenges. On one hand, AI can provide tools that enhance creativity and expand access to publishing. On the other hand, it complicates the question of who owns a piece of work and how credit should be assigned.

The concept of authenticity also becomes more complex in this context. If AI can replicate a particular style or voice, it becomes difficult to distinguish between genuine expression and imitation. This raises questions about the value of originality and the role of human creativity.

6. Algorithmic Bias and Ethical Considerations

Algorithmic bias is a significant concern in the development and use of AI technologies. Feminist scholars have highlighted how biases in data and design can lead to unequal outcomes. For example, search engines and recommendation systems may prioritize certain perspectives while excluding others.

Addressing these issues requires a commitment to diversity and inclusion in the field of AI. Increasing the representation of women and marginalized groups in technology is essential for creating more equitable systems.

Ethical considerations also play a crucial role in the development of AI. Developers must consider the social impact of their technologies and ensure that they do not perpetuate harm. Transparency, accountability, and continuous evaluation are key components of ethical AI practices.

7. Virtual Voices and Digital Identities

Virtual voices represent a new form of expression that combines human creativity with technological innovation. These voices can take the form of digital avatars, AI-generated narratives, or interactive platforms.

For women, virtual voices offer opportunities to explore new forms of identity and expression. They enable experimentation and creativity, allowing individuals to present themselves in ways that may not be possible in physical spaces.

However, virtual voices also raise questions about authenticity and ownership. Who controls these voices, and how are they used? Ensuring that virtual spaces are inclusive and representative is essential for maintaining the integrity of women's expression.

8. Reimagining Woolf in the Age of AI

Virginia Woolf's ideas remain relevant in the contemporary digital landscape. Her emphasis on intellectual freedom and creative space can be

reinterpreted in relation to digital technologies. Today, access to technology and digital literacy can be seen as modern equivalents of Woolf's "room of one's own." By applying Woolf's insights to the age of AI, we can better understand the challenges and opportunities that women face in digital environments. Her vision of independence and self-expression continues to inspire efforts to create more inclusive and equitable spaces for creativity.

Objectives of the Study

The primary objective of this research is to examine the transformation of women's expression across historical and technological contexts, with particular emphasis on the transition from traditional literary forms to contemporary AI-mediated communication. In order to achieve this overarching aim, the study is guided by the following specific objectives:

- To analyze the historical development of women's expression, beginning with early twentieth-century feminist thought and extending to contemporary digital practices, in order to understand the changing conditions that have shaped women's voices.
- To critically examine the contributions of Virginia Woolf and other feminist thinkers in establishing the theoretical foundations for women's creative autonomy and intellectual independence.
- To investigate the impact of technological advancements, including digital media and artificial intelligence, on the forms, platforms, and accessibility of women's expression.
- To explore how AI-driven tools, such as text-generation systems and virtual communication technologies, are influencing the processes of authorship, creativity, and storytelling among women.
- To identify and analyze issues of representation, bias, and inequality within AI systems, with particular attention to how these factors affect women's voices and identities.
- To evaluate the ethical implications of AI in the context of feminist discourse, including concerns related to authenticity, ownership, and accountability.
- To assess the opportunities provided by AI for amplifying marginalized voices and fostering inclusive forms of communication.
- To propose strategies for ensuring that technological advancements contribute to equitable and ethical practices in the representation of women's experiences.
- To encourage interdisciplinary dialogue between literary studies, feminist theory, and digital media research in order to develop a comprehensive understanding of the evolving nature of expression.
- To contribute to ongoing scholarly discussions on gender and technology by providing insights into the relationship between innovation and social justice.

Research Methodology

This study uses a qualitative and interdisciplinary approach, combining literary analysis, feminist theory, and digital media studies to examine the transformation of women's expression.

Findings

1. Women's expression has expanded significantly across digital platforms
2. AI has increased accessibility and visibility
3. New forms of storytelling have emerged
4. Bias and inequality persist in AI systems
5. Authenticity is increasingly complex

Suggestions

- Promote inclusive AI development
- Encourage digital literacy
- Support women creators
- Ensure ethical practices
- Expand research in gender and technology

Conclusion

The journey from Virginia Woolf's advocacy for creative independence to the emergence of AI-driven expression represents a profound transformation in women's voices. While technology has created new opportunities for creativity and communication, it has also introduced challenges that must be addressed.

The future of women's expression depends on the development of inclusive and ethical technologies. By combining innovation with critical awareness, it is possible to create a digital landscape that empowers women and ensures that their voices continue to be heard.

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Understanding the Vocabulary Acquisition Process through the Application of Psycholinguistic Theories: A Study of ESL Students in Higher Education AI Assisted Classrooms

Jadav Vasanth
Lecturerinenglish (G)
Girraj Government College (A), Nizamabad

Introduction:

The vocabulary of a language enhances the clarity and efficacy of communication, whereas grammar provides a language with a fundamental structure. This makes learning a language's vocabulary an endless process. A greater grasp of the language results from increased vocabulary.

A typical adult ESL student in India receives unstructured exposure to English in a variety of circumstances outside the classroom and has an incidentally accumulated share of vocabulary, even though the necessity for structured input of vocabulary is still crucial. In this case, teaching languages at the university level becomes an even more challenging procedure, necessitating a better comprehension of the vocabulary acquisition process. Understanding how learners acquire vocabulary is crucial for designing effective teaching strategies. Through its many ideas and methods, psycholinguisticsa cognitive study of the language processassists in gaining a greater understanding of the workings of vocabulary acquisition.

Several explanations have been proposed in light of these word correlations in a network. Semantic Network Theory, Hierarchical Network Model, Spreading Activation Theory, and other theories aim to model and structure networks (Aitchison 2003). The connectionist theories explain how networks are active and a specific word is retrieved from a network in response to external stimuli. These theories make analogies from computer science, neurology, and psychology. The ideas that the researchers in this subject choose to work on depend on the needs of the research.

Through this study, the researcher aims to comprehend the cognitive mechanism underlying higher education classroom ESL learners' acquisition of vocabulary. This study was conducted in a classroom using research materials that were taken from the required course material.

To organise the exams and analyse the learners' linguistic behaviour, psycholinguistic theories and methods have been used. Deeper research on the nature of second language vocabulary acquisition, psycholinguistic theories, and the current situation in India with regard to teaching English as a second language has been done in order to better grasp the issue at hand.

Research Problem:

The L2 English learners in India do not currently receive enough organised input or testing in their courses when it comes to studying vocabulary. However, students learn English vocabulary from a variety of sources besides classroom instruction. As was already said, the language has a rich heritage and roots in India. The number of sources via which people are exposed to the language has dramatically risen with the onset of globalisation. Students in higher institutions, particularly those who reside in large cities, are exposed to English terminology in a variety of contexts through new media, science, social media, mass media, international sports, and other outlets.

It is clear that the students are unable to communicate using the words they have unintentionally picked up. Most of their terminology is restricted to certain circumstances or is used improperly in other contexts. Some words are used more than once, but always in the same context. They are not urged by the curriculum to delve into the nuances and various connotations of words. They are unable to draw connections between the vocabulary they are exposed to and consolidate it. As a result, the teacher is kept in the dark regarding the students' vocabulary development.

Hypothesis Of The Study:

The way by which L2 learners acquire vocabulary is influenced by the introduction of semantic networking as a vocabulary teaching technique.

Hypothesis 1, exposure to vocabulary increases the number of linkages that have semantic significance.

Hypothesis 2: suggested that vocabulary instruction may make good use of the semantic linkages. A review of earlier studies made some potential findings and the best research methods clear.

The hypotheses were developed following an exhaustive review of the research on vocabulary acquisition, psycholinguistic theories for vocabulary acquisition, the effectiveness of word association tests as a research tool, and the requirement for an extensive study in India. To choose the best methodology to test the hypotheses, a thorough analysis of comparable studies on terminology across the globe was required.

Research Methodology:

In order to establish a technique for the current study that would work, it was necessary to evaluate previous research in order to gain an understanding of the practical challenges associated with running word association tests and how to modify the methodology to suit the needs of the researcher. For the purpose of conducting the word association test required for this study, the research of psycholinguists such as Aitchison, Paul Meara, Fitzpatrick, and Brent Wolter was a significant source of information. The researcher used their L2 learner methodological studies as a guide throughout the entire study. However, the

researcher had to use a great deal of judgement in defining the classification scheme and categorising the responses.

Study 1 is a three-phased experiment using word association tests (to test Hypothesis 1).

Study 2 is a comparative experiment that involved teaching vocabulary using two different approaches—the word definition method and the semantic mapping method—and comparing the outcomes of the two approaches (to test Hypothesis 2).

Conclusion

The study tries to show that word association studies provide a deeper understanding of the word acquisition, retention, and production process. It has also been demonstrated that an essential sort of word knowledge needed for effectively building and using a vocabulary is the association between words.

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Beyond Grammar Drills: How AI Is Reshaping English Language Teaching

Pusapati Stitha Pragna
Lecturer in English
Girraj Government College (A), Nizamabad
English Language Teaching / Applied Linguistics

Abstract:

For decades, English language teaching has leaned heavily on repetition — conjugate the verb, fill in the blank, drill until the pattern sticks. It worked, up to a point. But it never quite captured the messy, living reality of how human beings actually learn to communicate. Today, artificial intelligence is stepping into that gap, and the conversation about what language teaching can be is shifting in ways few educators anticipated.

This paper explores how AI technologies are fundamentally reshaping English language teaching (ELT), moving the field beyond the mechanical rhythms of grammar drills toward something far more dynamic, personalised, and — crucially human. Drawing on recent developments in natural language processing, adaptive learning platforms, and AI-powered conversational tools, the study examines how these innovations are changing the day-to-day experience of both teachers and learners in diverse educational contexts.

At the heart of this transformation is a simple but powerful idea: that learners are not uniform. They arrive in classrooms with different histories, anxieties, motivations, and learning rhythms. Traditional approaches, constrained by time and class size, have rarely been able to honour that diversity fully. AI, at its best, offers a response to this long-standing challenge — providing real-time feedback, adjusting difficulty with sensitivity to a learner's pace, and creating low-stakes spaces where students can practise without the fear of embarrassment that so often silences them.

Yet this paper does not treat AI as a silver bullet. It also interrogates the tensions and risks that come with its adoption — questions of equity in access, the potential erosion of the teacher's irreplaceable relational role, and the danger of mistaking technological novelty for genuine pedagogical progress. Not every AI tool is created equal, and enthusiasm must be tempered with critical discernment.

The findings suggest that the most promising futures for AI in ELT are not those in which the technology replaces the teacher, but those in which it frees the teacher — from the burden of repetitive assessment, from the impossibility of

individualising instruction at scale — so that genuine human connection, creativity, and mentorship can flourish in the classroom.

Ultimately, this paper argues that the question is not whether AI belongs in language education, but how we shape its role with intention, wisdom, and a steadfast commitment to what learning a language is really about: the deeply human desire to be understood.

Keywords: artificial intelligence, English language teaching (ELT), personalised learning, natural language processing, adaptive learning, grammar instruction, learner autonomy, educational technology, teacher-student relationship, language pedagogy.

Introduction

Every English teacher knows that student who sails through grammar tests without a blunder and goes mute when a real conversation begins. This is the outcome of drills. Drills will accurately create capable examinees and practically nothing else. Language is not a pattern to be identified — it is something we do with other people, like having a real conversation often.

In the twentieth century, the dominant approaches to language instruction were built on a narrow theory of how people learn. Behaviourist syllabi gave teachers pattern drills that measured easily and assessed efficiently; grammar was carved into discrete, sequenceable units by structural approaches. Both methods were useful in limited ways. What they struggled to produce was a learner willing and able to use language beyond the conditions in which it had been practised.

AI is certainly not the first tool presented as an answer to this problem. Language laboratories, early computer-assisted programmes, and CD-ROM courseware each entered classrooms carrying inflated promises, and each eventually settled into a supplementary role once the initial enthusiasm met the complexity of actual teaching (Warschauer and Healey 57). The question worth asking, then, is whether AI belongs to that same pattern — or whether something genuinely new is happening.

This paper takes the position that AI does represent a real shift in what is possible for language education, though perhaps not for the reasons most frequently cited. The argument is not about processing speed, or the sheer quantity of data these systems can handle. It is about adaptability — the ability to respond to individual learners in ways that a single teacher managing thirty students cannot physically manage. A platform that tracks where a specific learner consistently misapplies a

tense structure, then adjusts what it offers next, is doing something qualitatively different from a textbook. That distinction matters.

That said, this paper has no interest in functioning as promotional material. AI adoption in English Language Teaching (ELT) raises legitimate and uncomfortable questions about equity, about what gets lost when teaching is automated, and about who carries the cost when things go wrong. Those questions are taken seriously here. The study synthesises scholarship from Computer-Assisted Language Learning (CALL), second language acquisition (SLA) theory, and educational AI research to interrogate what the evidence actually demonstrates — not just where these technologies perform well, but where they fall short, and under what conditions.

Literature Review

The history of technology in language education is worth understanding precisely because it keeps repeating itself. New tools arrive, attract large claims, produce uneven results, and eventually find their place as one option among many. Warschauer and Healey mapped three phases of CALL — behaviouristic, communicative, and integrative — and observed that each wave tracked broader shifts in how linguists understood acquisition, rather than being driven purely by what the technology made possible (57). The tool, in other words, tends to follow the theory, or at least it should.

Krashen's input hypothesis contributed something important to this picture: learners acquire language through exposure to comprehensible input — material that is slightly beyond their current level but accessible enough to process — not through drilling correct forms into memory (Krashen 2). The implications for classroom design were significant and, for a long time, slow to take hold. If acquisition depends on meaningful exposure and low-anxiety interaction, then an instruction model centred on corrective drilling does not merely fail to help — it actively undermines the conditions under which learning occurs.

Chapelle examined how CALL environments could be built to align with interactionist accounts of SLA, particularly the principle that meaning negotiation — the adjustment that speakers make when communication breaks down — is what drives language development forward (Chapelle 40). Early software could respond to right and wrong answers. It could not negotiate. Natural language processing eventually changed that relationship, incrementally and then, with large language models, all at once.

Methodology

This is a qualitative, interpretive study organised around a systematic review of existing literature. No new empirical data was generated. The purpose was to

synthesise current research in a way that could be useful to teachers and administrators weighing decisions about AI adoption in ELT settings.

Language Learning & Technology, *TESOL Quarterly*, *Computers & Education*, and the *British Journal of Educational Technology* were among the sources drawn from peer-reviewed journals across applied linguistics, CALL, educational technology, and AI in education. Search terms used in combination included: artificial intelligence, ELT, CALL, adaptive learning, natural language processing, second language acquisition, chatbots, and language pedagogy. The review prioritised studies that engaged with classroom contexts, learner outcomes, and teacher experience, rather than purely technical evaluations of system performance.

Analysis follows a thematic structure organised around four recurring tensions in the literature: (1) personalisation versus equity; (2) automated feedback quality versus surface-level correction; (3) learner engagement versus communicative depth; and (4) technological adoption versus pedagogical coherence. These are not clean dichotomies — they overlap and complicate one another. But they provide a workable scaffold for reading the evidence critically rather than selectively.

One clarification about scope: this study is not a meta-analysis. The range of contexts, tools, learner profiles, and outcome measures in current AI-ELT research makes statistical aggregation unreliable at this stage of the field. What this review offers is a critical reading of the available evidence, attentive to the conditions under which specific findings hold and where they do not.

Findings

Personalisation: What the Evidence Actually Shows

The most consistently supported finding in the AI-ELT literature is that adaptive, individualised feedback improves certain learner outcomes — particularly vocabulary acquisition and grammatical accuracy at the sentence level (Chen et al. 215). Platforms that calibrate item difficulty to response patterns, provide immediate corrective feedback, and allow self-paced progress routinely outperform conventional drill-and-practice instruction in controlled comparisons.

What that finding does not establish is as significant as what it does. Improved performance on discrete accuracy tasks does not reliably transfer to communicative competence. A learner who correctly flags subject-verb agreement errors in a structured exercise may still fail to produce those same structures accurately when speaking under communicative pressure. That gap between controlled accuracy and spontaneous production is thoroughly documented in SLA research. Current AI platforms have not yet convincingly closed it.

Duolingo, probably the most studied commercial language learning platform, reports strong engagement metrics across an enormous user base. Independent assessments of its effectiveness for developing productive language skills — speaking and extended writing beyond formulaic exchanges — are considerably less encouraging. The platform does well what it was built to do. That is not equivalent to doing what language teaching in the full sense of the term requires.

Automated Feedback and Its Limits

Automated writing evaluation tools — including Grammarly and similar grammar-checking integrations — have been adopted in ELT contexts to give learners faster feedback on written work. Research on these tools generally confirms that they improve surface-level accuracy: spelling, punctuation, basic grammatical form (Luckin et al. 112). What they do not improve in any consistent way are the discourse-level qualities of writing: argument structure, paragraph coherence, register-appropriate vocabulary selection.

That is a pedagogically inconvenient finding. In academic writing contexts precisely where such tools are most often deployed — it is the discourse-level qualities that carry the most weight. A grammatically tidy essay with a weak argument has not been improved in any way that matters for academic success. Teachers who treat AWE tools as substitutes for their own feedback on student writing may be giving students technically accurate but intellectually shallow guidance, without knowing it.

The feedback issue also points to something broader about what learners actually need when they make errors. Not all errors are equivalent. Some reflect systematic misunderstanding that requires targeted instruction. Others are developmental — predictable stages in acquiring a given structure that tend to resolve with sufficient exposure over time. Others still are performance slips that the learner could self-correct under different conditions. Most AI feedback systems do not distinguish among these categories. They tend toward a uniform corrective response regardless of what kind of error they are responding to.

Conversational AI and Learner Anxiety

One finding that recurs with reasonable consistency across studies of chatbot and conversational AI use in ELT is a reduction in learner anxiety. Students who would not attempt speech in front of classmates or a teacher report greater willingness to communicate with an AI interlocutor (Pokrivcakova 457). That matters. Comprehensible output — the production dimension of Krashen's framework — requires learners to actually produce language, and anxiety is one of the most reliable inhibitors of production in classroom settings.

The finding arrives with a complication, though. The communicative environment that AI conversation tools create is, structurally, low-stakes. Real communication carries social weight: the possibility of misunderstanding, embarrassment, and genuine relational consequence. Learning to navigate those conditions is part of what language learning is preparing learners to do. Whether confidence developed in an anxiety-free AI context actually transfers to performance in higher-stakes real-world communication is an open question, and the evidence on transfer is mixed.

The Equity Problem

The most under-examined dimension of the AI-ELT literature concerns who actually benefits from these technologies. The strongest outcomes in adaptive learning research emerge from contexts with reliable internet infrastructure, reasonably current hardware, and learners who are already comfortable operating digital interfaces. In under-resourced educational settings — which describes a substantial proportion of schools across India and much of the developing world — those conditions cannot be taken for granted.

Bender and colleagues made a connected point about language biases built into large language models: these systems were trained predominantly on English-language text from internet sources, which skews heavily toward particular demographics, registers, and varieties of the language (Bender et al. 614). A learner whose local variety of English differs from the variety modelled by an AI system may receive feedback that is corrective in a direction that is linguistically and culturally inappropriate. This is not a theoretical concern. It is a direct consequence of how these systems were constructed and what data went into them.

The equity gap is not an argument against AI in ELT. It is an argument for honesty about who benefits and who does not, and about what would actually need to change in infrastructure, in teacher preparation, in how these systems are designed for access to effective AI learning tools to expand rather than simply reproduce existing educational inequalities in a more technologically sophisticated form.

Discussion

The picture that emerges from this review satisfies neither the committed advocates nor the committed critics of AI in language education. AI genuinely does some things well. Personalised vocabulary practice, adaptive grammar feedback, anxiety reduction for reluctant speakers, and self-paced engagement with reading and form there is reasonable evidence in each of those areas. For learners who lack adequate access to human instruction, a well-designed platform may offer support that would otherwise simply not exist.

But the things AI handles less well happen to include several of the things most central to language development. Extended discourse-level writing, genuine

meaning negotiation, contextually calibrated error feedback, and the relational texture of learning these resist automation in ways that current technology has not resolved, and may not resolve quickly.

There is a risk worth naming directly: technological adoption without pedagogical reasoning. A school that deploys an AI writing tool primarily to reduce teacher workload has made a decision about operational efficiency. That is not the same decision as one about learning. The efficiency gains may be real. The learning gains are not automatic, and conflating the two is a mistake with consequences for students.

The teacher's role in this picture deserves honest attention. Several researchers have framed AI as a mechanism that frees teachers from routine labour grading basic grammar exercises, logging vocabulary progress — so they can turn their attention to higher-order work. That framing is plausible in well-resourced, well-supported contexts. In settings where teachers are under-supported, under-trained, and expected to absorb new technology with minimal preparation time, the same tools can add complexity without adding value, and the teachers carry the burden of figuring out why.

Vygotsky's concept of the Zone of Proximal Development is relevant to this. Learning happens in the space between what a learner can do independently and what they can do with skilled guidance (Vygotsky 86). The quality of that guidance depends on the guide's capacity to read the learner — to adjust dynamically, to catch the moment of confusion before it solidifies into discouragement, to scaffold precisely what this learner needs at this moment. AI can approximate some of that process. It cannot replicate the diagnostic sensitivity of a teacher who has spent weeks learning how a particular student thinks and where she tends to get stuck.

The conclusion best supported by the evidence is that AI functions most effectively alongside a teacher, not as a replacement for one. That is not a diplomatic hedge designed to reassure anxious educators about their professional futures. It reflects a straightforward reading of where the technology adds value and where it does not. The teacher's irreplaceable contribution is not the transmission of information, which AI can manage adequately. It is the construction of the conditions relational, affective, pedagogically responsive — under which a human being becomes willing to take the kind of risks that genuine learning requires.

Conclusion

This paper set out to examine how AI is reshaping English language teaching. The answer it has arrived at is: unevenly, conditionally, and with consequences that depend substantially on implementation context and the quality of teacher preparation that accompanies adoption.

The grammar drill was never the ceiling of what language instruction could accomplish. It was a starting point — serviceable in limited ways, but insufficient for producing learners who could use a language to think, work, and connect with others. AI, when it functions well, can raise the floor of what basic instruction offers. It can extend individualised support to learners who would not otherwise receive it. It can reduce barriers for students too anxious to attempt speech in a social setting. It can provide data that, in the right hands, informs better teaching decisions.

What it cannot do is substitute for the relational work that language teaching fundamentally is the relationship between teacher and student that develops over months, the ability to notice a student's confusion before she can put words to it, the judgment to know when pressing forward is the right call and when patience is. Language is learned between people. It can be practised with machines. The difference between those two things is not trivial, and educational policy that loses sight of it will pay for that oversight in ways its students will feel before its architects do.

The question facing teachers, administrators, and policymakers is no longer whether to allow AI into language education. That question has already been answered by practice. The question now is which AI, deployed in which contexts, supported by what kind of teacher development, and with what honest acknowledgment of who tends to fall through the gaps when educational technologies arrive with more momentum than evidence. Answering those questions well requires something AI cannot supply: a clear account of what education is actually for, and the willingness to hold that account steady even when the technology is moving very fast.

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Intelligent Tutoring Systems

H.Mounika
Lecturer In English,
Girraj Government Degree College (A), Nizamabad.

Abstract:

Intelligent Tutoring Systems (ITS) are AI-powered computer programs that mimic one-on-one human teaching by giving students quick, personalized instruction and feedback. An ITS adjusts in real-time to a student unique knowledge, learning speed, and even emotional state, in contrast to traditional computer-aided education, which follows a strict, if-then linear course. Over the past few decades, the significance of intelligent tutoring systems has grown significantly. There has been an exponential growth in the number of end users that can be addressed as well as in technological development of environments, which makes it more sophisticated and easily implementable. An overview of intelligent tutoring systems is provided in this work. It then focuses on two kinds that were created to teach pupils in the territory sector. To support as many users as feasible, the system makes use of adaptive components. They facilitate the delivery of classes and act as the primary learning environment for students enrolled in distant learning programs. In order to create a more advanced intelligent tutoring system for e- learning, the systems are explained from the perspective of their functionalities and usually aspects that highlight their distinctions.

Keywords: Artificial Intelligence in Education (AIEd), Adaptive Learning / Adaptive Systems, Personalized Learning, E-Learning.

Introduction

The educational environment has changed dramatically during the last decade. The emphasis has changed away from conventional teaching techniques and toward incorporating technology into today's curriculum. Much focus is placed on developing 21st-century abilities via the use of new and creative technologies. Student participation is an essential component of learning. According to, traditional education is incapable of accommodating varied learning styles and degrees of preparation. This technique detects a significant number of students who are dealing with a single instructor who is unable to address each student's needs. As a consequence, some students may be unsatisfied and unable to achieve their academic objectives. Individualization is lost in conventional education in large groups of students because it is impossible for a teacher to construct a personalized study plan that suits the needs of each individual in the group. And there are fewer teaching styles in traditional schooling. Pictures, movies, and discussion boards are not always

accessible. This trait may impede learning and interfere with an effective study In recent decades, the application of artificial intelligence (AI) technology, particularly machine learning, has developed in educational institutions and people have become increasingly reliant on applications and software in a variety of fields, including learning, as information technology has advanced and computers have been more widely used. Artificial intelligence (AI) in education uses smart algorithms and data analytics to personalize learning, automate administrative tasks like grading, and provide 24/7 support through AI tutors. It helps tailor curriculum to individual student needs, enhancing engagement and accessibility while offering teachers tools for instructional design. E-learning, short for electronic learning, is the delivery of education and training through digital resources. It typically relies on the internet, though it can also involve other electronic media like CD-ROMs or local networks. Personalized learning is an educational approach tailoring instruction, pace, and content to individual student needs, interests, and skills. It shifts from teacher-centered to student-driven, utilizing learner profiles, adaptive technology, and flexible, project-based learning to increase engagement, ownership, and academic success.

Review Of Literature

Intelligent Tutoring Systems have been around since the 1970s. The first-ever reported Intelligent Tutor developed was **SCHOLAR (Carbonell 1970).** It was developed in 1970. With time and innovations in computer technology, Intelligent Tutoring Systems have become relatively easier to develop and deploy, and due to the advances in Artificial Intelligence, they have become more accurate at providing effective tutoring.

VanLehn et al. (2002) have developed Why2-Atlas, an Intelligent Tutoring System which interprets and makes analysis of students' explanations of physics principles, from the student submitted paragraph. The system transforms the words into a proof taking student's beliefs as assumptions. The system then directs the students to correct their essay, and the process is completed after a number of iterations.

In (Mitrovic 2003), the researcher has designed SQL-Tutor, a constraint-based tutor developed by the Intelligent Computer Tutoring Group (ICTG) at the University of Canterbury, New Zealand. It teaches students how to retrieve data from databases using SQL statements.

Researchers in (Eliot and Woolf 1994) have developed Cardiac Tutor, an Intelligent Tutoring System for tutoring cardiac support techniques to medical students. The system offers cardiac problems and the learner is tutored through simulation-based techniques. Verbal advice, feedback and clues are provided by the system to assist the learning.

Melis and Siekmann (2004) propose Active Math, a web-based environment for adaptive learning of Mathematics. This system aims at supporting lifelong learning. The intent is to improve the task of distance learning, for assisting in classroom teaching and for supporting individual learning.

In (Heffernan et al. 2006), the researcher has developed REALP, a system for enhancing the "reading comprehension" skill of the students by providing student-specific feedback and customized lexical practice, along with useful reading materials collected from the web. The proposed system attempts to model student's performance. The student is tested through exercises based around the vocabulary found in reading.

Keleş et al. (2009) describe ZOSMAT, a web-based Intelligent Tutoring System designed to address all the needs of a real classroom. It can be used for learning at both outside the classroom as well as to assist the inside-classroom teaching, with the guidance of a human teacher during a formal education process.

Bringula et al. (2016) have designed Teacher AICA, a mobile-based Intelligent Tutoring System for helping students in learning the laws of exponents. The research work states the development and deployment of an Intelligent Tutoring System for teaching the task of computing of exponents.

Al-Shawwa, Alshawwa, and Abu-Naser (2019) designed an Intelligent Tutoring System for teaching the beginner level coding in JAVA. This paper describes the design of a tutoring system specifically to mimic the effects of a one-to-one teaching experience in tutoring the introductory java programming to the students.

Research Methodology

The study is completely descriptive in nature and the data is collected from secondary sources. It was collected from a variety of websites, including surveys, data, and reports. It signifies that the data has already been collected and is being analyzed. Magazines, newspapers, books, journals, and other secondary sources were used. It could be either published or unpublished information.

Roles And Frame Work Of Aied

Roles and Frameworks of AIED

Artificial Intelligence in Education (AIEd) can play several roles in enhancing educational practices. These roles can be broadly categorized into four main areas: intelligent tutor, tutee, learning tool/partner, and policy- making advisor (Hwang et al., 2020). Each role contributes uniquely to educational innovation by utilizing AI technologies for different purposes.

Intelligent Tutor: AI systems acting as intelligent tutors (Anderson et al., 1995), (Graesser et. al., 2004) and (Heffernan & Heffernan, 2014) have been among the most

common applications of AI in education. These systems provide personalized and adaptive learning experiences, helping students learn more effectively. Examples include Cognitive Tutors and Auto Tutor, which have been shown to significantly improve learning outcomes in various fields (e.g., mathematics, sciences, and computer literacy).

2. Intelligent Tutee: While less common, AI systems can also serve as "tutees," enabling learners to take on the role of a teacher. Examples include Microsoft Tay (Wolf et al., 2017). This helps to develop higher- order thinking skills as students explain concepts to AI- based agents. The development of intelligent tutees is an emerging area, though its potential has been showcased in AI systems like chatbots that learn from human interactions.

3. Intelligent Learning Tool/Partner: AI tools can enhance learners' experiences by supporting data collection, analysis, and visualization. These tools help learners focus on critical thinking and problem- solving instead of routine tasks. Intelligent concept mapping tools and knowledge graphs are examples of AI- driven learning partners that actively guide and support learners through the
Learning process.

Policy- Making Advisor: AI is increasingly being used to assist policymakers by providing data- driven insights to inform educational policies. AI can analyze trends in educational data and offer recommendations to address macro and micro- level challenges in educational systems.

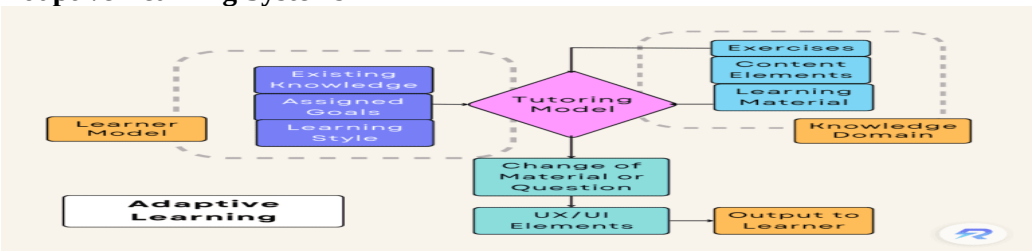
These four roles form a comprehensive framework for understanding how AI technologies can be leveraged in educational settings. The intelligent tutor role focuses on improving individual student outcomes by offering tailored learning experiences, which can be beneficial in scaling personalized education. The development of intelligent tutees brings a novel approach, where students are empowered to learn by teaching AI agents. AI learning tools and partners enable students to dive deeper into critical thinking by reducing cognitive load on mundane tasks, while AI- driven policy advisors enhance decision- making in educational governance, potentially leading to more impactful policies and reforms.

Comparison Of Different Frameworks Of Aied

Frame work	**Description**	**Benefits**	**Challenges**
Intelligent Tutor	AI systems that provide personalized and adaptive learning experiences, acting as virtual tutors for learners	Personalized learning. Real- time feedback Improved learning outcomes	Requires large, datasets for personalization May Lack, emotional Engagement.

Intelligent tutee	AI systems where learners take on the role of tutor, explaining concepts to the AI, which "learns" from these interactions.	Promotes higher- order thinking Encourages active learning	Few implementations Available Ethical concerns (AI imitating inappropriate behavior)
Intelligent Learning Tool/Partner.	AI systems used to analyze educational data and offer insights to policymakers to guide decisions.	Data-driven policy formulation Macro and micro- level insights into educational trends	Potential over-reliance on AI Data privacy concerns
Policy- Making Advisor	Provides immediate assistance and guidance, potentially leading to dependency on the tutor for Problem- solving.	Data- driven policy formulation Macro and micro- level insights into educational trends	Interpretability of AI recommendations Risk of biases in policy outcomes

Adaptive Learning Systems



Conclusion

The development of AI-driven tutoring systems represents a significant advancement in the ongoing evolution of educational technologies. By leveraging artificial intelligence, this study has demonstrated the potential for personalized,

adaptive, and data-driven learning methodologies that depart from conventional one-size-fits-all instructional frameworks. Central to this system's efficacy is its ability to dynamically tailor learning paths and deliver real-time, personalized feedback, thereby fostering learner autonomy and improving knowledge retention. The integration of natural language processing (NLP) enhances the system's responsiveness, facilitating intuitive interactions that contribute to a more engaging educational experience. Additionally, its accessible interface ensures usability across diverse learner demographics, reinforcing the system's applicability in varied educational settings. Although this research remains in its developmental phase, the findings underscore AI's transformative potential in education. The outcomes presented not only validate the system's capacity to support individualized learning but also establish a foundation for future innovations aimed at enhancing accessibility, fostering critical thinking, and equipping learners with adaptable problem-solving skills in an increasingly digital academic environment. This study contributes to the broader discourse on AI-powered educational tools, reinforcing the imperative of continued research and refinement to optimize intelligent tutoring systems. By advancing learner-centric methodologies, AI in education is poised to redefine pedagogical frameworks, driving inclusive and effective learning experiences on a global scale.

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Revolutionizing English Language Teaching through Artificial Intelligence: Challenges, Opportunities and Future Directions.

Sushma

Abstract

Artificial Intelligence (AI) has rapidly transformed multiple sectors, and education is among those experiencing the most profound shifts. English Language Teaching (ELT), in particular, is undergoing a fundamental change through the integration of AI tools and technologies. Personalized learning, automated assessment, intelligent tutoring systems, speech recognition, and data-driven pedagogical insights are reshaping how teachers teach and learners learn English. However, the transition is not without challenges—ethical issues, teacher preparedness, data privacy, digital divides, and overdependence on technology raise legitimate concerns. This paper explores the opportunities AI brings to ELT, identifies its core challenges, and proposes future directions to ensure that AI enhances, rather than disrupts, effective language education. Ultimately, AI should be leveraged strategically—supporting educators, empowering learners, and enriching pedagogical processes while maintaining human agency at the heart of language learning.

Introduction

English Language Teaching (ELT) has long been a cornerstone of global education due to English's role as a lingua franca in international communication, academic research, business, and digital interaction. Traditional ELT methods often prioritize teacher-centered instruction, standardized textbooks, and uniform assessment practices. While these approaches have proven effective historically, they struggle to meet the diverse needs of 21st-century learners who require flexibility, interactivity, personalization, and competency across multiple modalities of communication.

The advent of Artificial Intelligence (AI) in education promises to address many of these shortcomings. AI encompasses technologies that simulate human intelligence, including machine learning, natural language processing (NLP), speech recognition, and intelligent tutoring systems. In ELT, AI tools can provide individualized feedback, monitor learners' progress in real time, adapt content to learners' proficiency levels, and automate routine tasks—freeing teachers to focus on facilitation and creative instruction.

This paper examines how AI is revolutionizing ELT by exploring its benefits, challenges, and future potential. The discussion begins by outlining AI's core

applications in ELT and continues by analyzing the pedagogical opportunities and ethical challenges associated with its implementation. The final section presents recommendations for future research, teacher education, and policy formulation.

AI Applications in English Language Teaching

1. Adaptive and Personalized Learning Tools

One of the most transformative aspects of AI in ELT is adaptive learning—technological systems that customize instruction based on individual learner profiles. Traditional classrooms typically deliver uniform content suited to an average learner. In contrast, AI platforms use learner data to adjust tasks, pacing, difficulty levels, and feedback, creating dynamic and learner-specific pathways.

AI systems can analyze errors in grammar, vocabulary, and syntax to provide targeted remedial exercises. For instance, if a learner consistently misuses past tense forms, the system automatically offers tasks focused on verb tense accuracy. This level of personalization increases learner engagement and supports mastery learning—helping learners progress at their own pace rather than conforming to one standardized curriculum.

2. Intelligent Tutoring Systems

Intelligent Tutoring Systems (ITS) simulate one-on-one teaching environments by responding to learner inputs and guiding them through language tasks. ITS can present explanations, model language use, and offer corrective feedback in real time. They integrate NLP to interpret learner responses, making them particularly valuable for reading comprehension tasks and writing feedback.

For example, if a learner writes an essay, an ITS can identify structural issues, coherence problems, and lexical weaknesses, then suggest improvements. These systems empower learners to refine their skills independently—promoting self-directed learning and metacognition.

3. Speech Recognition and Pronunciation Practice

Pronunciation has traditionally been difficult to teach in large classrooms due to time constraints and limited opportunities for individual feedback. AI–based speech recognition technologies analyze learners' spoken input and compare it with target models. Learners receive real-time feedback on stress, intonation, rhythm, and articulation.

Such tools allow learners to practice pronunciation in a private, supportive environment—reducing anxiety and building confidence. AI's ability to provide instant corrective feedback addresses a significant gap in traditional ELT.

4. Automated Assessment and Feedback

Assessment is essential in ELT for measuring learner competence across the four fundamental skills—listening, speaking, reading, and writing. AI-driven assessment systems can evaluate large volumes of learner submissions with speed and consistency that human grading cannot match.

Automated essay scoring systems evaluate grammar, coherence, vocabulary range, and organization. Even complex performance tasks, such as speaking assessments, can be analyzed using AI algorithms that assess fluency, accuracy, and pronunciation quality. Immediate feedback enables learners to understand their errors and improve, rather than waiting days or weeks for teacher evaluation.

5. Chatbots and Conversational Agents

AI-powered chatbots replicate natural conversational practice. Learners can interact with virtual agents in dialogues that mimic real-world communication scenarios. These systems leverage NLP to understand learner input and generate appropriate responses, offering learners a risk-free space to rehearse language skills. Chatbots are particularly beneficial for working on fluency and pragmatic competence—allowing learners to practice greetings, requests, explanations, and informal conversation without fear of judgment.

6. Data Analytics and Learning Insights

AI platforms accumulate vast amounts of learner data, offering analytics that reveal patterns in learner performance. Teachers can use dashboards to identify common errors, learning gaps, and growth trajectories. These insights inform differentiated instruction and curriculum design.

By leveraging data, educators can move beyond intuition-based decisions to evidence-based practices—making teaching more strategic and targeted.

Opportunities Presented by AI in ELT

1. Learner Autonomy and Motivation

AI fosters learner autonomy by giving learners control over their learning processes. Instead of relying exclusively on teacher intervention, learners interact with AI systems that adapt content and provide continuous feedback. Autonomy increases motivation, as learners feel empowered to track their own progress and address their unique challenges.

2. Personalized and Inclusive Instruction

AI responds to diverse learner profiles. It supports learners with special needs through assistive technologies like text-to-speech, speech-to-text, and adaptive interfaces. Students with visual, auditory, or motor challenges can access instructional content and receive personalized support—making ELT more inclusive.

3. Time and Workload Optimization for Teachers

Routine tasks such as grading, attendance tracking, error analysis, and lesson reinforcement can consume significant teacher time. AI automates many of these processes, allowing teachers to allocate their time to creative lesson planning, individualized support, and facilitation of communicative activities.

4. Expanded Access and Flexibility

AI enables 24/7 access to learning resources—breaking temporal and spatial constraints. Learners in remote or underserved areas can engage with AI-enabled platforms using mobile devices, expanding educational access. Flexibility in when,

where, and how learners engage with content democratizes language learning opportunities.

5. Enhanced Feedback Quality

AI feedback is consistent, immediate, and data-informed. Instead of receiving generic comments, learners are given precise, actionable guidance. For example, AI can highlight specific errors in verb usage, connectives, or lexical choice, and offer remediation tasks—supporting deeper learning.

6. Scalability

AI systems scale effortlessly to serve large numbers of learners without proportional increases in resource allocation. This scalability is particularly relevant for large educational institutions or national programs aiming to improve English proficiency across broad populations.

Challenges in Implementing AI in ELT

Despite its promise, the integration of AI in ELT is not free of challenges. These range from ethical concerns to practical constraints in educational contexts.

1. Ethical Issues and Data Privacy

AI systems rely heavily on learner data—performance logs, voice recordings, writing samples, and interaction histories. Protecting personal data requires strict ethical guidelines and data governance frameworks. Misuse or unauthorized access to sensitive information could compromise learner privacy and safety.

Additionally, algorithmic bias remains a concern. If training datasets are unrepresentative, AI systems may exhibit biased feedback or misinterpret learner input—especially from nonnative speakers with diverse accents and dialects.

2. Digital Divide and Equity Concerns

Not all learners have equal access to digital infrastructure. Reliable internet, modern devices, and stable electricity are prerequisites for effective AI utilization. Learners in rural, economically disadvantaged areas may find themselves excluded—perpetuating existing educational inequities.

3. Teacher Preparedness and Professional Development

Teachers are central to successful AI integration, yet many lack training in digital literacy and AI-based pedagogy. Without professional development, teachers may struggle to interpret AI analytics, integrate tools effectively, or troubleshoot technology. Coaching teachers to use AI meaningfully is essential.

4. Overdependence on Technology

English Language Teaching is inherently social and human-centered. Overreliance on AI could diminish opportunities for human interaction, which is crucial for communicative competence, classroom dynamics, and cultural contextualization. Balancing AI use with human-led activities remains a key pedagogical consideration.

5. Cost and Infrastructure Constraints

High-quality AI platforms can be costly to implement and maintain. Educational institutions, especially in resource-limited contexts, may face financial

barriers. Moreover, ongoing updates, technical support, and infrastructure upgrades require sustainable investment.

6. Validity and Reliability of AI Assessment

While automated assessment offers speed and consistency, questions remain regarding its validity—especially for creative or context-dependent language tasks. Ensuring that AI evaluations align with human judgment and real-world communicative needs is paramount.

Future Directions and Strategic Recommendations

To harness AI's transformative potential in ELT responsibly and effectively, stakeholders must adopt forward-thinking strategies.

1. Development of Ethical AI Frameworks

Educational institutions and policymakers should establish clear guidelines for AI use in ELT. These frameworks must prioritize data privacy, transparency, fairness, and learner consent. Standards for ethical AI use should be aligned with global best practices and local cultural considerations.

2. Teacher Education and Continuous Professional Development

Teacher training programs must integrate AI literacy and pedagogical strategies. Pre-service teacher education should include modules on AI tools, data interpretation, adaptive learning design, and ethical considerations. Continuous professional development will ensure teachers remain updated amid rapid technological change.

3. Inclusive Technology Policies

National and institutional policies should focus on bridging the digital divide. Investment in infrastructure, affordable connectivity, and device access can democratize AI-enhanced ELT. Partnerships between governments, NGOs, and educational technology providers can mobilize resources for underserved communities.

4. Research on Pedagogical Impact

Ongoing research is required to evaluate AI's impact on language learning outcomes. Comparative studies exploring AI-supported instruction versus traditional methods, longitudinal research on learner progress, and investigations into socio-cultural implications will refine implementation strategies.

5. Hybrid Models of Teaching and Learning

Rather than replacing teachers, AI should complement them. Hybrid pedagogical models—where AI tools support human instruction—can preserve interpersonal interaction while benefiting from data-driven insights. Teachers remain facilitators, mentors, and cultural interpreters in the learning process.

6. Focus on Multimodal Competence

Future ELT models must emphasize multimodal competence—integrating speaking, listening, reading, writing, and digital literacies. AI tools can support multimodal tasks such as video communication practice, digital storytelling, and cross-cultural simulations, preparing learners for real-world language use.

Conclusion

Artificial Intelligence presents a paradigm shift in English Language Teaching—offering personalized learning pathways, automated assessment, intelligent tutoring, and enhanced learner engagement. These advancements have the potential to make English learning more effective, inclusive, and learner-centered. However, realizing this potential requires careful navigation of ethical challenges, teacher readiness, digital equity, and pedagogical balance.

AI should not be viewed as an autonomous replacement for human teaching but as an empowering tool that enhances teaching quality and expands learning opportunities. Strategic investment in teacher education, ethical governance, infrastructure, and empirical research will ensure that AI enriches ELT meaningfully. By embracing AI responsibly, educators and policymakers can revolutionize English language education—preparing learners not only to communicate but to thrive in a complex, interconnected

Panels in English Language Teaching: Examining Teachers' Perceived Effectiveness in Government Secondary Schools in Mancherial District

Dr.Singathi Upendar
Junior Lecturer in English
Government Junior College (C0-Education), Bellampally

Abstract:

This study investigates teachers' perceptions of the effectiveness of Interactive Flat Panels (IFPs) in English language teaching for Classes VI to X in government schools of Mancherial district, Telangana. As part of its digital education initiative, the Government of Telangana has introduced IFP devices in government and local body schools to enhance instructional delivery, particularly for students from rural and socio-economically marginalized backgrounds. The present study examines how English teachers perceive the usefulness, ease of use, pedagogical integration, and student impact of IFP-supported instruction.

The study employed a survey design using a structured 20-item Likert-scale questionnaire grounded in the Technology Acceptance Model (TAM) and the Technological Pedagogical Content Knowledge (TPACK) framework. Responses from 52 English teachers were analysed using descriptive statistics and reliability testing. The instrument demonstrated high internal consistency (Cronbach's α = 0.898). The findings reveal a strong positive perception of IFP integration (M = 4.04), with the highest rating for perceived student impact (M = 4.25). However, moderate concerns regarding training and infrastructural support were reported. The study concludes that while IFPs are pedagogically valued by teachers, sustained technical support and professional development are essential for optimal utilization in government school contexts.

Keywords: Interactive Flat Panels, English Language Teaching, TAM, TPACK, Government Schools, Educational Technology

Introduction:

The rapid digitalization of school education in India has significantly transformed classroom pedagogy, particularly in government school systems. In recent years, state governments have increasingly invested in smart classroom technologies to bridge educational disparities between urban and rural learners. One such initiative is the deployment of Interactive Flat Panels (IFPs), which are large,

touch-enabled digital displays designed to facilitate multimedia-supported, interactive teaching.

The Government of Telangana has implemented IFP technology across government and local body schools with the explicit objective of improving instructional effectiveness and student engagement, especially among learners from rural and marginalized socio-economic backgrounds. Within English Language Teaching (ELT), IFPs hold particular promise because language learning benefits substantially from audio-visual input, multimodal scaffolding, and interactive practice.

However, the success of any educational technology depends not merely on its availability but on teachers' acceptance, pedagogical integration, and sustained classroom use. In technology adoption research, teachers' perceptions are widely recognized as a critical determinant of effective implementation. Against this backdrop, the present study examines English teachers' perceptions of IFP integration in government schools of Mancherial district, Telangana.

Review of Literature

Educational technology research consistently emphasizes that digital tools enhance learning outcomes when meaningfully integrated into pedagogy. Mayer (2009) demonstrated that multimedia learning supports dual-channel processing, thereby improving comprehension and retention. In the ELT context, audio-visual input has been shown to support vocabulary acquisition, listening comprehension, and learner engagement.

The Technology Acceptance Model (Davis, 1989) posits that perceived usefulness and perceived ease of use significantly influence technology adoption. Numerous studies in school settings confirm that teachers' beliefs about usefulness strongly predict classroom integration. Similarly, the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006) underscores the importance of teachers' ability to meaningfully combine content knowledge, pedagogy, and technology.

In Indian government school contexts, however, research also highlights persistent barriers such as inadequate training, infrastructural constraints, and limited technical support. Therefore, examining teachers' perceptions provides important insight into both the potential and the practical challenges of IFP implementation.

Objectives of the Research

i. To examine teachers' perceived usefulness of IFP panels in English language teaching.
ii. To analyse teachers' perceptions of ease of use of IFP technology.

iii. To investigate the extent of pedagogical integration of IFP in English classrooms.
iv. To assess teachers' perceptions of IFP impact on student engagement and learning.
v. To identify challenges faced by teachers in using IFP panels.

1. Research Questions

1. How do English teachers perceive the usefulness of IFP panels?
2. How easy do teachers find IFP technology to operate?
3. To what extent are IFPs pedagogically integrated in ELT classrooms?
4. What is the perceived impact of IFP on students?
5. What barriers affect effective implementation?

2. Research Methodology

The study adopted a descriptive survey design focusing on perceived effectiveness rather than direct measurement of student achievement. The sample consisted of 52 English teachers teaching Classes VI to X in government schools of Mancherial district, Telangana. Participants were selected through purposive sampling based on their experience with IFP usage. Data were collected using a 20-item structured questionnaire organized into five dimensions:

I. Perceived Usefulness (6 items)
II. Perceived Ease of Use (4 items)
III. Pedagogical Integration (5 items)
IV. Perceived Student Impact (3 items)
V. Challenges (2 items)

Responses were recorded on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Internal consistency was assessed using Cronbach's alpha. The scale demonstrated good reliability ($\alpha = 0.898$)**,** indicating strong internal consistency among the items (Nunnally & Bernstein, 1994). (Sample size (N): 52 subjects; Number of items (k): 20 items). Data Analysis has been done by using descriptive statistics such as Mean. In a five-point Likert scale, the Mean levels are interpreted as follows:

1.00 – 1.80**:** Very Low
1.81 – 2.60: Low
2.61– 3.40: Moderate
3.41 – 4.20: High
4.21 – 5.00: Very High

3. Results and Dimension-wise Analysis:

The overall mean score for teachers' perception of IFP integration was M = 4.04, indicating a high level of agreement regarding the effectiveness of IFP in English language teaching. The ease-of-use dimension recorded a mean of **M = 3.93**, indicating generally positive but slightly lower confidence compared to usefulness. While most teachers reported that IFP operation is manageable, occasional technical interruptions and learning curves were noted.

S.No.	Dimension	Mean	Interpretation
01	Perceived Usefulness (Q1-Q 6)	4.17	High
02	Perceived Ease of Use (Q 7- Q 10)	3.93	High
03	Pedagogical Integration (Q 11-Q 15)	3.99	High
04.	Student Impact (Q16–Q18)	4.25	Very high
05	Challenges (Q19–Q20*)	3.71	Moderate to High

1. Teachers reported a high perception of usefulness (**M = 4.17**). Respondents agreed that IFP panels enhance clarity in explaining grammar, improve classroom interaction, and support vocabulary development through visual aids. This finding aligns with TAM predictions regarding perceived usefulness as a strong predictor of technology acceptance.
2. The ease-of-use dimension recorded a mean of **M = 3.93**, indicating generally positive but slightly lower confidence compared to usefulness. While most teachers reported that IFP operation is manageable, occasional technical interruptions and learning curves were noted.
3. The mean score for pedagogical integration was **M = 3.99**, suggesting that teachers are reasonably successful in combining English content with IFP technology. Teachers reported regular use of multimedia resources and improved explanation of complex texts. However, the score also indicates scope for further professional development in technology-enhanced pedagogy.
4. The dimension 'Perceived Student Impact' recorded the highest mean (**M = 4.25**), indicating very strong teacher belief that IFP usage improves student interest, participation, and retention. This is a significant finding because student engagement is a key goal of digital classroom initiatives.
5. The challenges dimension yielded a moderate-to-high mean (**M = 3.71**). Teachers acknowledged that lack of adequate training, connectivity issues, and limited technical support occasionally hinder effective utilization. This suggests that infrastructural and capacity-building measures remain important.

4. Findings and Discussion:

The findings of the study reveal a broadly positive perception among English teachers regarding the integration of Interactive Flat Panels in government school classrooms. The high overall mean (4.04) indicates strong acceptance of the

technology, consistent with the Technology Acceptance Model, which posits perceived usefulness as a major determinant of adoption.

The particularly high rating for student impact (4.25) is noteworthy. It suggests that teachers observe visible changes in learner engagement when IFPs are used. In ELT contexts, where multimodal input is crucial, the audio-visual affordances of IFPs appear to support comprehension and participation effectively.

At the same time, the slightly lower scores for ease of use and pedagogical integration indicate that technology adoption is still in a developmental phase. This aligns with TPACK literature, which emphasizes that meaningful technology integration requires not just access but pedagogical competence.

The challenges dimension further reinforces this point. Although teachers are positively disposed toward IFPs, infrastructural and training gaps persist. This finding echoes earlier studies in Indian government school settings, which highlight the need for sustained technical support and continuous professional development.

Importantly, the high reliability coefficient ($\alpha = 0.898$) strengthens confidence in the measurement instrument, suggesting that the findings are statistically robust.

5. Implications of the study:

The study has several pedagogical and policy implications:

i. Regular, hands-on training programmes are essential to enhance pedagogical integration.
ii. Schools require reliable internet connectivity and prompt maintenance support
iii. ELT-specific digital content aligned with the state syllabus would maximize IFP potential.
iv. Continuous academic monitoring can ensure sustained and meaningful use.

6. Limitations and Further Scope of the Study:

The study is subject to certain limitations:

- It relies on teachers' perceptions rather than direct measurement of student achievement.
- The sample is limited to one district in Telangana.
- Self-reported data may involve response bias.

Future research may incorporate classroom observations and student performance data to provide a more comprehensive evaluation.

Conclusion:

The study demonstrates that English teachers in government schools of Mancherial district hold a strongly positive perception of Interactive Flat Panel integration. Teachers particularly recognize the technology's potential to enhance student engagement and interactive learning. Nevertheless, the presence of moderate implementation challenges indicates that technology provision alone is insufficient.

Sustained teacher training, infrastructural strengthening, and pedagogically aligned digital resources are necessary to fully realize the transformative potential of IFP-enabled English language teaching in public school contexts.

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Using Artificial Intelligence in English Language Teaching: A Classroom-Based Perspective

Yamini Parashar Agarwal

Abstract

Artificial Intelligence (AI) is increasingly becoming a part of everyday life and is gradually influencing English Language Teaching (ELT). Inside classrooms where English is taught, changes shaped by smart systems already show in how lessons unfold. Student encounters shift under new tools that respond, adapt, learn alongside them. Teaching styles adjust not because of trends but from real shifts in interaction. What happens during class now includes unseen helpers guiding pacing, feedback, focus. These quiet additions alter flow without announcement. Learning steps forward while unnoticed code runs beneath

Based on my classroom experience - after years teaching kids from homes where English isn't spoken much, I saw something shift. They started speaking up, though earlier they barely said a word. Something changed once help from AI tools came into play. Nervousness dropped. Willingness grew. When chances to talk appeared, they took them without freezing like before

Even so, there are flaws worth noting. Some learners leaned too heavily on artificial intelligence when crafting papers, slowly dulling their own imaginative spark. This section weighs both strengths and drawbacks of integrating such tools into mastering a new tongueMaybe AI helps students when teachers keep a close eye on how it's used. Still, over time, kids might try less hard because of it

Introduction

Every now and then, you're using artificial intelligence without knowing. Hidden behind small things - like your phone guessing what comes next - it quietly helps. Instead of shouting its presence, it slips into routines, helping students find materials online. Education didn't resist. Over time, it simply started breathing the same air as AI.

It hits me most while teaching English now. Not just books guide learners anymore, nor do they hang on every word from instructors. Digital resources get picked up naturally - used freely, even when no one shows the way first. That shift stands out clearly.

Back then, while working at government college, plenty of learners had studied in Telugu-only classrooms. Speaking English felt shaky for them, so they held

back more often than not. Doubt crept in each time they tried to talk. Words didn't flow easily, especially during discussions.
Even if a person knew what to say, staying quiet felt safer. Worries about being wrong took over, freezing any chance to speak up.

Now here's how it went: I tried different ways, like giving writing exercises, encouraging longer answers, also throwing in some fun, easy games. Some kids started doing better, although many still struggled just the same.
Funny thing happened after a while. Students started using AI tools on their own, even though I never introduced them. Without any prompting, they picked them up and ran with them.

Literature Review

In recent years, the use of Artificial Intelligence in English Language Teaching has gained attention. Tools like ChatGPT, Grammarly, and Duolingo are increasingly being used by learners to improve their language skills. These tools provide instant feedback, help in correcting grammar, and expose learners to better sentence structures.

At the same time, some educators have raised concerns about the overuse of AI in learning. It is often argued that excessive dependence on AI tools may reduce students' ability to think independently and affect originality in their work.
Therefore, AI in language learning is seen as both a support system and a challenge, depending on how it is used in the classroom. In recent years, the use of Artificial

Methodology

This paper is based on my classroom experience while teaching students in a government college. Most of the students observed came from Telugu-medium backgrounds and faced difficulties in using English confidently.

The study follows a qualitative approach based on regular classroom observation, student participation, and interaction over time. No formal surveys or questionnaires were used. Instead, the analysis is based on repeated patterns noticed during teaching and learning activities.

Changing Classroom Environment

Nowhere is its presence felt more than in classrooms, where routines once relied on chalkboards and textbooks. Today, screens respond to voice, software adjusts lessons based on student pace, while feedback arrives instantly. Some teachers guide less, stepping back as systems suggest personalised tasks. Others blend old methods with tools that track progress quietly behind the scenes. Even seating arrangements shift under data-driven decisions about group dynamics. What used to be static now breathes with constant updates, pulled from patterns no human could spot alone

These days, change jumps out at anyone watching schools. A short while back, learners turned to instructors for nearly every answer. Today, curiosity leads them straight to artificial intelligence helpers instead.
Energy feels different now. Though learners take charge of their tasks, reliance on digital tools grows stronger.

One day in class, it hit me - students weren't just sitting back. They dug into topics themselves, sharing what they uncovered before I could respond. My first reaction? Relief. Here was effort without prompting
Yet up close, the freedom seemed fake sometimes. Many simply repeated whatever came out of machines - no thought given to meaning at all.
True, classrooms are shifting. Yet things don't unfold quite like expected.

Students behaviour and learning patterns

Faster replies? That's what many students chase these days. Since AI showed up, fewer sit quietly puzzling over problems. Quick results pull harder than deep thought once did. Slower minds feel out of place now.

These days, instead of chatting in clusters, heads bent together like old times, folks head straight to machines that spit out replies. Back then, thoughts got shaped through murmurs, pauses, shared glances - now fingers tap screens before voices even rise.
This happens because they skip wrestling with thoughts on their own. Rather than forming original sentences, they rest on answers the AI has given before.

It hits me how a few learners begin doubting their words. Suddenly, the idea takes root - anything an AI produces must outweigh their own effort.
Funny thing is, it kind of bothers me. Picking up a new language? It demands time plus real work - no way around that - even if machines try to take over. The grind stays.

AI Brings Benefits

For sure, picking up languages with AI has its bright spots.
Fear fades when practice happens through AI. Shy students find their footing more easily this way.
Another benefit? Better visibility. Learners start noticing how sentences can be built more clearly, along with stronger word choices.
Now here's the third part: it helps learners teach themselves. Moving forward, progress happens step by step based on personal timing instead of waiting for classroom guidance.
One day, during class, quiet kids began trying - just tiny steps, yet huge all the same. Their first moves mattered most.

Negative Effects of Artificial Intelligence

Few downsides show up just as plainly. Still, they're hard to ignore when things unfold.

What stands out most? Too much trust in machines. Pupils begin turning to artificial intelligence each time a task shows up.

Here's a twist - original thinking often goes missing. Some learners hand in work that's lifted straight from others, particularly when tackling homework.

A strange thing popped up during my observation - learners often repeat phrases without really getting them. If pressed to clarify, things fall apart quickly.

Filling space without substance shows up clear when words stretch beyond understanding. What's said begins to float away from what's true inside.

Teachers and AI: Changing Roles

Back then, lessons came straight from the instructor. These days, getting answers happens whenever a student wants.

Now teaching isn't simply about sharing facts - instead, it shapes how learners explore ideas. Guidance matters more than ever, shifting focus from delivery to direction.

Thinking comes easier when teachers guide learners through questions instead of answers. A moment to pause, to wonder - this builds analysis without force. Reflection grows where space exists, not pressure. Helping means stepping beside, not standing ahead.

Folks count on humans for comfort - something machines just can't offer.

A spark showed up when I gave just a little praise. They started jumping into lessons like it mattered.

Now it's clear - guiding doesn't mean leading every step. Teachers matter more than ever, though their job looks unlike before. What changes is how they show up, not whether they're needed.

Findings

Based on classroom observations, a few clear patterns emerged. Students showed increased confidence when using AI tools, especially while attempting to speak or write in English.

At the same time, many students relied heavily on AI for completing assignments. This reduced their effort to think independently and affected the originality of their responses.

Another important observation was that students often used grammatically correct sentences generated by AI but were unable to fully understand or explain them.

Discussion

Looking closer at my students, I noticed something: AI in class isn't only a tool. Instead, it shifts how they see learning. Slowly, almost quietly, their mindset begins to shift. Real change? Yes, it's happening.

Back then, kids faced an assignment and still gave it a go by themselves. Not feeling sure? They'd put words on paper anyway. Mistakes popped up, true, yet each

one fed their growth. Their minds worked through problems, step by step, getting better without fanfare. Effort led to progress, quiet and unpolished, but real.

Right now, things seem just a bit changed. A lot of students never really begin to consider what they need to do. Instead of working it out, their instinct pulls them toward searching for a ready reply. Because of smart software, that search takes almost no time at all. In moments, a full response appears right in front of them.
Sure, help arrives fast now. Kids find right answers easily, along with clearer ways to say things. Yet beneath that surface, a quiet loss grows. Little by little, the act of working through thoughts fades away.

The blank page often felt difficult to approach independently. Someone else's words first - that felt safer. Trust had quietly left the room, replaced by clicks.
This shift affects students' confidence in an unusual way. At first glance, their output seems improved. Yet beneath that, doubt creeps into how they see their abilities.
The goal isn't perfection, it's connection through words.

One habit stands out: learners often act without thinking. To them, turning to AI feels routine. Speed matters. Simplicity counts. Getting tasks done becomes the result. Quiet reliance builds over time.
Stopping to wonder if real learning happens? Not really their concern. Getting through the work takes priority over getting what it means. Finished beats understood every time.

Focusing less on understanding, more on getting things done - that's what people are noticing now. What was once about gaining knowledge has turned into just finishing tasks. Paying closer attention to this change might be necessary. The move away from deep learning doesn't go unnoticed anymore.

One day, a quiet group sat in the back row, silent during discussions. Then came moments - brief ones - when a hand rose slightly. A voice broke through, shaky at first, forming words that stumbled but carried weight. Mistakes didn't matter; effort lit up the room more than fluency ever could. Just showing up like that changed everything without saying so.
Facing this situation, a teacher might feel stuck. Hard it is to judge student work without doubt creeping in. Original ideas blur when machine-made text mixes in.

When kids copy work, something shifts. The point of homework drifts away. Practice builds skill - yet mimicry replaces effort. Improvement slows when answers come without struggle. A quiet gap grows between doing and faking.

That moment got me wondering - maybe education ought to shift its approach. A fresh outcome won't come from repeating old ways. When learners work with AI, instruction must shift - quietly, steadily, like roots adjusting beneath soil.

Working through tasks during lessons can help. Because thinking happens easier when minds stay busy together.

Out loud practice, talking together in small crowds, then showing ideas - these stick because machines can't mimic them fast. Hard to fake what humans do naturally when sharing thoughts face to face.

A shift in task design might help. Questions aimed at individual experience work better than broad ones.

Maybe classrooms could change if teachers brought up AI more often. Rather than acting like it does not exist, talking through what it means might help.

For learners, seeing both sides matters. This tech helps - yet it won't do the work instead of them.Truth is, using ChatGPT while studying for my PGDTE made things clearer. It shaped scattered thoughts into something solid. One thing led to another, understanding grew. Not everything clicked at once, yet progress happened slowly.

Yet overuse made my thoughts shallow, I realised one day staring out the window. Still, it crept up slowly - how reliance dulled the mind. Sometimes a tool meant to help becomes a crutch without warning. Only after stepping back did clarity return like morning light through dusty glass.

Only after seeing it myself did I understand how much weight fairness holds.

Motivation plays a big role too. When students get support, they try harder. Knowing their work has purpose helps them keep going.

What happens when a machine tries to care? Machines miss the quiet moments - when silence speaks louder than words. A student's weight stays unseen by code. Feelings slip through circuits like sand. Understanding requires more than data. Empathy grows where logic ends.

Here, one key figure stands out - the teacher. A little praise now then goes far in lifting a student's drive. Emotional support is very important in learning.

Talking in class matters too. One student says something, others listen, then build on it. Mistakes happen, yet those slip-ups lead to better understanding. Ideas bounce around, slowly shaping clearer thoughts.

A machine might copy tasks, yet understanding stays human. Only people grasp why things matter deep down.

Fresh approaches matter now more than ever. Because classrooms change, ways of teaching must shift too - tools evolve, so understanding them becomes key.

Maybe it's clear now - AI shifts how students pick up knowledge, yet nudges educators to reshape their methods too. Young learners must understand ways to work with artificial intelligence in a careful manner

Through the steps, teachers should walk beside students. A steady hand matters when paths feel unclear. Each choice gains meaning when shared. Learning grows where support shows up daily.

It is at that point AI might fit into learning without causing trouble.

Limits and Next Steps for AI in Teaching Languages

Looking back at teaching moments while putting thoughts into words, it struck me - some gaps show up in what was seen, in what got shared. Mentioning them matters, since clarity grows when we admit the subject stretches beyond a single view, keeps shifting underfoot.

Truth is, most of what I've seen comes straight from teaching in real classrooms. Working alongside students - many raised on Telugu as their main school language - in a government college shaped much of my view. These learners carry routines, life experiences, and hurdles unlike those found in private colleges or city-based schools. Because of that, my findings might shift when placed into different spaces.

Truth is, I skipped standard research gear - no surveys, no interviews, nothing locked into forms. What shaped my view was just being there, day after day, watching how things unfolded in class. This way catches real moments, though it might miss fine layers a strict study could find.

Here's another thing - students haven't quite settled into using AI just yet. Right now, how they act around it keeps shifting. One moment they lean in, the next they hang back, then ignore it completely. That means the way they learn alongside it stays fluid. Today's habits might look nothing like what happens down the road.

Teachers find themselves in much the same spot. Figuring out AI feels new to plenty of them, along with what it means for students. A few welcome the tools, yet hesitation lingers among others. Classroom use shifts because of these mixed reactions.

Thinking ahead matters when it comes to testing. Should learners keep turning to artificial intelligence for homework, old ways of grading might fall short. Different approaches could step in - ones that highlight real-time classwork, verbal ability, even how someone shares their thoughts.

Getting teachers ready matters just as much. When shifts happen, they must adapt. Knowing what AI actually does helps them use it well in class. If that knowledge is missing, helping students navigate it gets tricky.

Even while moving fast, ethics demand attention. Originality, honesty, fairness - these matter more once machines join the mix. Learning means thinking for yourself, not borrowing answers from a tool.

A different angle worth noticing - balance matters. Down the road, the real question won't hinge on adopting AI, but on measuring its place. Relying heavily might dull self-reliant thought; leaning too lightly could mean passing up help that's right there. The middle holds more than either edge. Finding that middle ground matters most.

Truth is, leaning on AI too much might do more harm than good. Still, when used right, it gives learners a hand with drills and spotting mistakes in their writing. Effort has to come from the student, though. Relying only on machines takes away the struggle needed to grow. Learning stays stronger when thinking comes from within.

One day, schoolrooms might seem nothing like now. Still, gadgets will matter more each year. Yet deep down, studying won't change much at all. Help from teachers, drive to keep going, plus doing things again - those stay.

Funny thing is, while machines reshape classrooms, teachers keep holding their ground. What sticks around? Real talk between people. That part won't fade.

Still, even with all its promise, artificial intelligence opens tough questions. A look at what happens in real classrooms shows just one piece of the puzzle. Much remains unclear, yet every new study adds clarity bit by bit.

Conclusion

AI is definitely changing English Language Teaching. Change opens fresh paths though it introduces hurdles too.

Some learners might gain support from it, yet reliance could grow over time. Dependence may form even when benefits exist at first.

Balance becomes the point then. The real trick? Keeping things steady without tipping too far either way.

A helper, not a substitute - that's where AI fits in education. Learning still comes first, guided by people, with technology playing backup.

Change hits educators just as hard as it does learners. While one group adjusts, so does the other. Each finds new footing differently. Still, movement is constant on both sides.Fine results come when AI gets handled with care during language study. Yet left unchecked, learning often loses its depth.

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The impact of Artificial Intelligence in English language role in education system, opportunities and threats

Soundarya Udgiri
Lecturer in computer science in Girraj govt college

Abstract

Artificial Intelligence (AI) is transforming English Language Teaching (ELT) by providing personalized, adaptive, and interactive learning experiences, such as catboats and automated feedback for writing and speaking. Key opportunities include enhanced learner autonomy, customized, 24/7 learning support, and reduced administrative burdens for educators

The rapid advancement of Artificial Intelligence (AI) is significantly transforming English Language Teaching (ELT) and the broader educational landscape. AI technologies offer personalized, adaptive, and interactive learning experiences—such as catboats and automated feedback—that enhance learner autonomy and provide continuous support. This seminar will explore the opportunities AI presents in education, including personalized learning, improved assessment accuracy, data-driven decision-making, and enhanced educational governance. Concurrently, it will address critical challenges such as ethical issues, data privacy, algorithmic bias, teacher readiness, infrastructural disparities, and policy gaps. Emphasizing that AI is a socio-technical phenomenon rather than a neutral tool, the discussion will highlight the need for thoughtful pedagogical, ethical, and policy frameworks. With responsible governance, AI holds the potential to foster inclusive, adaptive, and human-centered educational systems.

Keywords: Artificial Intelligence (AI), English Language Teaching (ELT), Adaptive Learning Catboats (or Chatbots, assuming a typo in the original), Human-centered Educational Systems.

Introduction

AI is quickly changing the educational landscape, particularly in the field of English language teaching (ELT) [Kovalenko & Baranivska, 2024]. We're witnessing amazing opportunities to transform how students learn and teachers instruct thanks to advances in AI like complex models of language and adaptive educational platforms [Rane et al., 2023]. Of course, there are challenges associated with this technological boom. Potential problems like unequal access, data-related ethical issues, and the demand for educators to modify their teaching strategies must be given into account. [Pedro et al., 2019].

Background of Artificial Intelligence in Education

Artificial Intelligence functions as a computer program capable of thinking and learning similarly to a human. In educational settings, it assists teachers and students with tasks such as acquiring new knowledge, problem-solving, and decision-making. There are specialized AI tools designed to facilitate learning, including systems that adapt to a student's performance, virtual tutors offering personalized assistance, and programs that comprehend students' spoken and written communication. These tools also enable teachers to monitor student progress and identify areas needing improvement. The integration of AI in education started with the creation of computer-assisted instruction in the mid-20th century, initially focusing on delivering programmed learning materials to students. As machine learning, big data, and computational power have advanced, more sophisticated AI applications have emerged, capable of analyzing student behavior, recognizing learning patterns, and offering personalized educational experiences. Today, AI-powered educational platforms provide real-time feedback, automated grading, speech recognition, and language translation services. These technologies are especially beneficial in language education, where learners need ongoing practice and feedback to enhance their language skills.

Significance of English Language Education

English has become the dominant language of international communication, science, technology, and global business. It is widely used in academic publications, international organizations, and digital platforms. Consequently, proficiency in English is often considered a critical skill for individuals seeking educational and professional opportunities in the globalized world. English language education plays a vital role in equipping learners with the necessary communication skills required for academic success and career advancement. In many non-native English-speaking countries, English is taught as a second or foreign language in schools and universities. However, traditional teaching methods sometimes face limitations such as large class sizes, limited teacher availability, and insufficient personalized instruction. The integration of AI technologies into English language education offers new possibilities for addressing these challenges by providing individualized learning experiences, interactive tools, and instant feedback mechanisms.

Research Questions and Objectives

This study aims to explore the role of artificial intelligence in English language education by addressing the following research questions:

1. What opportunities does artificial intelligence provide for improving English language education?
2. What potential threats or challenges arise from the integration of AI technologies in language learning environments?
3. How can educators and policymakers effectively balance the benefits and risks associated with AI integration?

The primary objectives of this research include:

- Examining the evolution and applications of AI in educational contexts.
- Identifying the benefits of AI in English language teaching and learning.
- Analyzing potential risks associated with AI adoption in education.
- Providing recommendations for effective and ethical AI integration in English language pedagogy.

Literature Review

Evolution of AI in Educational Contexts

The development of AI in education has progressed through several stages. Early educational technologies focused on computer-assisted instruction, which allowed learners to interact with pre-programmed instructional materials. With the emergence of machine learning and data analytics, AI systems have become more sophisticated and capable of adapting to individual learners' needs.

Modern AI-based educational platforms include intelligent tutoring systems, chat bots, and adaptive learning software. These tools analyze learner performance and provide customized learning pathways. Researchers have emphasized the potential of AI to enhance learning efficiency by delivering tailored educational experiences.

The Role of English Language in Global Education

English has become the primary language of global academic communication and knowledge exchange. Many universities around the world offer English-medium instruction to attract international students and facilitate academic collaboration.
English language proficiency is also essential for accessing online educational resources, participating in global professional networks, and engaging with digital technologies. Consequently, improving English language education has become a key priority in many educational systems.

Previous Studies on AI Integration in Language Learning

Several studies have examined the impact of AI technologies on language learning. Research indicates that AI-powered language learning applications can improve vocabulary acquisition, pronunciation accuracy, and grammar proficiency. Tools that incorporate natural language processing enable learners to practice speaking and writing skills while receiving instant feedback.

However, scholars have also highlighted concerns regarding the over-reliance on technology in language learning environments. Some studies suggest that excessive dependence on AI tools may reduce opportunities for meaningful human interaction, which is an essential component of language acquisition.

Conceptual Framework

Defining Artificial Intelligence in Education

Artificial Intelligence in education refers to the use of intelligent technologies designed to enhance teaching and learning processes. These technologies can analyze

student data, adapt instructional materials, and support teachers in managing educational tasks.

Theoretical Underpinnings of Language Acquisition

The integration of AI in language education can be understood through several language acquisition theories. For example, behaviorist theory emphasizes the role of reinforcement and feedback in learning, which aligns with AI-driven automated feedback systems. Constructivist theory highlights the importance of active learning and interaction, which can be facilitated through interactive AI learning environments.

Framework for Analyzing Opportunities and Threats

This study uses a conceptual framework that categorizes the impact of AI in English language education into two major dimensions:

1. Opportunities offered by AI technologies.
2. Threats or risks associated with their implementation.

Opportunities of AI in English Language Education

Personalized Learning Pathways

One of the most significant advantages of AI in language education is the ability to create personalized learning experiences. AI systems can analyze learners' strengths, weaknesses, and learning preferences to provide customized instructional content. This approach allows students to progress at their own pace and focus on areas that require improvement.

Automated Assessment and Feedback

AI-powered tools can automatically evaluate student assignments, quizzes, and language exercises. These systems provide immediate feedback, enabling learners to identify and correct their mistakes quickly. Automated assessment also reduces the workload of teachers, allowing them to focus on more complex pedagogical tasks.

Enhanced Learning Resources and Tools

AI technologies offer a wide range of interactive learning resources, including speech recognition software, virtual tutors, and language learning applications. These tools make learning more engaging and accessible by incorporating multimedia content, gamification, and real-time communication features.

Accessibility and Inclusivity

AI has the potential to improve accessibility in education by providing language translation, speech-to-text, and text-to-speech functionalities. These features can support learners with disabilities and those who have limited access to traditional educational resources.

Threats of AI in English Language Education

Ethical Considerations and Bias

AI systems rely on large datasets to function effectively. If these datasets contain biases, the resulting algorithms may produce biased outcomes. In language

education, this could lead to unfair evaluations or culturally insensitive learning materials.

Data Privacy and Security

The use of AI technologies often involves the collection and analysis of large amounts of student data. Ensuring the privacy and security of this information is a major concern. Educational institutions must implement strict data protection measures to safeguard student information.

Impact on Human Interaction and Teacher Roles

Language learning is inherently social and interactive. Excessive reliance on AI tools may reduce opportunities for human interaction between teachers and students. Additionally, some educators fear that AI technologies could diminish the role of teachers in the classroom.

Potential for Digital Divide

Access to AI-powered educational tools may not be equally distributed across all regions and socio-economic groups. Students in under-resourced communities may face challenges in accessing advanced technologies, thereby widening the digital divide.

Methodology

Research Design

This study employs a qualitative research design based on a comprehensive review of existing literature. The research focuses on analyzing scholarly articles, policy reports, and case studies related to AI in education and language learning.

Data Collection Methods

Data for this study were collected from academic journals, conference proceedings, books, and reputable online databases related to educational technology and language education.

Data Analysis Techniques

The collected data were analyzed using thematic analysis. This method involves identifying key themes and patterns related to the opportunities and threats of AI integration in English language education.

Ethical Considerations of the Study

The study adheres to ethical research practices by properly acknowledging sources and avoiding plagiarism. Since the research relies on secondary data, no direct involvement of human participants was required.

Discussion

Synthesizing Opportunities and Threats

the searching suggest that ai technologies have significant developing capacity golbal language education through personalized learning automated feedback and improved accessibility however these benefits must be balanced against concerns related to data privacy algorithmic bias and reduced human interaction

implications for global language pedagogy

educators should adopt a balanced approach when integrating ai into language classrooms ai tools should be cailms to doing rather than replacement old methodology teaching methods for teachers can leverage ai technologies to support individualized instruction while maintaining meaningful people engagement in the assesment process

Policy Recommendations for AI Integration

institutional policymakers should develop clear guidelines for the ethical use of mechine depedences in education investments in digital infrastructure and teacher training are also essential to ensure effective and equitable ai tools to engage in language education

Conclusion

Summary of Findings

This study explored the opportunities and threats associated with the use of artificial intelligence in English language education. The analysis indicates that AI technologies offer numerous benefits, including personalized learning, automated assessment, and increased accessibility. At the same time, concerns regarding ethical issues, data privacy, and the potential digital divide must be addressed.

Limitations of the Study

The study is limited by its reliance on secondary data and literature-based analysis. Future research could incorporate empirical data through surveys, interviews, or classroom experiments.

Future Research Directions

Future studies should investigate the long-term impact of AI technologies on language learning outcomes and teacher roles. Additionally, researchers should explore strategies for ensuring ethical and inclusive AI implementation in educational environments. The study aimed to systematically review recent composition in the integrating automatic ai into the english language teaching and education system to identify the ai tools used evaluate their instructional functions and examine in the surrounding their implementation in a language institutional context a human-centered integration approach is essential to ensure ai is a meaningful tool to use in all education systems and not a replacement for educators this requirement will be improved by using ai tools to utilize ai in the education system in the ai era if we use it in a productive manner it will be good for the entire education system

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Smart Learning: AI and the Future of English with Regional Languages in Viksit Bharat

Anitha Pawar
GDC, Art's and Commerce,
Adilabad. Research Scholar, TU, Dichpally, Nizamabad

Abstract

India is moving towards *Viksit Bharat 2047*, a vision of a developed, inclusive, and technologically advanced nation. Education is at the heart of this transformation. With the rise of Artificial Intelligence (AI), learning is becoming smarter, more personalized, and more accessible. At the same time, India's strength lies in its linguistic diversity. The future of education will not be English versus regional languages, but English along with regional languages supported by AI.

English is a global language of communication, science, business, and technology. AI is transforming how students learn English. India has hundreds of regional languages like Telugu, Hindi, Marathi, Tamil, Kannada, and more. AI helps connect mother tongue learning with English learning. AI can instantly translate English lessons into regional languages and regional language content into English. This helps first-generation learners understand complex topics easily.

AI-supported language learning is important for building a developed India. Through inclusive education, students from rural and regional backgrounds get equal learning opportunities. English skills combined with digital knowledge open doors to jobs in IT, business, and global sectors. Higher education students can access global knowledge while staying connected to their culture and language. Digital empowerment helps learners become confident in both communication and technology.

However, to achieve this vision, some challenges must be addressed, such as lack of internet and digital devices in rural areas, need for teacher training in AI tools, ensuring AI supports teachers rather than replaces them, and protecting students' data and privacy.

Keywords: Viksit Bharat 2047, transformation, Artificial Intelligence, regional languages, challenges, equal learning opportunities, higher education.

Introduction

India aims to become a developed country by 2047, known as *Viksit Bharat*. Education plays a vital role in achieving this goal. With the enhancement of Artificial Intelligence, learning is becoming smarter, more personalized, and more accessible to students from all backgrounds. India is moving towards *Viksit Bharat 2047*, a vision of a developed, inclusive, and technologically advanced nation. Education is at the heart of this transformation. With the rise of Artificial Intelligence (AI), learning is becoming smarter, more personalized, and more accessible. At the same time, India's strength lies in its linguistic diversity. The future of education will not be English versus regional languages, but English along with regional languages supported by AI.

Smart learning leverages AI tools to analyze a student's strengths, weaknesses, opportunities, and threats (SWOT). It delivers customized exercises, instant feedback, and engaging interactive sessions. This approach proves particularly valuable for mastering English, essential for advanced studies, research, and international careers, by enhancing grammar, pronunciation, vocabulary, and writing through immediate corrections and targeted practice. Such integration is very important for inclusive education. Rural and non-English background students get equal opportunities to learn and compete globally. AI-supported learning also improves digital literacy, which is essential in today's technology-driven world.

However, there are challenges such as lack of internet access, limited digital devices, teacher training needs, and data privacy concerns. AI should support teachers, not replace them. Teachers remain essential for guidance, motivation, and value-based education. AI is not replacing languages but connecting English and regional languages to create a smarter, inclusive, and multilingual education system. This will help build skilled and confident citizens and contribute to the vision of *Viksit Bharat*.

In the context of *Viksit Bharat*, proficiency in English has become essential for higher education, employment, and global communication. However, a large number of students in India, especially from rural and regional-language backgrounds, face significant challenges in learning English due to limited exposure, lack of confidence, and traditional teacher-centred teaching methods. This gap often results in unequal learning outcomes and restricts students' academic and professional growth.

With the rapid advancement of Artificial Intelligence (AI), smart learning tools such as language apps, AI-powered translators, speech recognition systems, and personalized learning platforms have emerged as potential solutions to these

challenges. Yet, the effective integration of AI in English language learning, particularly in harmony with regional languages, remains limited and under-explored in many educational institutions.

Therefore, the problem addressed in this study is to examine how AI-based smart learning tools can support the teaching and learning of English while respecting and leveraging regional languages. The study seeks to understand whether AI can bridge the language gap, improve learners' proficiency, and contribute to inclusive and equitable education aligned with the vision of *Viksit Bharat*.

Objectives of the Study

1. To examine the role of Artificial Intelligence (AI) in enhancing English language learning through smart learning platforms.
2. To understand how AI-based tools can support English learning among students from regional language backgrounds.
3. To analyze the effectiveness of smart learning technologies in improving students' listening, speaking, reading, and writing (LSRW) skills.
4. To study students' perceptions and attitudes towards the use of AI-powered learning tools in English language education.
5. To explore the integration of regional languages with English through AI for better comprehension and inclusive learning.
6. To identify the challenges faced by students and teachers in adopting AI-enabled smart learning methods.
7. To assess the contribution of AI-driven English learning in achieving the educational goals of *Viksit Bharat*.

Significance of the Study

The significance of this study lies in its focus on the growing importance of Artificial Intelligence (AI) in transforming English language education in India. In a multilingual country like India, where students primarily learn through regional languages, the integration of AI with smart learning methods can play a vital role in making English learning more accessible, inclusive, and effective.

This study is significant as it highlights how AI-based tools can bridge the gap between English and regional languages, helping students overcome language barriers, improve comprehension, and build confidence in communication skills. By emphasizing learner-centred and personalized learning, the study contributes to understanding innovative teaching practices beyond traditional classroom methods.

The findings of the study may benefit students, teachers, and educational institutions by providing insights into the effective use of AI-powered applications for developing

LSRW skills. It also supports educators in adopting technology-driven strategies that cater to diverse learning needs.

Furthermore, this study aligns with the national vision of *Viksit Bharat*, as it underscores the role of smart learning in promoting digital literacy, skill development, and equal educational opportunities. The study serves as a valuable reference for future research and policy decisions related to AI integration in English language education in India.

There is a significant positive impact of AI-based smart learning tools on students' English language proficiency. Students from regional language backgrounds show better comprehension of English when AI-supported learning methods are used. The use of Artificial Intelligence in smart learning significantly improves students' listening, speaking, reading, and writing (LSRW) skills. Students demonstrate a positive attitude towards learning English through AI-enabled platforms. Integration of regional languages with English using AI tools reduces language anxiety and increases learners' confidence. AI-supported English learning contributes to inclusive and equitable education, in line with the vision of *Viksit Bharat*.

The present study adopts a descriptive research design to examine the role of Artificial Intelligence (AI) in smart learning and its impact on English language learning among students from regional language backgrounds. The study focuses on understanding learners' experiences, perceptions, and improvement in English proficiency through AI-enabled tools.

The sample for the study comprises undergraduate students from a government degree college. A total of 50 students were selected using the simple random sampling method. The participants belong to diverse academic streams and predominantly come from regional language backgrounds, making them appropriate for the objectives of the study.

The following tools were used for data collection:

1. **Questionnaire** – A structured questionnaire was designed to collect data on students' awareness, usage, and attitudes towards AI-based smart learning tools in learning English.
2. **AI-based Learning Tools** – Language learning applications, AI translators, grammar checkers, and speech recognition tools were used to observe their effectiveness in developing LSRW skills.
3. **Observation** – Informal observation was employed to assess students' engagement and confidence while using AI-supported learning methods.

Data were collected through primary and secondary sources. Primary data were collected through questionnaires and observation of students' interaction with AI-based smart learning tools. Secondary data were collected from books, journals, research articles, websites, and educational reports related to AI, smart learning, English language teaching, and regional languages. The collected data were systematically analyzed to draw conclusions about the effectiveness of AI-enabled smart learning in enhancing English proficiency and supporting the goals of *Viksit Bharat*.

Review of Literature

Several studies have emphasized the growing role of Artificial Intelligence (AI) in the field of education, particularly in language learning. Researchers have highlighted that AI-based tools such as intelligent tutoring systems, language learning applications, and speech recognition software support personalized and self-paced learning, thereby improving learners' engagement and performance.

Studies on English language teaching (ELT) indicate that students from regional language backgrounds often face difficulties in acquiring English proficiency due to limited exposure and lack of communicative practice. Scholars have suggested that the integration of technology in language classrooms helps reduce these barriers by providing interactive and learner-centred environments.

Research related to smart learning reveals that digital platforms and AI-powered applications enhance listening, speaking, reading, and writing (LSRW) skills through real-time feedback, adaptive content, and continuous practice. Many researchers have observed that the use of AI-based translation and voice-assisted tools enables learners to connect their mother tongue with English, leading to better comprehension and confidence.

Recent literature also aligns AI-based education with national development goals. Studies focusing on digital education in India emphasize that smart learning supports inclusivity, skill development, and equal access to quality education, which are essential for achieving the vision of *Viksit Bharat*. However, researchers also point out challenges such as lack of digital infrastructure, teacher training, and awareness regarding effective use of AI tools.

Overall, the reviewed literature establishes that while AI has strong potential to transform English language learning, further empirical studies are required to understand its effective implementation in multilingual and regional language contexts.

Scope of the Study

The study focuses on AI-based smart learning tools used for English language learning among undergraduate students from regional language backgrounds. It examines LSRW skill development and students' perceptions within the framework of *Viksit Bharat.*

Limitations of the Study

1. Limited sample size
2. Study confined to a single institution
3. Dependence on self-reported data
4. Time constraints
5. Limited access to advanced AI tools

Data Analysis and Interpretation

The data collected through questionnaires were analyzed using simple percentage analysis to understand students' awareness, usage, and perceptions of AI-based smart learning tools in English language learning. The analysis showed that a majority of students were familiar with basic AI tools such as translation apps, grammar checkers, and language learning platforms.

Most respondents reported that AI-based tools helped them improve vocabulary, pronunciation, and grammatical accuracy. A significant number of students felt more confident in speaking English when supported by AI tools that provided instant feedback and corrections. Students from regional language backgrounds indicated that AI-supported translation and voice-assist features helped them understand English concepts more clearly.

The interpretation of the data reveals that AI-enabled smart learning creates a supportive and learner-friendly environment, reduces fear of making mistakes, and encourages independent learning. Overall, the findings indicate a positive relationship between the use of AI tools and improvement in LSRW skills.

Findings

1. The study found that a majority of undergraduate students are aware of basic AI-based smart learning tools such as language learning apps, grammar checkers, and translation tools.
2. Students from regional language backgrounds reported that AI-supported tools helped them better understand English concepts by connecting them with their mother tongue.
3. The use of AI-based tools showed noticeable improvement in students' listening, speaking, reading, and writing (LSRW) skills, especially in vocabulary and pronunciation.

4. AI-enabled learning reduced language anxiety and increased students' confidence in using English for communication.
5. Most students expressed a positive attitude towards learning English through smart learning platforms compared to traditional methods.
6. The findings indicate that AI-based smart learning promotes independent and self-directed learning among students.
7. The study reveals that effective integration of AI in English education supports inclusive and equitable learning, aligning with the vision of *Viksit Bharat*.

Conclusion

The present study concludes that Artificial Intelligence-based smart learning plays a crucial role in enhancing English language learning, especially for students from regional language backgrounds. AI tools provide personalized learning opportunities, immediate feedback, and flexible learning environments, which contribute to the improvement of listening, speaking, reading, and writing (LSRW) skills. The integration of regional languages with English through AI supports inclusive education and aligns with the broader educational vision of *Viksit Bharat*.

Suggestions

1. Educational institutions should integrate AI-based smart learning tools into regular English language teaching to enhance student engagement.
2. Teachers should be provided with training and workshops to effectively use AI tools in English classrooms.
3. AI-based learning platforms should be designed to support regional languages along with English to ensure better comprehension.
4. Students should be encouraged to practice self-directed learning using AI tools beyond the classroom.
5. Colleges should improve digital infrastructure such as internet connectivity and access to smart devices.
6. Curriculum planners may include technology-assisted language learning components in English syllabi.
7. English language laboratories can be strengthened using AI-powered speech and pronunciation tools.
8. Awareness programmes may be conducted to familiarize students with ethical and responsible use of AI.
9. Institutions should promote blended learning models, combining traditional teaching with smart learning.

10. Government and educational authorities should support colleges with funding and policy guidance for AI integration.
11. Teachers may encourage peer learning and collaborative tasks using AI-supported platforms.
12. Regular assessment of students' progress using AI-based evaluation tools can be implemented.
13. AI tools should be adapted to suit rural and first-generation learners.
14. Students should be motivated to use AI tools for improving communication skills and employability.

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From Familiar Language to Spoken Expression: Making Communicative English Work in Intermediate Classrooms

Saishilpa Janamanchi
Research Scholar, University College of Arts & Social Sciences (UCASS), Osmania University, Hyderabad & Junior Lecturer in English at GJC(G), Jagtial

Abstract

The Communicative English syllabus at the Intermediate level is designed to promote speaking through activities such as JAM sessions, short speeches, and classroom interaction. In practice, however, participation often remains uneven, particularly among students from small-town backgrounds who are familiar with vocabulary but hesitant to speak. This paper is based on classroom observation and examines how speaking activities can be made more accessible without altering the syllabus itself. It suggests that students already use English in limited but meaningful ways through everyday interaction, and these can serve as starting points in the classroom. Small and regular activities, informal speaking opportunities, and reduced dependence on memorisation can support gradual development of speaking. The paper also considers how AI-based tools can assist students in practising, refining, and extending their responses in a low-pressure environment. The study argues that the effectiveness of communicative teaching lies in how it is implemented, and that a gradual, practical approach can improve students' willingness to communicate.

Keywords: Communicative English, speaking skills, Intermediate students, classroom practice, AI, willingness to communicate

Introduction

The Communicative English syllabus at the Intermediate level gives importance to speaking as an essential part of language learning. Activities such as JAM sessions, short speeches, and group interaction are meant to help students express their ideas and use English beyond written work. These activities are now a regular feature of classroom teaching.

Even with this structure in place, participation is not the same across all students. In many classrooms, a few students respond comfortably, while others hesitate or avoid speaking. This is often seen among students from small-town backgrounds. They are able to understand the lesson and recognise vocabulary, but speaking beyond a few words becomes difficult.

This gap does not always come from a lack of exposure. Many students use English in small ways in their daily lives. They discuss films and series, recall certain dialogues, and use short expressions in conversation or messages. These forms are limited, but they show that students are not completely unfamiliar with the language. The difficulty arises when these small forms have to be extended into structured speaking. Classroom activities often expect students to respond clearly and continuously within a short time. This creates pressure, especially for those who are still developing confidence. Some students prepare and memorise answers, while others choose to remain silent.

This paper examines how speaking activities can be handled in a more gradual and practical way. It suggests that classroom practice can begin from what students are already able to express and slowly extend it into longer responses. It also looks at how informal speaking moments, small daily tasks, and simple variations in activity can support participation. In addition, the paper considers how AI-based tools can be used in a limited and supportive way to help students practise and refine their language without pressure.

II. Literature Review

In language learning, the ability to speak is not only linked to vocabulary or grammar, but also to the learner's readiness to use the language. The idea of Willingness to Communicate explains that students may know what to say, yet hesitate because they feel unsure or uncomfortable in a particular situation. The way a speaking task is presented can influence whether a student chooses to participate.

The role of anxiety in language use is also important. When students feel that their response must be correct or complete, they may avoid speaking or depend on memorised answers. This is often seen in classroom situations where speaking is closely linked to performance. In such cases, familiarity with language does not always lead to active use.

At the same time, students do not come to the classroom without any experience of using English. They often engage with language in small ways through everyday interaction. These may not be full sentences or formal expressions, but they are usable forms of communication. When such familiarity is recognised, it can be used as a starting point for further development.

This paper takes a practical view of these ideas. Instead of focusing on theory alone, it looks at how classroom practices can support students in moving from limited expression to more confident speaking.

III. Methodology

This paper is based on regular classroom observation of Intermediate students, particularly those from small-town backgrounds. The observations come

from everyday teaching situations, including speaking activities such as JAM sessions, short responses, and informal interaction.

The study follows a qualitative approach and does not involve formal data collection or experimental design. Instead, attention is given to patterns of participation, the nature of student responses, and the conditions under which students are more or less willing to speak.

In addition to classroom observation, the study also considers the use of simple activity-based tasks and limited use of AI tools as part of regular practice. These are not treated as separate interventions but as part of ongoing classroom interaction.

The aim is to understand how speaking develops in actual classroom conditions and how small practical changes can support this process.

IV. Findings

Classroom observation shows a clear gap between what students know and what they are willing to say. Many students are able to follow the lesson, understand the topic, and recognise commonly used words. They respond when asked simple questions, but when the same students are asked to speak for a longer time, hesitation becomes visible.

This hesitation is not always due to lack of exposure. Students often use English in small ways outside formal speaking tasks. They discuss movies and series, recall certain dialogues, and repeat phrases they have heard. They are also familiar with expressions used in captions and everyday messages. These are usually short and incomplete, but they are meaningful and usable.

The difficulty appears when students are expected to extend these forms into structured responses. During activities such as JAM sessions, students are required to speak continuously for a short period. Many of them feel the need to give a complete and correct answer. As a result, they prepare in advance and memorise what they plan to say. When called upon, they reproduce these memorised responses.

While this allows them to participate, it does not lead to independent speaking. If the topic changes or if they are asked an unexpected question, the same students hesitate again. This shows that memorisation helps them complete the task, but does not build confidence in using language.

Another pattern that becomes clear is the effect of observation. When students are aware that they are being assessed or closely watched, they become more careful and less willing to attempt a response. Even when they understand the topic, they may choose to remain silent rather than risk making a mistake.

At the same time, when students are asked to respond in a more relaxed moment, their participation changes. Short answers come more easily when the task does not feel like a test. Students who hesitate during formal speaking tasks are sometimes able to respond in simple sentences when the pressure is reduced.
These observations suggest that students are not starting from zero. They have some familiarity with language, but they need support in extending it. The way speaking tasks are conducted plays an important role in whether they choose to participate.

V. Discussion

If students already use English in small and familiar ways, classroom practice can begin from there instead of expecting full responses from the beginning. The shift is not about changing the syllabus, but about how speaking is introduced.

One practical way to do this is through small daily tasks. Instead of starting with a full speaking activity, a simple situation can be given to students. They can be asked to write a one-line response or a short caption. The next day, they can be asked to say the same thing aloud. Because the task is small and familiar, students are more willing to attempt it. Over time, these short responses can be extended into a few sentences.

Variation in simple expressions also helps. A task like asking each student to say "happy birthday" in a different way encourages them to think without fear. There is no single correct answer, so students try different forms. This kind of activity allows them to move beyond fixed phrases in a natural way.

It is also useful to change how and when speaking is initiated. When every speaking activity is planned and announced, students prepare for it as a performance. In contrast, when they are asked to respond during regular classroom interaction, without prior notice, the response is more spontaneous. In such moments, students do not feel that they are being assessed, and even a short answer becomes meaningful.
Activities that involve real-time response can further support this process. For example, during a simple classroom game, students can be asked to give live commentary on what is happening. They describe actions, react to events, and sometimes add humour. In such situations, memorisation is not possible. Students speak as they think, and the focus shifts from correctness to expression.

Allowing different types of responses also makes a difference. Not all students are ready to speak at the same level. Some may give a short and clear answer. Others may speak in parts or take time to organise their thoughts. Accepting this variation helps more students take part. Speaking becomes a process rather than a single performance.

In addition to regular lessons, simple student-led activities can support confidence. A class session planned for participation, such as storytelling, small performances, or group activities—gives students a chance to use English in a different way. When students take roles such as inviting participants, introducing a performance, or offering a few words of appreciation, they use language for a purpose. These experiences often make them more comfortable speaking later in formal tasks.

AI-based tools can also be used in a limited and supportive way within this process. When students are given a small task, such as writing a caption or expressing an idea, they may use AI to try different versions of the same sentence. This helps them see how their idea can be expressed in more than one way. It becomes easier for them to choose a form they are comfortable speaking.

Students can also record their responses as part of practice. After completing a small speaking task, they can record it on their phones and use AI tools to review or refine their language. The suggestions they receive are based on their own sentences, which makes the feedback more meaningful. Since this happens outside the classroom, it reduces the fear of immediate correction.

AI can also be used to create simple visual prompts. Images of familiar situations—such as a classroom, a bus stop, or a conversation—can be shown to students. These visuals give them something concrete to respond to. Even a few lines describing the situation can become a starting point for speaking. If needed, these responses can later be refined with the help of AI.

In all these cases, AI does not replace classroom teaching. It supports practice by giving students a space to try, change, and improve their language. The main development still happens when students use these responses in actual interaction.
The communicative syllabus already allows for such flexibility. Activities are designed to promote speaking, but the way they are handled determines how many students participate. When tasks are approached in a gradual and practical way, more students are able to take part.

Using the Textbook as a Bridge to Meaningful Participation

The Communicative English textbook at the Intermediate level, particularly the section on communicative functions, is thoughtfully designed with an emphasis on practical language use. The activities included in it allow scope for interaction and everyday communication. The intention is not to confine learning strictly within the limits of the syllabus, but to enable students to use language in meaningful situations. In this context, classroom activities can act as a bridge between what students already do and what the textbook aims to develop. When familiar forms of expression are used as starting points, students are gradually drawn into the speaking tasks outlined in the syllabus. The textbook, therefore, can be approached not as a set of tasks to be completed, but as a resource that supports gradual development.

Designing activities that connect with what students are already engaging with can further strengthen this process. When tasks reflect familiar contexts or commonly used expressions, learners show greater interest in responding. The activity feels closer to their own experience, and they are more willing to take part. This familiarity creates a natural need to participate. Students feel that they already have something to say, and speaking becomes an act of expression rather than a requirement. In such situations, classroom discourse becomes more meaningful, and the movement from simple expression to structured speaking happens more smoothly.

VI. Conclusion

The Communicative English syllabus at the Intermediate level provides a clear structure for developing speaking skills. The activities included in it are relevant and useful. The difficulty lies in how students experience these activities in the classroom.

Many students are not completely unfamiliar with English. They use it in small ways, but they hesitate when asked to speak in a formal setting. When speaking is treated as a complete task from the beginning, it creates pressure. This leads to memorisation, limited participation, or silence.

A gradual approach can make a clear difference. When students are allowed to begin with simple expressions and short responses, they are more willing to participate. Small daily tasks, informal speaking moments, and activities that allow variation help reduce hesitation. Over time, these small attempts can be extended into more structured speaking.

The use of AI can support this process when it is kept simple and limited. It can help students try different ways of expressing the same idea, refine their responses, and practise without fear. At the same time, the main focus remains on actual classroom interaction.

The syllabus does not need to be changed. It already allows for flexibility. What is required is a shift in how speaking is introduced and developed. When students begin from what they can already express and are given space to build on it, speaking becomes more natural and more consistent across the classroom.

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The Ethical Implications of Artificial Intelligence in Education:A Critical Analysis

Gonela Subhash
Assistant professor of English
Government Degree College, Nirmal

Abstract

Education aims to equip individuals with the skills, knowledge, and values necessary for personal and societal development. As society evolves due to technological advancements and cultural changes, educational practices must adapt to prepare students for future challenges. The integration of Artificial Intelligence (AI) in education can enhance curricula and teaching methodologies, providing personalised learning experiences and instant feedback. However, incorporating AI requires a comprehensive framework addressing ethical implications, including data privacy, transparency in decision-making, and potential biases in AI algorithms. It is crucial to ensure that technology enhances rather than diminishes the teacher-student relationship. Continuous professional development for educators should also focus on the ethical use of AI tools. Biases inherent in AI systems can perpetuate stereotypes and misinformation, impacting impressionable young minds. Therefore, robust oversight and ethical guidelines are essential to mitigate these risks and promote responsible AI integration in education.

Keywords : Artificial intelligence, education, cognitive skills, biases, equity, ethical concerns

Introduction

Education is a comprehensive learning process designed to prepare individuals to be effective, responsible members of society. It equips them with essential skills, knowledge, and values necessary for personal development and societal contribution. Through education, individuals develop critical thinking, problem-solving, and social awareness, enabling them to become independent, informed, and engaged citizens.

As society evolves—driven by technological advancements, cultural shifts, and economic changes—the orientation of the education system must also transform. Educational curricula need to adapt to reflect the current demands of the job market and societal needs, ensuring that students are not only knowledgeable but also adaptable to the rapid changes in their environments. This dynamic relationship between education and society emphasises the importance of continual assessment

and reform within educational practices to foster a generation that is not only capable but also prepared to meet the challenges of the future.

The Ethical Concerns

The advent of Artificial Intelligence (AI) has significantly accelerated the expansion of knowledge and technology across various fields, transforming the ways we work, learn, and interact. In particular, the realm of education, often considered the foundational bedrock of societal advancement, must proactively adapt to integrate AI technologies. By doing so, educational institutions can enhance their curricula and teaching methodologies, ultimately upgrading students' skills to meet the demands of a rapidly evolving workforce.

Incorporating AI into education can take many forms, such as personalised learning experiences tailored to individual student needs, intelligent tutoring systems that provide instant feedback, and data analytics tools that help educators track progress and identify areas needing improvement. Furthermore, training students in AI literacy prepares them not only to use these technologies effectively but also to understand their implications in fields such as ethics, data privacy, and societal impact. By fostering an environment where AI is a core component of educational practice, we empower future generations with the knowledge and skills necessary to thrive in a technology-driven world.

Before implementing an AI-driven approach to the teaching-learning process, it is essential to establish a comprehensive framework or set of guidelines that educators can adhere to at the policy level. This framework should address the various moral and ethical issues arising from the integration of AI into education.

Key considerations include ensuring data privacy and security for students and transparency in how AI systems make decisions about student assessment and learning paths. Additionally, educators must grapple with potential biases in AI algorithms that could affect equity in educational opportunities. It is also crucial to contemplate the impact of AI on the teacher-student relationship, ensuring that technology enhances rather than diminishes the personal touch of teaching.

Moreover, the framework should encourage ongoing professional development for educators, equipping them with the necessary skills to effectively use AI tools while remaining vigilant about the ethical implications of their use. By addressing these considerations proactively, we can create a supportive environment for both educators and students that harnesses AI's potential responsibly.

According to the UNESCO article "Artificial Intelligence: Examples of Ethical Dilemmas," AI-systems deliver biased results. Search-engine technology is not neutral as it processes big data and prioritises results with the most clicks relying

both on user preferences and location. Thus, a search engine can become an echo chamber that upholds biases of the real world and further entrenches these prejudices and stereotypes online." The biases and prejudices inherent in society can infiltrate AI platforms, as these systems continuously learn from the vast array of data available online. Consequently, these biases can significantly influence AI's functionality and decision-making processes. Unlike humans, AI entities lack ethical and moral understanding, operating purely as machines designed to process data and generate outputs based solely on the information they encounter. Without a human-like conscience or moral obligation, AI systems can unintentionally perpetuate stereotypes and inaccuracies.

This unchecked bias can be particularly harmful to impressionable young minds, as they might be exposed to skewed representations of reality. For example, if an AI algorithm is trained on biased data, it may reinforce harmful stereotypes or provide misleading information, thereby shaping its users' beliefs and perceptions. The potential for such consequences underscores the importance of implementing robust oversight and ethical guidelines in the development and deployment of AI systems to mitigate bias risks and ensure more equitable and accurate information representation.

Hence, UNESCO emphasises a human-centred approach to AI in education to ensure it does not widen technological divides. UNESCO's mandate calls inherently for a human-centric approach to AI. It aims to shift the conversation to include AI's role in addressing current inequalities regarding access to knowledge, research and the diversity of cultural expressions and to ensure AI does not widen the technological divides within and between countries. The promise of "AI for all" must be that everyone can take advantage of the technological revolution underway and access its fruits, notably in terms of innovation and knowledge." ("Artificial intelligence in education").

In the Indian context, a classroom is a rich tapestry of students hailing from diverse socio-economic and religious backgrounds. This diversity not only enriches the learning environment but also poses unique challenges for educators. It is crucial for teachers to foster an atmosphere where each student's identity is acknowledged and respected. As the education system increasingly incorporates AI-based tools and methodologies, teachers must remain vigilant in ensuring that equity is prioritised. This means adapting AI technologies to address the varied learning needs and abilities present in the classroom, ensuring that all students have equal access to educational resources and opportunities. By embracing this approach, educators can promote inclusivity and help bridge the gaps that often arise from socio-economic disparities. The journey into AI must be approached with the utmost caution, particularly when it concerns the education of our children. "The increasing reliance on AI in education

necessitates an in-depth exploration of its ethical implications. While AI has the potential to address some of the most persistent challenges in education—such as personalisation, accessibility, and efficiency—it also introduces risks that, if left unaddressed, could compromise educational equity and fairness. Many AI models are developed using historical data, which can contain biases that disadvantage certain student populations. Additionally, concerns about data privacy and security continue to grow as educational institutions collect and store vast amounts of student information" (Dave 2).

The Threat of Impairment of Cognitive Skills

Excessive reliance on artificial intelligence in education can negatively affect students' cognitive development. In traditional educational models, students are encouraged to engage deeply with material, employing skills such as hard work, research, and critical thinking. This immersive approach fosters self-directed learning and instils intellectual curiosity. However, when essential information is readily available at the click of a mouse, many students may become complacent, opting for convenience over the rigorous effort needed for true understanding. As a result, they may miss opportunities to develop analytical skills, problem-solving abilities, and the discipline required for long-term academic success. This shift could lead to a generation less equipped to tackle complex challenges and think independently. There is a lot of debate about the impact of AI on students' cognitive skills. "On the one hand, some studies show that it enhances student engagement through personalized methods, such as smart tutoring, individual analytics in academic performance, and automated grading. On the other hand, some research suggests that intelligent systems in education can worsen learning effectiveness. The main arguments against the use of AI in higher education include a decrease in motivation to solve problems individually, decreased abilities in creativity and critical thinking skills, and biased results in AI-based assessments" (Arslanova et al 1034). This situation highlights important ethical concerns in the academic realm. Students may resort to plagiarism or rely on artificial intelligence to complete their assignments, driven by a lack of motivation to engage deeply with their studies. This tendency not only undermines the learning process but also fosters a culture where academic integrity is compromised. As a result, students might miss out on developing critical thinking and problem-solving skills, which are essential for their personal and professional growth. The temptation to take shortcuts can lessen their sense of accountability and diminish the value of their educational experience.

Conclusion

The AI revolution has fundamentally transformed the teaching and learning process in education. To remain competitive in today's rapidly evolving world, educational models must seamlessly integrate AI technology into both curricula and teaching methodologies. This integration involves not only incorporating AI tools that enhance learning experiences but also ensuring they are used effectively to support diverse learning needs. However, it is crucial to recognise that a

comprehensive education policy must be established to guide the use and implementation of AI in classroom settings. This policy should address the educational standards and frameworks necessary for effective integration, ensuring that both educators and students can harness the benefits of this technology.

Moreover, the introduction of AI into the educational landscape raises significant moral and ethical considerations that require close monitoring by educators and policymakers alike. Concerns regarding data privacy, algorithmic bias, and the potential for over-reliance on AI should be prioritised to safeguard students' interests.

Additionally, it is imperative to ensure that the use of AI does not adversely affect students' cognitive development. This necessitates a balanced approach where AI complements traditional teaching methods rather than replaces them, fostering critical thinking, creativity, and interpersonal skills among learners. By doing so, we can create an educational environment that not only prepares students for the challenges of the future but also nurtures their holistic development.

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ICT Integration with the TLP: A Study on the Role of the Digital Platforms; Kahoot, Mentimer, Quizlet, and Google Classroom in dealing with the Undergraduate ESL Learners.

U. RAVI KUMAR
Assistant Professor of English
Government Degree College, Bhainsa, Nirmal Dt. TG

Abstract

The present study fosters on the effectiveness of the selected digital tools in dealing with the undergraduate English as Second Language Learners. The crucial task of the entire TLP (Teaching Learning Process) is Learning, the focus of a teacher must be, make learning easier. Once in our education system, oral transaction, chalk and talk, teacher-oriented methods were prominent. What's happening now in our education system? FM Radio, ETV (Educational Television), eBooks, Audio Books, Educational Video, Multimedia, IWBs (Interactive Whiteboards), IFPs (Interactive Flat Panels), Smart Phones, Tablets, iPad, Virtual Classrooms, Simulations, Wikis, Blogs, Podcasts, Facebook, Skype, Twitter, WhatsApp, LMS (Learner Management Systems), MOOCs (Massive Open Online Courses), OER (Open Educational Resources), Educational Cloud, Web 2.0, Mobile Apps, AI and VR (Artificial Intelligence and Virtual Reality) Tools, Gamification etc.

Why do we, the teachers of English, not able to make our students to get mastery over the basic language skills, (at least the receptive skills) even after teaching English for 15 years, even in this digital era? Have we noticed the basic obstacles of an ESL learner in getting mastery over these skills and embrace the digital gadgets? Technology has transformed education; digital tools provide new ways to teach, assess, and engage students. Tools like Kahoot, Quizlet, Mentimer offer interactive formative assessment and engagement. Google Classroom for assignment and course management. Studies on the effectiveness of these tools show it boosts motivation, knowledge retention, classroom engagement.

Key words: Digital Platforms, Kahoot, Mentimer, Quizlet, AI&VR, Simulation, LMS, MOOCs, OER, Gamification.

Introduction:

What is the crucial task of the entire educational process? It is Learning, the focus of a teacher must be, make learning easier. What was once in our education system? As per *Samuel J. May (1855) "*In the winter of 1813, I attended a mathematical school kept in Boston...On entering the room, we were struck at the appearance of an ample *Black Board* suspended on the wall, with lumps of chalk on

a ledge below, and cloths hanging at either side. I had never heard of such a thing before". What's happening now in our education system? FM Radio, ETV (Educational Television), eBooks, Audio Books, Educational Video, Multimedia, IWBs (Interactive Whiteboards), IFPs (Interactive Flat Panels), Smart Phones, Tablets, iPad, Virtual Classrooms, Simulations, Wikis, Blogs, Podcasts, Facebook, Skype, Twitter, WhatsApp, LMS (Learner Management Systems), MOOCs (Massive Open Online Courses), OER (Open Educational Resources), Educational Cloud, Web 2.0, Mobile Apps, AI and VR (Artificial Intelligence and Virtual Reality) Tools, Gamification and more.

The teachers of English, not able to make the students to get mastery over the basic language skills (at least the two receptive skills; Listening and Reading) even after teaching English for 15 years, that too in this digital era? Have we noticed the basic obstacles of an ESL learner in getting mastery over these skills and are we embracing the digital gadgets in ELL (English language Learning)? As technology has transformed education; digital tools provide new ways to teach, assess, and engage students. Tools like Kahoot, Quizlet, Mentimer offer interactive TLP. Google Classroom for assignment and course management. Studies on the effectiveness of these tools show that they boost motivation, knowledge retention and classroom engagement.

The present study fosters on the effectiveness of the selected digital tools in dealing with the undergraduate ESL students and identifies challenges, best practices, and implementation strategies for adopting these tools in ESL learning at undergraduate level.

Importance:

The topic of the research paper is apt and befitting. B. F Skinner opined that, **"**Our kitchens are more mechanized than our classrooms" (Bjork, 1996, p. 36). Eric Ashby, identified 4 revolutions in education (Morgan, 1978, p. 146)

*The first revolution occurred when the task of educating the young was shifted from parents to teachers and from the home to the school.

*The second came with the adoption of the 'written word as a tool of education'.

*The third came with the invention of the printing press and books.

*The fourth with the advent of electronics & development in ICT.

As per Eric Ashby, "Educational technology, any technology, which increases the rate of learning, would enable the teacher to teach less and the learner to learn more."

Objectives:

- To evaluate how each tool; Kahoot, Mentimer, Quizlet, Google Classroom contributes to student engagement in undergraduate ESL course.
- To examine the impact of these tools on learning outcomes (e.g., grades, assignment performance, retention of concepts).

- To assess student motivation, perception, and satisfaction when these tools are used.
- To compare the relative effectiveness of these tools (which ones are more suitable for which type of teaching activity — e.g., lecture, lab, project work).
- To identify challenges, best practices, and implementation strategies for adopting these tools in ESL learning at undergraduate level.

Hypotheses:

H1, Use of tools like Kahoot, Quizlet, Mentimer and Google Classroom leads to significantly better student performance in learning ESL at undergraduate level compared to traditional teaching methods.

Research Methodology:

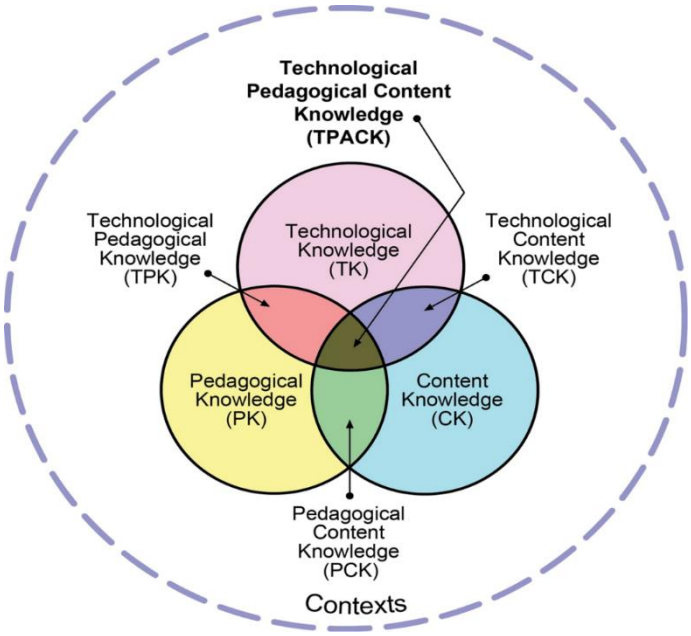
The researcher adopted Qualitative method to understand perceptions, experiences, and challenges. The tools and techniques for Data Collection are secondary sources; the research journal articles on digital learning tools in Shodganga, Shodgangotri. Review papers on gamification or e-learning, books/book chapters on educational technology, conference papers on Kahoot!, Mentimeter, or Google Classroom and reports from organizations (e.g., UNESCO, UGC)

Review of Literature:

Technology in Education Vs Technology of Education

Technology in Education	Technology of Education
The use of various technologies (tools, devices, platforms) within an educational setting to support teaching and learning Examples: - Using PowerPoint to deliver a lecture - Playing an educational video/audio in a class - Using Zoom or Google Meet for online classes	A broader field that includes the study, development, and application of technological tools and processes specifically designed to enhance learning. Developing e-learning platforms like Kahoot, Google Classroom, Creating interactive educational apps or gamified learning environments - Researching how AI or VR) can improve learning outcomes

TPACK Framework



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LMS, Learning Management System; a software application for the administration, documentation, tracking, reporting, automation, and delivery of educational courses, training programs.

Best learning management systems for ESL Learners

- Kahoot: Game-based learning and formative assessments.
- Mentimeter: Real-time polling and quizzes.
- Quizlet: The LMS for Language Learning
- Google Classroom: The LMS for Course Creation
- Padlet: on collaborative wall
- Canva for Education.

Several studies highlight the effectiveness of Kahoot! in improving student engagement (Wang & Tahir, 2020). Similarly, Mentimeter has been found useful for real-time feedback in classrooms (Mayhew, 2019). Google Classroom supports blended learning and assignment management effectively (Albashtawi & Al Bataineh, 2020).

KAHOOT: A free, game-based learning platform used to create quizzes, discussions, and surveys that engage participants through interactive activities. It's popular in classrooms, corporate training, and events to make learning fun and competitive. How to Create a Kahoot Quiz?

Step 1: Sign Up or Log In

- Go to (https://kahoot.com).
- Click Sign up (if you're new) or
- Log in (if you already have an account).
- Choose your role (e.g., Teacher, Student, Personal, Work) and follow the prompts.
- Use your email or a Google/Microsoft account to sign in.

Step 2: Create a New Quiz

- Once logged in, click "Create" on the top-right.
- Select "New Kahoot" (you can also choose templates).
- Start adding questions: - Click "Add question". - Choose the type: Quiz (MCQs), True/False, Poll, or Puzzle.

Step 3: Save and Test

- After entering all questions, click "Save".
- Give your quiz a title, add a description, and choose a visibility setting (private or public). Click "Continue" to save your quiz.

"Dozens of studies show learning benefits of using Kahoot!" (Kahoot blog review, 2020). The studies found that Kahoot improves learning performance, classroom dynamic, student attitudes, participation, and reduces anxiety compared to traditional instruction. The effects of using Kahoot! for Learning; A Literature Review (Computers & Education, 2020) covered these studies; main findings confirm positive effects on performance, learning attitudes, engagement, etc. But also note some challenges (technical issues, question- difficulty, time pressure). Students' Perception of Kahoot's Influence on Teaching and Learning (Springer Open, 2018) explored how Kahoot affects motivation, classroom dynamics, interaction. Students reported better engagement, more peer interaction, better attention. Effects of Web 2.0 Tools (Kahoot, Quizlet, Google Forms) on Formative Assessment in Online Chemistry Courses (Yılmaz & Yaşar) studied 32 students online. Results: positive effects on learning reinforcement, awareness of learning level, more enjoyable classes.

Limitations of Kahoot:

1. The focus on rapid, timed responses may promote guessing rather than fostering thoughtful and profound learning.
2. The leader board feature can induce pressure, leading to anxiety among students who rank lower.
3. The free plans are significantly constrained, frequently capping live events to small groups (for instance, 10-40 participants), rendering them inappropriate for larger classes.
4. A reliance on stable, high-speed internet is essential; connectivity problems can interrupt or terminate sessions.

MENTIMETER: Mentimeter is an interactive presentation and polling tool that allows real-time audience engagement through live polls, quizzes, word clouds, Q&As, and more.

It's widely used in classrooms, meetings, webinars, and conferences to make sessions more interactive, engaging, and collaborative.

1. Go to (https://www.mentimeter.com) and sign up.
2. Create an interactive presentation.
3. Share the access code with your audience.
4. Audience goes to (https://www.menti.com), enters the code, and participates live.

Limitations of Mentimeter

1. Although it excels in fostering engagement, it is not intended for formal, long-term monitoring of student progress or for summative evaluations.
2. The free version restricts the number of interactive slides and participants, with advanced features available only through paid subscriptions.
3. Its primary focus is on presentations and polls, which means it lacks the dynamic, game-oriented environment found in platforms such as Kahoot.
4. If utilized excessively, students may become desensitized to its interactive components.

QUIZLET: It is a free, web-based learning tool designed to help students study and master various topics using digital flashcards and interactive games.

It's especially popular among students and teachers for memorization, vocabulary building, and revision.

- Educational Uses: Vocabulary practice (languages, science, history, etc.)
  - Spelling drills
  - Definitions and concepts review
  - Formative assessments and homework
  - Revision before exams

Quizlet shows up alongside Kahoot in formative assessment contexts; helps with vocabulary, reinforcement, and asynchronous learning. In Yılmaz & Yaşar's study, Quizlet + Kahoot + Google Forms had a positive effect.

There is less published empirical work on Mentimer, Canva specifically in undergraduate settings, in the literature I found so far. Studies with Mentimer often deal with live polling / feedback in lectures generally, but not many in comparative settings alongside these other tools.

Limitations of Quizlet

1. Although primarily beneficial for flashcards and recalling definitions, it is not as effective in promoting critical thinking or a deeper understanding of concepts.
2. Despite the popularity of Quizlet Live, it offers fewer diverse and rapid team options when compared to its competitors.
3. The free version is ad-supported and does not include advanced, personalized, or offline learning features, which necessitate a subscription to "Quizlet Plus."

4. Certain functionalities, such as Quizlet Live, necessitate a minimum participant count (typically six) to operate effectively.

GOOGLE CLASSROOM: Google Classroom is a free learning management system (LMS) developed by Google. It helps teachers create, distribute, and manage classroom content in a digital environment. It's part of the Google Workspace.

How to deal with Google Classroom?

Create a Class-

1. Go to (https://classroom.google.com)- Click "+" > Create class - add class name, section, and subject
2. Invite Students- Share the class code or invite via email
3. Post Announcements & Materials- Use the Stream tab to post updates or reminders- Attach files, links, or video
4. Create Assignments & Quizzes- In the Classwork tab: - Click "Create" > Choose from assignment, quiz, question, material, etc.
5. Grade & Give Feedback- Use the Marks tab to see submissions and give grades- Add private comments.

Limitations of Google Classroom

1. Primarily functioning as a Learning Management System (LMS), it is designed for the organization, distribution, and collection of assignments, but it lacks integrated, interactive, real-time assessment features such as quizzes or polls.
2. Although guardians can receive summaries of classroom activities, their capacity to engage directly or navigate the classroom in real-time is restricted.
3. Teachers overseeing multiple classes may find the interface overwhelming, which complicates the tracking of student progress over time.
4. Its effectiveness is maximized when it is fully integrated within the Google Workspace, which may not be suitable for institutions that employ alternative systems.

Common Limitations across all platforms:Potential for Distractions

High Costs and Resource Allocation

- Technical Issues and Disruptions
- Lack of Training and Support
- Cybersecurity Risks
- Digital Divide and Equity Issues
- Privacy Concerns
- Over-reliance on Technology

Conclusion:

Does the teacher be a techno-savvy? or Does the teacher be a technophobe? A teacher must follow the blended or hybrid method. Utilizing platforms such as Kahoot, Mentimeter, Quizlet, and Google Classroom effectively entails employing them to improve educational outcomes, not merely for amusement or administrative tasks, while steering clear of excessive stimulation and screen fatigue. The essential factor is to ensure that the tool corresponds with the educational objective (formative

assessment, brainstorming, self-study, or organization. To prevent digital fatigue, it is essential to position technology not as the centrepiece of the lesson but rather as a facilitator. An effective strategy is to integrate these tools, utilizing Google Classroom as the organizational base, Mentimeter to assess the audience's understanding, Kahoot to invigorate the atmosphere, and Quizlet to reinforce knowledge autonomously.

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Algorithmic Authority and the English Classroom: Ethics, Agency, and Pedagogical Responsibility

Sahaja Poralla
Lecturer in English
Govt Degree College Alair,
YadadriBhongir District,
Mahatma Gandhi University, Telangana State, India

Abstract

The implementation of computational algorithms in the teaching of the English language has offered a new conceptualisation of personalised prompting, measurement, automated competence assessment, and smart language-assisting systems. Modern pedagogical systems intentionally integrate automated feedback systems, adaptive learning systems, and AI-based linguistic systems to increase efficiency and focus the learning process on the individual. However, the prevalence of algorithmic determinations as allegedly authoritative decisions breeds grave concerns about pedagogical governance, ethical transparency, and maintenance of professional autonomy. Such a phenomenon of algorithmic authority requires a strict questioning of the epistemic assumptions and the authority itself, on which the instruction based on AI is mediated. The current article takes advantage of an interdisciplinary intersection of applied linguistics, critical pedagogy, and educational technology to challenge the redistribution of authority in the English-language-teaching settings. It argues that the enthusiastic adoption of the algorithmic systems will only further spread linguistic prejudice, increase digital inequalities, and limit the professional agency of educators. In this connection, the research promotes a humanistic ethics policy framework, nurturing of long-term professional development, and AI literacy enhancement as conditions that are inevitable requirements. The objective of this framework is to protect human judgment, form non-discriminatory access, and enable learners to assess the outcomes of algorithms critically. Furthermore, the paper highlights the necessity of open communication with the stakeholders and the timely implementation of policy changes in response to the fast-changing AI ecosystem. Finally, this research study adds to the overall discussion of the digital revolution in education by suggesting the practices with humanistic values and social justice, thus outlining an ethically and pedagogically reasonable way of using AI in ELT.

Keywords: Algorithms, English language teaching, AI ethics, teacher agency, AI literacy, pedagogical responsibility, digital equity, and academic integrity.

Introduction

The gradual adoption of artificial intelligence (AI) in the educational setting and, more significantly, in the teaching of English Language Teaching (ELT) has brought about a shift in the paradigm of instruction. Modern AI applications, such as automated grammar checkers, data-driven analytics applications, intelligent learning environments, and chatbots, are regularly reported to increase pedagogical effectiveness and provide personalised learning experiences. However, this technological dominance raises complicated arguments about the decentralisation of decision-making, particularly in language evaluation and lesson planning. With the proliferation of algorithm evaluation systems and adaptive teaching models, the pedagogic locus of control gradually moves away from automated systems. This development is not just a technological one, but the reconceptualization of linguistic competence and its assessment with significant epistemological consequences. The implications of algorithmic ascendancy to the educational practice can only be fully understood through a strict interrogation of the underlying assumptions, inherent biases, and the socio-political undertones involved in AI-mediated pedagogy. Although the advantages of AI are often lauded in an academic conversation, the relevant issues of ethical custodianship, professional standards, and structural integrity are often relegated. To this effect, this paper aims to redress the balance of the discussion by conducting a systematic exploration of the many functions of AI-based systems in ELT and stipulating an imaginary framework that anticipates ethical responsibility, teacher autonomy, and critical agency by the learner as inseparable prerequisites of responsible AI implementation. The steadily growing use of AI to teach language also makes one consider the issue of cultural representation, individuality of learners, and the possible unintended outcomes of an algorithm-based pedagogy. These complex issues require sustained, sharp, and continuous interaction between teachers, policy makers and technologists. Concluding, I would argue that the implementation of AI in ELT should be regulated by adaptive, ethically inclusive approaches sensitive to social and moral aspects in general.

Theoretical Frames and Research Aims

This study aims to:

- Outline and build a theoretical explanation of the algorithmic authority in classes of the English language.
- Determine the ethical hazards that go with AI-based evaluation and pedagogical support.
- Consider the effects of AI integration on the agency and professional judgment of teachers.
- Suggest a human-centred model, which will make the utilisation of AI in ELT ethically and Pedagogically responsible.

- Find out the impact of AI-mediated instruction on learner agency and critical engagement.
- Analyse how algorithmic data practices impact privacy, transparency, and trust in educational institutions.

Methodology

The methodology of the paper is qualitative and theoretical, integrating interdisciplinary knowledge to develop a delicate analysis of the concept of algorithmic authority and its implications for the area of English language teaching. Instead of producing new empirical data, the study synthesizes theoretical contributions of applied linguistics, educational technology, and critical pedagogy and thus sheds light on the reconfiguration of professional identities and knowledge hierarchies in the conditions of AI mediation. The article develops a unified analytical framework that guides readers through a continuum of scholarly discourses, with the intention of informing their policy, teacher education, and pedagogical praxis. Combining these views, the study can be seen as a multifaceted prism through which one can question the role of AI in the ELT sphere. Moreover, the methodological equipment is integrated with critical discourse analysis of relevant policy documents and the most popular AI platforms in ELT. This method explains the discursive construction and distribution of language, power, and authority within these technological artifacts. Particular focus is being laid on finding common ethical patterns, new trends in professional positioning, and contextualising algorithmic systems into the historical accounts of education. It is this enlarged view that will guarantee a more comprehensive exploration of the convergence of AI, ethics, and pedagogy and, as such, will be able to develop a more detailed vision towards how these areas intersect in modern learning environments. In order to strengthen methodological rigor, the research also analyses case studies of recent AI practices in various ELT settings, delineates challenges, and outlines effective strategies for integrating ethical considerations into practice. The study explains the lived experiences of teachers and learners based on the practitioner reflections and institutional reports, and how teachers can negotiate the complexity of the algorithmic systems in their work to address the complexity of the work in both their professional and personal lives. Finally, this three-strand or triangulation gives a comprehensive basis for developing practical recommendations and provides a reflection of the dynamic interaction between policy, practice, and pedagogy in the overall context of AI use.

4. Literature Review And Theoritical Context

4.1 AI in Language Education

The introduction of AI in language teaching is a varied and growing field. Scoring automatic essays, speech recognition software, and adaptive grammar platforms are now standard in most educational institutions (Chapelle and Sauro). These systems usually make use of big data in training and have patterns to provide feedback that would have taken human teachers a longer time. Its proponents note the

ability of AI to offer personalized advice to students in real-time, which creates learner autonomy and removes the burden on teachers. Most AI models are usually trained on corpora that portray prevailing language practices and cultural norms. As a result, automated feedback is often normalized to ideologies of correctness that are specific to a given ideology of language and not the entire spectrum of natural language use. Thus, efficiency must be examined alongside questions of linguistic representation and fairness.

4.2 Algorithmic Authority and Educational Power

The algorithmic authority is the perceived credibility of the algorithmic outputs in the development of decisions and judgment about learning (Gillespie). This power is evident in the educational processes where graded outputs, pathway suggestions, or performance measurements are unquestionably accepted. According to Biesta, education is essentially a moral and epistemic activity and not just a cluster of quantifiable results. He states that teachers have the responsibility of developing judgment, responsibility, and meaning-making abilities, which are not completely reflected by algorithmic scoring. Once the AI systems become a proxy for human judgment, the pedagogical focus can be redirected to the measurable performance metrics, excluding such aspects of learning as creativity, critical thinking, and communicative sensitivity.

4.3 Ethics in the AI Integration

Ethical discussions of AI in education include the issues of bias, transparency, privacy, and accountability. The study of algorithmic systems by Noble shows that data-based tools have the potential to perpetuate the existing disparities when not taken care of or scrutinized critically. O'Neil points out the Hazards of black-box models whose logic is inaccessible to users, and aircraft decisions are hard to dispute or comprehend. AI models trained on standardised forms of English can discriminate against students who do not fit the norms or have a different linguistic repertoire than those in the training material. Ethical integration is thus more than a matter of technical protection.

4.4 Teacher Agency and Professional Identity.

Teacher Agency is educators' ability to exercise judgment, creativity, and autonomy in the context of instruction. Selwyn warns that the adoption of educational technologies may limit agency in cases when teachers are reduced to executors of the ready-made system instead of the creators of pedagogy. This danger is increased in situations where algorithmic systems suggest learning paths or automatically produce evaluation feedback, where teachers are pressured to accept the feedback. Protecting professional identity within AI-enhanced settings, therefore, necessitates that teachers engage in the process of selecting, interpreting, and modifying AI tools rather than being passive consumers of technological requirements.

4.5 AI Literacy and Critical Pedagogy

The concept of AI literacy is more than just the capacity to use technological devices; it includes a critical perspective on how algorithmic systems work and how

they define knowledge. According to Long and Magerko, to be AI literate is to understand the sources, limitations, and biases related to AI-generated outputs. This conceptualisation is similar to that proposed by Freire, who promotes not consumer learners but rather reflective interpreters of social and epistemic systems as critical pedagogy. In language teaching, AI literacy will prepare students to assess automated feedback, understand the limitations of algorithmic scoring, and take control of their language learning.

5. Discussion

5.1 Linguistic Bias and Normative Standards.

It is clear that modern AI is mostly trained on corpora that encode prevailing language norms, thus producing feedback that favours standardised grammar and vocabulary and marginalises regional, creative, or culturally inherent linguistic practices. These biases have serious pedagogical implications; learners whose language repertoires do not conform to these norms can be told to this effect, and thereby their identities as communicators will be eroded. In addition, the continuation of exclusionary practices through AI, by reinforcing a limited understanding of language proficiency, may negatively impact confidence in individual learners and the classroom environment, where a particular dialect or language variety is implicitly undermined. Educators should therefore critically question the epistemological bases of AI tools, provide more interpretive human mediation to supplement algorithmic feedback, and endorse linguistic diversity.

5.2 Algorithmic Systems and Professional Autonomy.

Delegation of evaluative power to algorithms threatens to undermine educators' interpretative power. However, professional autonomy is possible to maintain when educators critically analyze AI results, modify them to certain educational settings, and incorporate them into the pedagogical goals. Moreover, algorithms ought to be positioned so that teachers can challenge, ignore, or put into perspective the recommended solutions, making sure that the knowledge of pedagogy is at the core of the instructional decision-making process. The support infrastructures, including collaborative forums, mentoring and routine training should also be institutionalized in order to support a culture where teachers are comfortable working between the boundaries of human and algorithmic power. Professional development programs should enable educators with a chance to question the design presuppositions of AI platforms, to understand how to arrive at automated decisions, and to identify the situations in which human judgment should override algorithmic guidance.

5.3 Online Lack of Equity and Reach.

Fair access to AI technologies is not even in education. The availability of strong infrastructure and broadband connectivity means schools are more likely to take advantage of AI tools; in poorly resourced schools, the climb is likely to be uphill. Such disparities may exacerbate existing educational inequalities, limiting the benefits of AI to the privileged. Therefore, the institutions should not only consider

the pedagogical design of AI systems but also pay attention to the socio-economic indicators of access, where the technological integration should not support established patterns of privilege. Stakeholders working on digital inequality mitigation can focus on infrastructural development investments, provide specialised professional education opportunities in underprivileged situations, and promote open-access artificial intelligence resources.

5.4 Reinventing Academic Integrity.

The novelty of AI-assisted writing makes the traditional concepts of authorship and originality more difficult to define. Instead of using prohibitive strategies, educators ought to present clear policies that clearly distinguish between legitimate support and excessive dependence. Enforcing a requirement that students report their use of AI and allowing them to contemplate, especially the use of algorithmic aid, can enhance accountability, ethical cognisance, and transparency. Further, the academic integrity concept needs to be restructured in order to capture the truth of technological mediation. The institutions are advised to have discussions with students regarding the ethical use of AI, discussing those situations that can reflect both positive and negative uses. Incorporating lessons on AI ethics into curricula would help instructors to develop critical writing skills and enable students to negotiate the gravy areas of authorship, originality, and collaboration in the digital realm.

6. An Ai Integrationhuman-Centered Framework

A humanistic approach to responsible AI use in ELT puts emphasis on:

• Ethical governance and transparency, which requires publicly specified criteria of AI decision-making:

• Professional autonomy, making teachers the main finalists of instruction and evaluation;

• AI literacy, the ability of learners to understand, challenge, and exploit the outputs of algorithms in a responsible manner;

• Equity and access, dealing with inequalities in technological resources;

• Linguistic pluralism is the appreciation of the wide variety of language practices as an important pedagogical aim.

This paradigm views AI as a support system rather than an authoritative figure. Beyond these pillars, a human-based approach in practice aims at finding a way of collaborating with all educational stakeholders, such as teachers, students, administrators, and communities, to co-design AI tools that make sense and are culturally sensitive. It focuses on continuous assessment and continuous improvement of AI systems in order to maintain consistency with new pedagogical objectives and ethical principles. The framework also promotes the processes that allow open user feedback and participatory governance so that the users can shape the course of AI in education. Eventually, this strategy envisions an active equilibrium where technological breakthrough is always grounded on human values, inclusivity, and shared good.

7. Implications for Policy And Practise

Educational policy should specify well-defined ethical principles for AI implementation, including data protection, disclosure, and best practices for equal opportunity. Digital ethics, algorithmic literacy, and critical analysis of technology should be embedded in teacher education programs. The purposeful way in which AI engagement can be linked to reflective practice during curriculum development must be ensured so that technological competence is always associated with critical discernment. Another implication is that effective accountability mechanisms should be established to ensure the effects of AI systems on student performance and institutional best practices are monitored. The policy makers are advised to facilitate cross-sector collaboration in order to exchange best practices and research results, hence encouraging adaptive policy frameworks that are flexible to technological change. Marginalised learners should also be prioritised, which means that AI construction should be made inclusive, and those who will be using the system should have a voice, particularly historically underrepresented groups. Lastly, organizations must invest in continuous professional learning and establish forums for open discussion, criticism, and co-creation of AI-related practices to encourage a culture of shared responsibility and continuous advancement.

8. Conclusion

The growing integration of artificial intelligence into English language teaching is both an opportunity and a threat. Machiavellian in its approach to ethical accountability, professional agency, and learner empowerment, educators and institutions can navigate the complex landscape of algorithmic authority without compromising the principles that underpin education. Human-centred approach reinvents technology as a human-centred extension, open to human judgment, cultural differences, and stringent ethics. As a result, the future of ELT will be shaped not only by technological advancement but also by conscious decisions that are ethically grounded and therefore protect the centrality of human interpretation and agency. In the future, it is nonetheless crucial that scientists, practitioners, and policy-makers remain vigilant in assessing how AI is gradually transforming language education. Ongoing discussion and multi-disciplinary cooperation will be critical in the process of changing the theoretical backdrop and pedagogical methods to reflect new challenges. Through encouraging flexibility, critical reflection, and critical inquiry over time, the field can guarantee that the introduction of AI will not only add but will not remove the richness and humanity of English language teaching.

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Artificial Intelligence and the Road Ahead for English Language Pedagogy

Jakkula Anirudh
Assistant professor, Department of Informatics, University PG college (O.U.), Siddipet, Telangana.
Rajuri Indira
Lecturer, Department of English, Govt. Degree College for Women, Siddipet,Telangana,
Munja Lingamurthy
Lecturer, Department of Economics, Govt. Degree College for Women, Siddipet,Telangana

Abstract

Artificial Intelligence is changing the plans we teach English. It is introducing ways of learning like smart systems that can use to each student and automated tests. Artificial Intelligence is rapidly changing English Language Teaching giving us guide to help students learn test them and keep them engaged. Artificial Intelligence is getting better and better. It is being used more and more in education. This is especially truth for language learning because Artificial Intelligence can be personalized to each student and it can be used by a lot of people. We can see how useful Artificial Intelligence is when we look at language learning tools like Grammarly, Duolingo or Babbel. These tools use people learn languages by giving them feedback right away and by changing to fit their needs. Research shows that these tools can really help people develop languages because they can give different way to each student. We still do not know what will happen to students in the long run. Artificial Intelligence is going to change the plans we teach English. We need to be careful, about how we use it. Teachers are still very important. Artificial Intelligence should be used to help them not replace them.

We need to think about the moral values of using Artificial Intelligence. We need to make confident that teachers know how to use it. We also require to work to make sure that Artificial Intelligence helps everyone learn, not just some people. This study looks at how Artificial Intelligence's used in education and how it is modification the way we teach English. It looks at how Artificial Intelligence can help students learn on their self and how it can help teachers.

The study found that Artificial Intelligence can really help students learn words and it can give them personalized feedback. It also found that we need to be careful because Artificial Intelligence can make students less engaged and it can make everything seem the same. We need to make sure that people are involved in the process so that we can avoid these problems. Artificial Intelligence is a tool and it can be very helpful but we need to use it wisely.

Key words: Artificial Intelligence, English language, pedagogy, Teachers, ELT, language learning,

1. Introduction

The integration of AI into education has accelerated in recent years, with language learning emerging as one of its most promising applications. English, as a global lingua franca, is particularly impacted by AI-driven innovations such as intelligent tutoring systems, automated writing evaluation, and conversational chatbots. While these technologies offer unprecedented opportunities, they also raise questions about pedagogy, ethics, and equity. This paper explores how AI can reshape English language pedagogy and what lies ahead for educators and learners. AI technologies such as natural language processing (NLP), machine learning, and speech recognition are increasingly embedded in language learning platforms. English language pedagogy is undergoing a paradigm shift from teacher- centred to learner-centred approaches, with AI enabling personalization and scalability. The central question: How can AI transform ELT while preserving pedagogical integrity and inclusivity?

2. Statement of the problem

AI brings exciting opportunity to English Language Teaching personalized lessons, instant feedback, all that mind stuff. But there's a real gap between these flashy tools and the way teachers really teach. Old-school methods focus on people talking to people, picking up skills over time. AI, on the other hand, tends to crank out quick, automated results. If nobody steps back to rethink the teaching model, teachers end up just using AI as a fancy shortcut. That's risky. Students' capability loses out on real critical thinking, their own voices, and a deeper grasp of language.

3. Literature Review

I. Personalization vs. Standardization: Recent studies (e.g., Alharbi, 2025) suggest AI helps bridge the "digital divide" by providing 24/7 tutoring, yet risks enforcing a "Standard English" bias that ignores regional dialects.

II. The Teacher's Role: The teacher is evolving from a knowledge provider to a learning architect and ethical gatekeeper (UNESCO, 2024 Guidelines).

III. Cognitive Demands: Research indicates that "outsourcing" lower-level cognitive tasks (grammar checking) allows students to focus on higher-level discourse, provided they are not over-reliant on the tool.

4. Methodology

This paper adopts a **qualitative review approach**, synthesizing findings from:

I. Objectives:

The primary objective of this study is to the efficacy investigation and AI-driven tools in the English classroom. These are the specific objectives are followed:

1. To Examine the of AI in Skill Efficacy-Specific Pedagogy.

2. To Assess the Key AI Tools and Their Classroom Applications.
3. To Identify Challenges of AI in ELT, and Opportunities of AI in ELT.

II. Hypotheses:

The following hypotheses are framed, based on the trends:

H1: The integration of AI tools in ELT significantly improves student performance.

H2: The use of specialized AI teaching assistants and generative platforms in the classroom increases the frequency of differentiated instruction,

H3: AI-driven opportunities, specifically immersive chatbots and adaptive platforms.

H4: Hybrid pedagogy (AI + human instruction) yields better outcomes than AI only or traditional approaches.

III. Data Sources

Since you are not interviewing people, your "participants" are the documents themselves. The data set will include:

1. **Academic Journals:** Analysing recent findings on AI's impact on writing, speaking, and reading skills.
2. **Global Policy Frameworks:** Analysing the **UNESCO AI Competency Frameworks (2025)** and **British Council AI Guidance (2026)** to understand institutional directions.
3. **EdTech Trends:** Reviewing the roadmaps of AI-native tools (e.g., ChatGPT-5, specialized ESL AI tutors like Sapere or Khanmigo)

4. Discussions and analysis:

Educational benefits of AI in ELT:

AI is shaking things up in English language teaching, especially when it comes to speaking, writing, and reading. You see it supporting teachers, helping students manage their own learning, and offering all sorts of new tools. Oddly enough, listening hasn't really gotten the same AI attention at least, not yet.

Key AI Tools for English Language Pedagogy

Sources of AI tools for English language pedagogy include generative text platforms (ChatGPT, Claude), specialized teaching assistants (MagicSchool AI, Eduaide.ai, Diffit), and writing aids (Grammarly, QuillBot). These tools facilitate lesson planning, create personalized learning materials, and provide automated feedback on writing and pronunciation for learners.

Content Generation & Planning:

- **Magic School AI & Eduaide.ai:** Create lesson plans, quizzes, and educational content quickly.
- **Diffit:** Generates tailored learning materials suitable for different proficiency levels.
- **Canva Magic Write:** Assists in creating visual, text-based content for lessons.

- **ChatGPT/Claude:** Used for generating text, brainstorming ideas, and creating conversational practice scenarios.

Speaking:

Let's talk about speaking. Pronunciation stands out as the main area where AI steps in. There are tons of programs out there now, all designed to help students get their pronunciation right. Take Liu and Hung's 2016 study with Taiwanese learners: they used AI to show pitch visually, like a spectrogram, and it really made a difference. Students improved their pronunciation and got better at intonation basically, their speech sounded more natural. Teaching methods for speaking have started changing too. AI acts as a conversation partner, a language coach, even a kind of multimedia tutor. Dizon and Tang (2020) had students chat with Alexa, Amazon's voice assistant. Turns out, it got students talking in a way that actually mattered, helped them pick up new words, and made learning more fun.

Other research highlights AI coaches that adapt to each student like in Shivakumar and colleagues' 2019 study with university students. Here, the AI paid attention to each learner's habits and gave feedback tailored just for them. The result? Students spoke more often and used correct language structures. AI also pops up in speech recognition, adaptive learning, automatic speech analysis, and voice assistants. Kazu and Kuvvetli (2023) designed an AI pronunciation tool for Turkish learners. With this system, students could practice, record themselves, and get immediate feedback. It didn't just boost their pronunciation it actually helped them remember new words for longer and nail those tricky consonant and vowel sounds.

- **Speaking, Listening & Pronunciation:**
  - **ELSA Speak:** Focuses on improving pronunciation.
  - **Speechling:** Provides AI-powered feedback on speaking.
  - **Talk Pal AI:** A chatbot designed for conversational practice.
  - **Gaston.live:** Extracts transcripts and creates exercises from YouTube videos.

These tools are widely used to save preparation time, allow for differentiation, and offer immediate feedback to students.

Writing:

People use AI in writing mostly for learning new vocabulary and improving grammar. Take Lo (2023), for example she found that when learners had access to neural machine translation programs, their vocabulary got better, especially with words that were either really specific or had only one clear meaning. Another big way folks use AI in writing is through grammar checkers. Dizon and Gayed (2021) ran a study in higher education and saw that students using Grammarly, an AI-powered tool, made fewer grammar mistakes and used a wider range of words than those who didn't use it. When it comes to teaching writing, AI mostly steps in to help give feedback. Most research about teaching writing connects AI tools with feedback, usually through spelling and grammar checkers just like in Dizon and Gayed's Grammarly study. Nazari and colleagues (2021) also looked at Grammarly, this time

focusing on English language learners. They found that using Grammarly led to better engagement students paid more attention, felt more involved, and started thinking more about their writing. They also noticed that students became a bit more humble or self-aware in their writing process.

People have tried out all sorts of AI tools to help with writing grammar checkers, writing assistants, translation tools, even pattern checkers. Chon and co-authors (2021) explored how South Korean college students used machine translation as a reference for second-language writing. They discovered that Google Translate helped less-skilled learners write at a level similar to their more skilled peers. Plus, it pushed students to use more complex, less common words and build sentences with better structure.

- **Writing & Grammar Assistance:**
  - **Grammarly:** Analyzes grammar, spelling, and style.
  - **QuillBot:** Aids in paraphrasing and summarizing text.
  - **Pro Writing Aid:** Provides comprehensive writing feedback.

Reading:

Some research used AI to help with reading skills, but honestly, most studies focused way more on speaking and writing. When it came to reading, vocabulary stood out as the main area where AI played a role. Gaming was really the only specific method researchers used to support teaching reading with AI. Take Zheng and his team back in 2015 they looked at how people pick up new words while playing English-language quests in World of Warcraft. Their results show that games give learners chances to pick up vocabulary and really get what words mean, in ways that regular classrooms or textbooks just can't match. That's because games like WoW put words into real situations, not just lists or drills. AI makes this possible by adding computer-controlled characters and smart navigation systems that keep the game world lively and interesting.

- **Adaptive Reading Platforms:**
  - **Read Theory:** Provides adaptive reading passages and comprehension quizzes that automatically adjust to a student's ability.
  - **Curipod:** Creates interactive, AI-driven lessons that encourage engagement with reading material.
- **Vocabulary & Comprehension Tools:**
  - **Quizlet:** Utilizes AI for flashcards, vocabulary games, and testing.
  - **Wordwall:** Generates interactive,, gamified reading and vocabulary activities.
  - **Perplexity AI:** Summarizes complex or long texts to help students grasp key messages.
- **Comprehensive Teacher Assistant Platforms:**
  - **Teachmate:** Offers multiple AI-powered tools to assist educators with lesson preparation and content creation.

- **SchoolAI:** A comprehensive platform for creating interactive AI experiences.

Pedagogy:

When we talk about methods, strategies, and techniques in ELT, we're really looking at how teachers help people learn English. Even with all the new tech popping up, old-school stuff like lectures and explanations still sticks around. Some researchers have tried mixing things up to give students a more personal learning experience. Kim (2022), for example, looked at how score predictions, lectures, explanations, and practice tests affect Korean students prepping for the TOEIC exam. Students started with a diagnostic test, and then the AI used their results to give them lectures, explanations, and practice tests that matched their level. Lee and colleagues (2023) took a different route. They explored something called a learner-generated-context-based (LGC) approach. Basically, LGC means students use digital tech to create their own learning environment. As students interact with the system making choices and taking actions it gathers data and then adapts, offering content that fits what each student likes and needs. The researchers found that this LGC AI-powered method helped students become more independent and take control of their own learning.

- **Interactive Learning & Assessment:**
  - **Quizlet:** Uses AI for flashcards, games, and tests.
  - **Wordwall:** Generates interactive, customized games.
  - **Curipod:** Creates interactive, AI-powered lessons.
  - **Grade Scope:** Automates grading and analyzes student performance.

Self-regulation:

Emotions shape the way learners make choices and act. A bunch of studies in our review looked at how AI can help people manage themselves how they think, feel, act, and even how their bodies react so they can hit their own goals and feel good about learning. What's interesting is, when learners get involved in thinking about what they want and how they learn, especially with help from AI, they start to take the lead. More and more, AI is helping learners set their own goals and become more independent. Take Hew and his team (2023), for example. They used chatbots in English language teaching to help students set goals and feel more connected during online classes. The chatbots made it easier for learners to figure out what they wanted, come up with ways to achieve it, and understand how to set goals in the first place. Another study by Chen, Hsu, and colleagues (2022) mixed AI and virtual reality with robots to train English tour guides. The robots weren't just fancy tools the learners actually started feeling more independent because of them. The study found that people felt more motivated, engaged, and in control of their own learning.

some researchers also tried using AI to tackle anxiety, especially that nervous feeling people get about learning English like speaking in public, messing up words, or talking to others. Chen, Koong, and their team (2022) found that using an AI speech recognition tool with fifth graders in Taiwan took the edge off their anxiety. Both

Çakmak (2022) and Chen, Koong, et al. (2022) saw the same thing: AI tools not only boosted learners' skills, but they also helped calm their nerves.

Challenges of AI in ELT:

Honestly, the research we looked at talked way more about the benefits of AI in English language teaching than the problems or risks. But when people did mention challenges, four big ones kept coming up. First, there were the classic tech issues—things just not working right, bad internet connections, or the AI giving wrong answers. That sort of thing throws people off. Then, there's the problem of limited features. Some learners wanted smarter chatbots or more natural conversations, but the AI just didn't deliver. Because of that, people lost interest pretty quickly. Fear was another big factor. Some folks worried about what would happen to their personal data, or they just didn't understand how the AI worked at all. Others felt uneasy about losing the human side of learning—real emotions and genuine classroom vibes.

And finally, the whole standardization thing really stood out. A lot of people talked about how AI tends to push one "correct" version of language, ignoring all the messy, real-life variations. For example, in Rowe's study of a second-grade classroom, Google Translate didn't even have Tagalog as an option just Filipino. That left one student wondering who gets to decide what counts as a real language and which version is right. It's not just a technical issue; it's about history, politics, and identity too. When tools like Google Translate only recognize some languages or versions, they end up reinforcing certain standards and leaving others out.

Opportunities of AI in ELT

- **Personalized Learning**: Adaptive platforms tailor vocabulary, grammar, and pronunciation exercises to individual learner needs.
- **Automated Feedback**: AI-driven writing assistants provide instant grammar and style corrections, enhancing learner autonomy.
- **Immersive Learning**: Chatbots and virtual tutors simulate real-life conversations, improving fluency and confidence.
- **Data-Driven Insights**: Learning analytics help teachers identify struggling students and adjust instruction accordingly.
- **Accessibility**: AI tools can support learners with disabilities (e.g., speech recognition for dyslexic students).

5. Challenges

- **Pedagogical Concerns**: Over-reliance on AI may reduce human interaction, which is vital for language acquisition.
- **Ethical Issues**: Data privacy, algorithmic bias, and unequal access to AI tools pose risks.
- **Teacher Readiness**: Many educators lack training in AI literacy, limiting effective integration.
- **Infrastructure Gaps**: Developing countries face challenges in connectivity, affordability, and technical support.

- **Cultural Sensitivity**: AI systems may fail to capture nuances of local contexts, idioms, and cultural references.

6. Future Directions

- **Hybrid Pedagogy**: Combining AI tools with human instruction to balance personalization and social interaction.
- **Teacher Training**: Professional development programs focusing on AI literacy, data ethics, and adaptive teaching strategies.
- **Policy Frameworks**: Governments and institutions must establish guidelines for ethical AI use in education.
- **Collaborative AI**: Systems designed to augment rather than replace teachers, fostering co-teaching models.
- **Research Expansion**: Longitudinal studies on AI's impact on language proficiency, motivation, and equity.

7. Conclusion:

AI is not a replacement for teachers but a powerful ally in transforming English language pedagogy. The road ahead requires careful navigation of ethical, pedagogical, and infrastructural challenges. With thoughtful integration, AI can democratize access to quality language education and prepare learners for a globalized future. AI is poised to revolutionize English language pedagogy, but its success depends on thoughtful integration. Teachers remain central to the learning process, with AI serving as a supportive tool. Ethical frameworks, infrastructure development, and teacher training are critical to ensuring that AI enhances rather than disrupts language education. The road ahead requires collaboration among educators, policymakers, and technologists to create inclusive, equitable, and effective learning environments.

AI is a powerful ally in transforming English language pedagogy. Its success depends on balancing technological innovation with human interaction, ensuring ethical use, and addressing infrastructural gaps. The road ahead requires collaboration among educators, policymakers, and technologists to create inclusive and effective learning environments.

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Transforming English Language Teaching With AI:Challenges, Opportunities and Future Directions

1.K Gouthami
Assistant professor in English,JNTU, Jagityal.
2.M.Shilpa
DL in English,Mahatma jyothiba phule degree college for women, WARGAL.

Abstract:

Language Teaching and learning originated from "Silent way"to Computer assisted learning (CALL)integrates classical methods to the most modern tools paralysing Human emotional relationships and primary bonding with our most effective mode of communication .This second language tongue borrowed our natural speech and institutionalised a proficient foreign parenteism to our primitive yet most sophisticated beings .Hence I would like to call our humanoids—Sophisticated being of excellence driven by automated horsesand hybernated appliances in the form of electronic "CATS"operated with a highly expensive remote control system in the form of "English Language"

AI has taught us the Skills to master our communication and pronunciation with technological advancements as a mode or communication partner yet the pedagogy and speech developed in multimodal forms can also be self regulatory.Technology automated speech analysis as a grammar checker or vocabulary gamer.Goalsetting,Anxiety and pattern checker as a language technique modified our thought process.But this digital translators,lectures and assessment techniques regulate our creativity and intellect to a large extent .it is robotic and mimetic.India in the future generations to come would be a stolen bird without wings and a golden pot without a brim.George orwell in 1984 would have dreamt about individuality in thinking .Noam Chomsky must have written about Communicative approach.And Jack C Richards differentiates approach,method and technique in his book.Now generations have changed its definition of knowledge with the modern system of this skeleton with a vibrated soul that is "Evergreen"and can be "Limitless"and "Inexhaustible".The Language "Sutures"will never be stitched nor mended.The language absorbed and assimilated within the self and outside is the energy generated in and out.The input and output thus included or obtained in unquatifying manner spreading its wings are myriad and intense.the adaptability and gravity of the language is abundant and evident as an untold tale.Finally I would like to conclude stating that Language learning shall be implicitly exploited according to the future endeavours highlighting the benefits of AI rather than focusing on the contextual information to meet the challenges or overcome the pitfalls of language learning.

Introduction:

The Modern Advancements in teaching, learning and methods in Pedagogy and Curriculum simulated and directed the Mode of communication to a different levelof understanding a particular concept. Yet the deep understanding,High student engagement and self-correction learnt during the study can be put into practice by adopting the silent way of teaching and learning.This method developed in the 60's is relevant in building Vocabulary,Pair work or collaborative activity and also in Problem solving.

Learners can get a focused learning experience who really own the learning process.This unconventional teaching method replaces the traditional methods from the age old Grammar translation methods to the communicative approach by Noam Chomsky. D.A .Wilkins and Michael Halliday developed the concept of Communicative approach that was later developed by Noam Chomsky based on the concept of purely grammatical competence while D.A.Wilkins worked on its functions.

Mostly it elaborated on "Practical application of authentic materials". Although several methods introduced new language items,Vocabulary and the structures ,real life contexts or scenarios. Its oral transmission of language that is emphasised and practised from ages hence. Situational approach,Play way method, Task based learning cannot be ignored nor reduced in its influence and learning experience. All these methods use environment to create speech and dialogue.Learning can be interactive only with students motivation of contextual learning ,memorising and Comprehension abilities.

Its functional usage and application in real life situations mobilise the learning process from habit formation to regular communication.Communication has already transformed or automated from simple to simplest mode in the modern humanoid era.Interactive and AI driven modules for teaching learning improved the Content,Speaking ,Grammar ,Visual aids,Pronunciation and also the feedback process.The biographies have now turned to Infographies where visual aids increase and boost vocabulary skills along with analytical reasoning.

Students focus mainly on acquisition of knowledge rather than the productivity of the curriculum ,pedagogy on the productivity of the curriculum ,pedagogy and contextual understanding.It is a teacher who installs all the zeal,enthusiasm and decorum of speech so that every student exhibits his/her hidden talents in a large measure .To a great extent ,learning happens instantly and is readymade. Its full of mistakes and corrections

Due to the advent of machines to E-books ,learning as turned out to be a wild goose chase .A person who has the ability to listen cannot possibly perform in reading nor any exam or interview.A person who writes well cannot speak fluently.There is a huge gap between these skills and its application .Therefore those who speak fluently just focus on mongrelising the language and spoil its beauty by throwing words and use improper English that creates confusion among the listeners and also speakers sometimes.How can teaching learning English help a foreign speaker acquire more knowledge where there is no proper dealing ,progress nor independence to speak the way they would like to communicate in?Yet it is often misunderstood and misinterpreted by many people. English language is marked not only as a global language but now it acts as human machine language categorised according to its usage and learning.it can be classified into three main learning types:

1.Conscious learning
2.Programmed learning
3.Unconscious learning

Conscious learning is the acquisition of grammatical knowledge of a particular concept. Communication skills can also be mastered through methodical study that require conscious efforts of involvement and inculcation of rules and explicit instruction skills inorder to be comprehensible and formal in nature.

When we have to deal with language acquisition and its intuition it must be done I an interactive mode.it does not require a conscious effort or any formal instruction. Yet the child or a student is exposed to a particular situation or context where grammar and rules become minimal. Both the methods of learning assist in developing the communicative competence.

In aParellel process we have AI mode of acquiring linguistic environment which is predominant in natural process of acquiring knowledge predominantly in speech and thought using Presentations, short videos, documentaries and other modes of communication.

Personalization stands as the cornerstone of AI's revolutionary impact on language education. Advanced AI algorithms now possess the sophisticated capability to conduct granular analyses of individual learner performance, identifying specific linguistic strengths, developmental areas, and unique cognitive learning patterns. Platforms like Duolingo, ELSA Speak, and Carnegie Learning leverage machine learning algorithms to dynamically track learner progress, generating real-time adaptive exercise sequences that respond to individual learning trajectories (Huang & Chen, 2021). The adaptive learning approach transcends traditional one-size-fits-all educational models, offering a nuanced, individualized learning experience. By continuously analyzing learner interactions, performance metrics, and cognitive responses, these intelligent systems create personalized learning pathways that optimize linguistic skill development . Technological advancements in Natural

Language Processing (NLP) have dramatically transformed pronunciation training and linguistic skill development. AIdriven speech recognition technologies, including Google Speech-to-Text, ELSA Speak, and advanced pronunciation assessment tools, provide learners with unprecedented opportunities for linguistic refinement (Wang et al., 2022). These sophisticated systems employ advanced acoustic modeling and machine learning algorithms to analyze speech patterns with extraordinary precision. By comparing learner pronunciations against extensive linguistic databases, these tools offer detailed, contextually relevant feedback on pronunciation accuracy, intonation, and phonetic nuances

The emergence of AI-powered assessment technologies has fundamentally reimagined language evaluation methodologies. Platforms such as Grammarly, Write & Improve, and intelligent writing assessment systems utilize sophisticated natural language processing algorithms to provide comprehensive, instantaneous feedback on written linguistic performance. These intelligent systems offer more than traditional error identification. They provide contextually nuanced suggestions, explain grammatical rationales, and guide learners through self-revision processes. By promoting autonomous learning and providing immediate, constructive feedback, these technologies enhance learners' metalinguistic awareness and self-correction capabilities. Gamification, powered by AI technologies, has emerged as a transformative approach to language learning motivation.

English language has been flexible and adapted to every environment .people also welcomed it as a Lingua franca .A Language that taught everyman a way to be independent and creative in his own domain and to practise English as a mode of communication for generations to come.Every language has primary skill that shapes an idea to a context and froma context to a situation relevant in its atmosphere and manner.Listening,speaking,reading and writing are the fundamental skills of learning a particular language .These skills also define a person’s perspective,creativity,talent and understanding of a new language. English language enlarged its wings from smaller to bigger now finer to the finest with the development of technology ,media and AI applications.

Curriculum and pedagogy enters into a transformative landscape of evolving into a personalised learning mode that can be defined as ‘Educational technology’. Plunging into the emerging technologies and AI in education, analytics reshape the role of learners and educators. Critical thinkingandDesign thinking highlights self regulated authentic and promotes multimedia driven acquisition of knowledge and creativity that emphasises the role of open educational resources.

Design Flexible learning:

An innovative mode of learning developed in various parts of the world where teaching involves myriad formats like short videos, interactive activities and videos

telecasting texts and learning materials that ensure shared learning outcomes and framing a meaningful assessment for all students.

Co creative learning:

The accessibility of Generative AI tools for multi-modal AI,Synthetic audio vide translation,Story creation automation and AI assisted editing and also how media helps in higher education system.Media transformed the content co-creating themeswith AI reshaping creativity assessment,authorship,pedagogical roles and academic teaching and learning.

Co-designing ends user involvement thus learners need digital literacy.Media studies explores predictor's connections to learning experience ,achievement goals .Thie methodology used in EFL lear =ning t?This study aims to address the students abitities.Though lines of sstudents learn the concepts pertaining to Linear regression and psychological analysis.

Thus language learning has become entertaining and more enthusiastic with the introduction ofAI.The integration of Artificial Intelligence (AI) in English Language Teaching represents a profound technological transformation that simultaneously offers unprecedented opportunities and presents significant challenges. As we stand at the intersection of technological innovation and educational practice, it becomes crucial to develop a nuanced, critically reflective approach to AI implementation in language education. However, the promise of AI is inextricably linked with complex ethical considerations and potential limitations. Data privacy concerns, algorithmic biases, and the risk of technological over-dependence represent significant challenges that cannot be overlooked. The fundamental nature of language learning as a deeplysocial, contextually rich process means that AI technologies must be viewed as supportive tools rather than complete replacements for human interaction and pedagogical expertise. Future research must continue to explore the long-term implications of AI in language education, investigating its impact on communication skills, learning outcomes, and the broader sociolinguistic landscape. This will require longitudinal studies, interdisciplinary research, and a commitment to understanding the complex interactions between human learners and intelligent technologies. The journey of AI in English Language Teaching is just beginning. By adopting a critical, reflective, and innovative approach, we can harness the transformative potential of these technologies while mitigating their potential risks. The goal is not to replace human educators or traditional learning methodologies but to create enhanced, more personalized, and more accessible language learning experiences. Ultimately, the most successful AI-driven language education will be characterized by its ability to augment, not replace, human intelligence. It will be a collaborative ecosystem that respects the complexity of language, the diversity of human communication, and the fundamental social nature of learning.. Technological disruption in language learning: The rise of AI-driven pedagogies.

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Technology and Its Role in Shaping Human Life

M Jyothi
Dl in English
TGSWRDC(W),Sangareddy ,Budhera.

Abstract:

Technology metamorphosized the structure of learning reshaping the challenging traditional and cultural practises contributing to the technological determinism. It curated human interests creating influences, opinions, entertainment, consumer decisions, Health care automated tools, social behaviour and cultural diffusion. Pondering over the historical past on how communication got revolutionised the millennium, beginning with the broadcasting tools in 1900s to determining Future of AI in 2060s raises the disparities and states the potential of Cybercultures .It is otherwise the replication of real world inequalities ,Interpreting Inclusivity ,Innovation and transformation of Cultural practices.AI provides information about a person's preferences ,privacy and promotes confidence turning us aware of maintaining a balance in Life experiences and preserving AI navigated power to maintain authenticity, embrace Innovation over privileges from mainstream narratives to grassroot movements.it is constantly evolving and its adaptation enables transformation and also mutual shaping.

Introduction:

Digital communities exemplify how the technology facilitates creation of cohesive social groups even without the physical proximity.Globalisation,Mediaarcheology ,socialstructures ,Powerdynamics,Ethical concerns, Digital communication propelled cultural advancements altered dynamics of cultural interaction and exchange. Hybridisation led to the emergence of unique cultural expressions in various fields including Music, Fashion,and cuisine.The technological advancement in the world shook the nation enabling a transition from communication to the modern Quantum computing to metaverse virtual reality interfaces that govern the self -driving vehicles beyond the Energy .Is it the revolution of Audio broadcasting that began the world of gadgets that brought unprecedented global communication fostering cultural enrichment and connectivity? The cultural diffusion along with the digital divide developed new social structures and Power dynamics. Ever since the innovation commenced in the field of technology, many wings like Aviation, simplified clothing and E-Commerce transformed human attitude and outlook towards life and changed the behaviour too drastically. Contributing to the Actor Network theory this act shaped human agency in cultural processes challenging traditional understanding of cultural and technological determinism.

How did the integration of new technology influence the cultural semiotics is the subject of concern now.The historical technology that shaped the past cultures influenced the narrative of digital technologies on culture.Though the use of computers, Microwave oven, Transistors, Credit cards and television and other integrated circuits brought about a standardised or changed lifestyle,it is the nuclear power that stood as a weapon and inspired countries revising our profession to visionary level. The intellectual advancements often got replaced with the technology .we cannot at all ignore the Moon landing. the laser treatments the first mail sent around the 1970's that strongly established a connection of the human kind with the science and medical professionals and furthermore it build the relationship as a blockchain model to drive modern man from traditional mode to hybridity with the time.However, lifestyle became an electronic instrument with the application, usage and advent of Smartphone in Hand. It produced a new initiative and generated a new angle for every single activity.Transition from Communication to commodification happened with the increased demand for the so called 'SMART PHONE' .It is not only SMART but very Start of professional, psychological and Financial mobility and security in a way for a person's very special lifestyles living away from families and regular contacts.Moreover,it is quite productive to unemployed,popularity more than a World wide web. The indigenous inhabitants seeking cultural unity is the study to define the dominance of culturally powerful nations led to the marginalisation of less dominant cultural practices.

Moreover,the relationships between technological artifacts,cultural practices ,Human actors and cultural practices collaborate both technology and culture leading to the transformation of cultural meanings and behaviour. Technology is not a device to shape human agency but an activemember in cultural processes.It challenges the traditional understanding of technological determinism. Social media platforms often louden the hegemonic narratives conceal indigenous voice and traditions.Digital platforms exclude communities to share their narratives and traditions. Commercialisation of cultural symbols deal with ethical concerns about appropriation and commodification of heritage.

Technology exemplifiesart,music and social activism and it transforms the education,learning,reasoning, problem solving,interacting with the environment.It also changes the world of teaching with the use of AI tools,Generating the content-Translating the content and organize the content, Language learning support strategies-Designing a content.The use of language models in application, voice applications, cognitive chatbots that comprehend contexts and conversation,the automatic business processes with AI,Use of deep reinforcement learning etc redefine the progress of teaching and learning using the technological advancements in the modern era.If we delve into the language and its development we get to understand

the interconnectivity of the technology right from audio broadcasting to the modern humanoids .A hypothesis put forward by Professor Joseph Greenberg and his colleagues (Stanford University) holds that the original mother language developed in Africa among early Homo sapiens. Their 'Proto World' map would show how Homo sapiens spread across the world, taking their language with them. That single language, which the Professor calls the Mother Tongue or proto-world, diverged naturally over time into the several thousands of diverse forms spoken today.Did the technology change the reality?Where does the advancement begin?Let us plunge into the origin,history and development of AI 1941-Firstelectronic computer is introduced1956-The term artificial intelligence is introduced1960's-Checkers playing program1980's-Quality control system2000-First sophisticated walking robot. AI wishes to change Language acquisition,comprehension and fluency.Enhanced engagement and personalized learning,Three tier Equity, redefining tool to communicate, enhancing writing with small assistance, real time translations, Personalized learning, Immediate feedback, and ImprovedAccessibility. In the Contemporary world,the mode of communication transformed completely from written and oral to digitalised and analogtools which now came to be called as a wireless communication.this act revitalised human existence in a new world with novelle approach..Technology operates as a profound dual force. It stands as a powerful instrument that not only uplifts human capability, yet it constantly alters our most fundamental behaviors and interactions.The consequences of this shift touch every corner of our routines. It brought about a change in the five critical areas..It highlights the death of distance in communication, the rise of the borderless office, and the massive democratization of education. Furthermore, it outlines how connected devices optimize health and daily convenience, before addressing the complex psychological hurdles we now face.

The novelle Communication-The new social change

The way people interact with one another has undergone a profound transformation. Communication used to rely heavily on physical proximity and slow-moving correspondence.Today, technology provides instant connectivity across the globe. This shift touches every aspect of social interaction, altering how people build communities, maintain ties, and form romantic attachments.

The Frontier:

Historically, staying in touch with distant friends or international colleagues required patience. Sending physical letters took days or weeks, and making long-distance landline calls was often prohibitively expensive.Instant global messaging and video conferencing applications completely erased these traditional barriers. People can now see the faces of family members halfway across the world in high definition and in real time.This immediate access collapses geographical boundaries, making the distance between continents feel trivial. The ability to communicate without delay reshaped global commerce and allowed families divided by oceans to maintain close daily contact.

The transformation ofsocial media platforms-Virtual networking

Communities were once defined exclusively by changing the streets, local clubs, and nearby gathering places. Social media platforms shifted this dynamic by creating borderless virtual networks.These platforms act as digital town squares where millions of users share opinions, news, and personal updates simultaneously. Individuals who share highly specific interests or niche hobbies can easily find communities online, bypassing the geographical limits of their physical hometowns.These vast networks allow people to build entire social circles without ever meeting face-to-face.

Interpersonal relationships:

Digital tools altered the fundamental mechanics of interpersonal relationships. Dating applications introduced unprecedented convenience, allowing individuals to swipe through thousands of potential matches rather than relying on chance encounters at local venues.

Friendships are now frequently maintained through a steady stream of text messages, shared images, and voice notes. Even family interactions changed significantly, with group chats serving as constant hubs for daily updates.While these tools offer constant connection, they also require people to manage new social expectations regarding response times and digital etiquette.

Official networks-The scenario

The methods and environments associated with earning a living experienced massive shift alongside communication technology. Corporate structures and traditional nine-to-five office routines gave way to flexible, technology-driven paradigms.Software solutions and internet connectivity completely redefined what a workplace looks like and how business operations function on a daily basis.The traditional requirement of physical presence in a corporate building is no longer an absolute necessity. High-speed internet and cloud collaboration software enabled the massive expansion of remote work. Employees can access shared documents, participate in strategy meetings, and complete complex projects from their own living rooms or co-working spaces. This technological capability birthed hybrid corporate environments, allowing companies to hire talent globally without the constraints of local geography. Institutions can now operate continuously across multiple time zones, fundamentally altering the standard workday structure.Beyond merely changing where people work, technology drastically changed how work gets done. Advanced software and artificial intelligence currently handle a massive array of tasks that previously required extensive manual labour.

Conclusion:

The modern technological advancements swayed the world of communication, altered the regulations of the education system and Information Transfer.Technology has become a powerful tool to revolutionalize the existing

routine,health,relationships,medicine and workplace.The richness of Digitalised world shook the masses beyond AI and its adva

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English Language Teaching in the Digital Age: Enhancing Teaching through AI Technology

Dr. M. Shankar
Asst Professor of English
Govt. Degree College, Bhainsa.

Abstract

The twenty-first century has witnessed a rapid digital revolution that has reshaped education across the globe. Traditional teaching methods are gradually being replaced by technology enhanced-learning environments. English Language Teaching has experienced a major transformation due to the emergence of computers, the internet, mobile devices and Artificial Intelligence. This paper examines English Language Teaching through technology while emphasizing the importance of Teachers. Artificial Intelligence technology allows computer systems designed to perform tasks that require human intelligence such as understanding language, recognizing speech, making decisions, and learning from experience. AI is also one of the driving forces to facilitate the teaching and learning process in education. AI enhances the effectiveness of English language teaching and expands students' practice ability. Learners use their senses to practice English language learning skills depending upon their English proficiency level, professional needs or interests. The technology of AI offers opportunities to enhance English language skills. AI is already part of our daily lives through voice assistants like Alexa and Google Assistant as well as various tools and recommendation systems. AI tools can check grammar, evaluate pronunciation, generate exercises and adapt lessons according to the ability of the learner. An effective approach to English language teaching is to build collaboration between teachers and artificial intelligence. A comprehensive approach will ensure that technology improves education while preserving its human qualities. This research employs qualitative analysis of recent studies (2022–2025) and concludes that AI enhances traditional teaching instead of replacing it. Its effectiveness relies on the abilities of teachers, appropriate integration, and ethical practices. Although AI provides numerous opportunities, challenges necessitate a balanced approach, digital literacy, and well-defined policies. With careful implementation, AI has the potential to revolutionize English Language Teaching, and future studies should concentrate on outcomes, ethics, and the training of teachers.

Keywords: Artificial Intelligence, Digital, Technology, English Language Teaching.

Introduction

The twenty-first century has witnessed a rapid digital revolution that has reshaped education across the globe. The use of artificial intelligence, smart gadgets, and the internet in the classroom has changed traditional teaching techniques into interactive learner centered ones. Students can access knowledge at any time and from any location breaking the limits of time and place. Teachers adopted digital resources, online plot forms and virtual classrooms who help students to navigate a great amount of digital content rather than being the only source of knowledge in order to prepare the students for the needs of a knowledge-driven and technologically focused world. This transition has promoted collaboration, individualized learning and skill-based education.

Technology enhanced learning encourage interaction, flexibility, and learner autonomy are gradually replacing traditional teaching methods which were based on teacher dominated classrooms, rote memorization and chalk and talk memorization. Teaching has given more student-centered with the use of digital tools including learning management systems, smart boards, internet resources and educational apps. Outside of the traditional classroom, real-time communication, assignment sharing, and feedback are made possible by plot forms such as Google Classroom and Microsoft Teams. Online tests, virtual simulations and multimedia materials accommodate a variety of learning preferences and simplify difficult ideas. This change not only improves engagement and accessibility but also prepares students with twenty-first century digital literacy skills.

The rise of computers, the internet, mobile devices and artificial intelligence has significantly changed the way that English is taught. Dynamic tech-driven learning replaced traditional classroom methods that mostly depended on textbooks and whiteboard instruction. With the use of digital tools, educators can incorporate multimedia materials like podcasts, interactive tests, movies, and online dictionaries into their lessons, increasing student engagement and focus. Students can learn at any time and from any location with the help of plot foms like Duolingo and British Council which offer structured courses, pronunciation practice and real-time feedback.

Furthermore, artificial intelligence has completely transformed language learning by providing individualized teaching and adaptive learning experiences. AI powered Chatbots are driven by artificial intelligence, speech recognition software, and automated writing assessment tools assist students in improving their vocabulary, grammar and pronunciation with instant feedback. Mobile learning applications and virtual classrooms also encourage collaborative learning. As a result, English language teaching is more adaptable, inclusive and

responsive to the diverse requirements of students in the digital age.

This century has experienced remarkable technological progress that has transformed educational systems globally. English serves as a global lingua franca and plays a crucial role in communication, business, science, and diplomacy. As a result, English Language Teaching (ELT) has adapted to include digital resources that facilitate effective language learning. "Artificial Intelligence (AI), defined as computer systems capable of performing tasks that typically require human intelligence such as reasoning, learning, and problem-solving" (Russell & Norvig, 2020). Artificial intelligence becomes a game-changing element in the field of education. In language learning, AI enables engaging learning experiences, tailored teaching approaches, and automated feedback systems.

As noted by Holmes et al. (2022), "Artificial Intelligence in education presents opportunities to improve learning experiences by offering adaptive, personalized, and data- driven assistance to learners" (p. 45). In the realm of English Language Teaching (ELT), AI technologies enable learners to practice their speaking, writing, listening, and reading skills with greater efficiency and independence. This paper investigates how AI enhances ELT in the digital age, analyzing its applications, advantages, challenges, and prospective developments.

2. Literature Review

Recent studies emphasizes the significance of AI in English language Teaching. Research carried out from 2022 to 2025 indicates notable progress in AI-driven language learning resources and their instructional implications. A comprehensive analysis of 46 empirical studies discovered that AI has a moderate to substantial positive impact on language learning results, especially in vocabulary development and reading understanding. This indicates that AI tools can greatly improve learning efficiency. Studies also show that AI is commonly utilized to improve writing and speaking abilities. AI-driven writing tools offer grammar corrections, vocabulary enhancement, thus boosting learners' writing skills. The research indicates that AI presents many advantages, its success relies on appropriate execution and alignment with teaching methods.

3. Methodology

This study adopts a qualitative research methodology based on secondary data analysis. It involves reviewing and summarizing existing literature on AI in English Language Teaching.

4. Findings

The research follows a descriptive and analytical design focusing on understanding the function of AI in ELT. Data were gathered from peer reviewed Journals, conference papers and educational reports from 2022-2025. The research focuses on AI in ELT. Analysis of Data was used to examine key themes such as AI applications in ELT, advantages of AI integration, challenges and limitations for

English language teaching.

- Challenges Identified
- An excessive dependence on AI
- Absence of critical thinking
- Privacy and ethical issues
- Need for teacher training

5. Discussion

5.1 Evolution of English language Teaching in the Digital Era

Traditional approaches to English Language Teaching (ELT), such as the Grammar- Translation Method, Direct Method, and Audio-Lingual Method, focused predominantly on instructor-led instruction. Nevertheless, the introduction of Communicative Language Teaching (CLT) redirected attention towards interactive learning driven by the student. Communicative Language Teaching (CLT) is a method of language education that prioritizes communication as the main objective of learning. It centers on enhancing learners' ability to use the target language effectively and appropriately in real-world contexts. In contrast to conventional grammar- translation methods, CLT promotes interaction through pair work, group discussions, role- playing, and problem-solving activities.

The theory draws inspiration from linguists like Dell Hymes, who presented the idea of communicative competence, and Michael Halliday, who emphasized the practical application of language. In CLT classrooms, the teacher serves as a facilitator instead of a lecturer. Students engage actively, negotiate meaning, and practice using language authentically. This approach, which places the learner at the center, fosters improved fluency, confidence, and practical communication abilities.

With the rise of computers and online platforms, Computer-Assisted Language Learning (CALL) gained traction. As noted by Warschauer (1996), CALL transitioned from drill-based software grounded in behaviorism to models that emphasize communication and integration for authentic language usage. Currently, artificial intelligence (AI) signifies the next phase in this progression. In contrast to past digital tools, AI technologies can:

- Analyze learner data
- Adapt content in real-time
- Offer immediate feedback
- Simulate conversations akin to human interaction

This evolution signifies a move from fixed digital tools to intelligent, adaptive systems that tailor language learning experiences.

5.2 AI Technologies in English language Teaching

Intelligent Tutoring Systems use learner performance analysis and customized training to mimic one-on-one tutoring. These programs keep track of mistakes, spot trends, and recommend remedial activities. According to research, ITS can greatly enhance vocabulary memory and grammatical learning (Graesser et al., 2018). They emulate the advantages of targeted teacher attention by providing

prompt feedback. "Intelligent tutoring systems can approach the effectiveness of human tutoring under specific conditions," as VanLehn (2011) states (p. 197).

Learners can practice conversational English in a stress-free setting with the help of AI Chatbots. Many AI-based language applications are available for English teachers and learners. Some examples of AI technology that can be used to teach English include: Google Traslate, English Able, Orai, ELSA, Duolingo, Hello English etc., According to Fryer and Carpenter (2006), "Chatbots lower speaking anxiety and boost learner motivation." Before dealing with peers or teachers, many students feel better at ease experimenting with AI systems. Additionally, conversational AI facilitates pronunciation drills, giving students immediate access to remedial feedback.

Grammar, coherence, vocabulary, and organization are all examined by automated essay scoring systems. AES offers instantaneous formative input, despite its short comings."Automated scoring systems can serve as effective supplemental tools for writing instruction," according to Shermis & Burstein (2013) (p. 5). These resources support self-directed learning by encouraging students to edit drafts on their own.

Pronunciation training is improved by speech recognition software. AI finds phonetic errors and makes recommendations for corrections. Liakin et al. (2015) claims, "Speech recognition software increases learner confidence and pronunciation accuracy". In situations where instructor feedback is scarce, these approaches are very helpful. Learner performance is analyzed via adaptive systems, which then adjust the content. These programs customize reading passages, grammar drills, and vocabulary assignments. "AI-driven adaptive learning systems respond to individual learner needs in real time," according to Luckin et al. (2016) (p.18). This customization guarantees that challenging students receive extra help while advanced students are challenged.

5.3 Pedagogical Benefits of AI in ELT

AI's capacity to customize teaching is one of its biggest advantages. Diverse skill levels are frequently difficult to accommodate in traditional schools. By personalizing materials, AI systems close this gap. Learner engagement and retention are increased through personalized education. For language learning, prompt feedback is essential. In writing and speaking assignments, AI systems offer instantaneous corrections, enabling students to make quick adjustments. Quick feedback speeds up learning cycles and supports proper language use. AI encourages independent learning. AI-powered apps allow students to practice outside of the classroom. "Learner autonomy is central to be successful language acquisition," according to Benson (2011). By providing opportunities for individual practice, AI promotes this autonomy. AI platforms frequently include gamified features like

progress tracking, badges, and points. Gamification makes people more motivated. AI's text-to-speech and speech-to-text capabilities help children with specific needs. In ELT courses, this encourages diversity and accessibility.

Digital age reflects how education is evolving due to technology and digital culture. Learners from the digital generation are adept with technology, having grown up surrounded by smart phones, social media, and online platforms, which makes them at ease with multimedia and interactive learning tools. A digital learning environment includes smart classrooms, virtual platforms, AI resources, and online materials to encourage flexible and personalized education. Digital edutainment resources merge learning and entertainment through tools like videos, podcasts, gamified applications, and interactive simulations, boosting motivation and engagement. Equally crucial are the digital generation of educators, who embrace new technologies, utilize innovative teaching methods, and mentor students in responsible digital citizenship. Collectively, these components provide a vibrant, learner-focused education and environment that fosters creativity, collaboration, critical thinking, and lifelong learning in the twenty-first century.

5.4 Difficulties and Restrictions

AI cannot replace human empathy, cultural sensitivity, or sophisticated communication, despite its potential. The significance of emotional variables in language learning is emphasized by Krashen (1982). Human educators are essential for encouraging drive and self-assurance. AI systems gather a lot of learner data. Institutions need to guarantee transparency and ethical data management. "AI in education must be implemented responsibly to avoid bias and protect student privacy," caution Holmes et al. (2022). Not all students have equal access to devices and internet connectivity. Unequal access may widen educational disparities. Teachers might not have the technical know-how to properly incorporate AI. Adoption success depends on professional development programs.

5.5 Teachers' Function in AI-Enhanced Classrooms

In a classroom enhanced by AI, teachers' roles become more significant and dynamic. Artificial Intelligence does not substitute for teachers; rather, it complements and enriches their efforts. Educators continue to serve as facilitators of learning, mentors who motivate development, and emotional supporters who recognize students' unique needs. Although AI can offer immediate feedback and tailored practice, it cannot mimic human compassion, encouragement, or ethical guidance. As Selwyn (2019) appropriately notes, "AI should enhance rather than replace teaching." Teachers are essential in analyzing AI-generated information, crafting innovative and impactful classroom activities, and ensuring the ethical and responsible use of technology. In the end, the human element remains vital to successful education, even in advanced technological settings.

Since education is essentially a human-centered activity, artificial

intelligence should complement teaching rather than replace it. AI can deliver data-driven insights, individualized learning paths, and immediate feedback, but it cannot replace teachers' moral direction, emotional intelligence, and empathy. Teachers have a deeper understanding of kids' unique requirements, cultural backgrounds, and learning difficulties than machines do. By helping with grading, content distribution, and learning gap identification, AI systems can lighten teachers' workloads and free them up to concentrate on meaningful interaction, creativity, and mentorship. Technology becomes a helpful ally rather than a replacement in an AI-enhanced classroom. The actual power of education is found in fusing technical innovation with human intelligence to keep learning interesting, morally sound, and closely related to real-world situations.

5.6 Future Directions

The potential of Artificial Intelligence in English Language Teaching (ELT) is vast, promising to revolutionize teaching methodologies and learning experiences. AI-enabled virtual reality is anticipated to create engaging language environments where students can practice authentic communication in simulated scenarios such as airports, classrooms, markets, or global conferences. This type of experiential education can greatly improve fluency, boost confidence, and enhance cultural understanding. Emotion-aware AI systems represent another developing innovation, with the ability to recognize students' emotions, levels of engagement, and frustration through vocal and facial expressions, thereby personalizing instruction to offer tailored encouragement and assistance. Furthermore, multilingual AI tutors will help close language gaps by providing explanations and feedback in students' first languages while gradually leading them to greater proficiency in English. Lastly, hybrid teaching models that integrate human and AI elements will combine emotional understanding, creativity, and ethical considerations in the learning process.

Moreover, blended teaching approaches that integrate both human and AI elements will merge the compassion, inventiveness, and moral discernment of educators with the effectiveness, analytical abilities, and immediate feedback capabilities of AI resources. Nevertheless, ongoing research and strategic policy development are crucial to enhance these technologies, tackle ethical issues, safeguard data privacy, and guarantee fair access for students in rural and marginalized communities, thus ensuring that AI-enhanced English Language Teaching is inclusive, effective, and sustainable.

Conclusion

English language instruction has been completely transformed by the digital age thanks to the incorporation of artificial intelligence technologies. AI improves assessment, learner autonomy, engagement, and personalization. Even with ongoing issues like digital inequality and ethical dilemmas, AI is still a potent tool for enhancing ELT results, but rather than taking the role of human educators, AI should

be seen as a helpful ally. For the best learning outcomes, a well-rounded strategy that combines pedagogical knowledge with technology innovation is used. To sum up, AI is more than a technological advancement; it is a pedagogical revolution that will influence English language teaching in the future.

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Ethics and A.I. Literacy

V Rakesh
Lecturer In English
Government Degree College, Dichpally

Abstract

The rapid integration of Artificial Intelligence (AI) into nearly every sector of society has transformed how individuals live, work, and make decisions. From predictive healthcare diagnostics and algorithmic hiring systems to automated financial assessments and smart governance platforms, AI increasingly influences outcomes that shape human opportunities and social structures. As AI systems gain autonomy and scale, ethical concerns regarding fairness, accountability, transparency, privacy, and human dignity have intensified. Simultaneously, AI literacy has emerged as a crucial competency for individuals navigating the digital age. AI literacy refers to the ability to understand how AI systems function, recognize their limitations, and critically evaluate their social implications. This paper explores the intersection of ethics and AI literacy, examining ethical risks associated with AI deployment, the importance of interdisciplinary governance frameworks, and the central role of education in cultivating responsible engagement with AI technologies. It argues that ethics and AI literacy are mutually reinforcing pillars necessary for building a trustworthy and inclusive digital future. Societies that prioritize both ethical oversight and widespread AI literacy will be better equipped to ensure that AI systems serve humanity equitably and responsibly.

1. Introduction

Artificial Intelligence (AI) has transitioned from a theoretical research field into a pervasive force shaping contemporary society. Machine learning algorithms recommend products, determine creditworthiness, assist in medical diagnoses, moderate online content, and support public policy decisions. AI-driven systems increasingly mediate human experiences and influence life opportunities.

While AI promises efficiency, innovation, and economic growth, its rapid expansion has also generated complex ethical challenges. Automated decision-making systems may perpetuate historical biases embedded in training data, reduce transparency in governance, and raise concerns regarding privacy and surveillance. High-profile cases of algorithmic discrimination and data misuse have demonstrated that AI systems are not neutral technologies; they reflect human choices, social contexts, and institutional priorities.

In response, global institutions such as the UNESCO and the European Commission have called for ethical AI frameworks emphasizing human rights and democratic values. However, ethical guidelines alone are insufficient if citizens lack the knowledge necessary to understand and question AI systems.

AI literacy—defined as the ability to comprehend, evaluate, and critically engage with AI technologies—has therefore become a foundational skill of the digital era. Ethics and AI literacy are deeply interconnected: ethical AI requires informed users, and AI literacy must incorporate ethical reasoning.

This paper examines the relationship between AI ethics and AI literacy, analyzes key ethical challenges, and proposes strategies for fostering responsible AI governance through education, organizational accountability, and public policy.

2. Understanding Artificial Intelligence and AI Literacy

2.1 Defining Artificial Intelligence

Artificial Intelligence refers to computational systems capable of performing tasks traditionally associated with human intelligence, such as pattern recognition, decision-making, language understanding, and predictive analysis. AI encompasses subfields including machine learning, natural language processing, robotics, and computer vision.

Machine learning (ML), a central component of AI, allows systems to learn patterns from large datasets rather than relying solely on explicit programming. Deep learning, a subset of ML, employs multi-layered neural networks to process complex information, often achieving remarkable accuracy in image recognition, speech processing, and recommendation systems.

Despite their capabilities, AI systems lack consciousness, moral judgment, and contextual awareness beyond their programming. Their outputs depend heavily on data quality, algorithmic design, and human oversight.

2.2 What Is AI Literacy?

AI literacy refers to a person's ability to understand how AI systems function, interpret their outputs, and assess their societal implications. According to Long and Magerko (2020), AI literacy includes knowledge of fundamental AI concepts, awareness of AI limitations, and the capacity to critically analyse algorithmic decisions.

Key components of AI literacy include:

- Understanding data collection and preprocessing
- Recognizing how algorithms generate predictions
- Identifying potential bias in datasets
- Evaluating system limitations and uncertainties
- Appreciating ethical implications of AI deployment

AI literacy empowers individuals to engage with AI critically rather than passively. It encourages questioning of automated decisions and fosters informed participation in debates about regulation and governance.

3. Ethical Foundations of AI

Ethical AI development rests on widely recognized normative principles that guide responsible design and deployment.

3.1 Fairness and Non-Discrimination

Algorithmic bias remains one of the most pressing concerns in AI ethics. As demonstrated by research such as O'Neil's *Weapons of Math Destruction* (2016), data-driven systems can perpetuate systemic inequalities when trained on biased historical data.

For example, predictive hiring algorithms may disadvantage certain demographic groups if past employment records reflect discrimination. Ensuring fairness requires:

- Representative datasets
- Bias detection tools
- Ongoing performance monitoring
- Inclusive design practices

Fairness must be understood not merely as statistical parity but as alignment with broader social justice principles.

3.2 Transparency and Explainability

Transparency involves openness about how AI systems operate and make decisions. Explainability refers to the ability to provide understandable reasons for algorithmic outputs.

Complex deep learning models often function as "black boxes," making it difficult to trace decision pathways. In high-stakes contexts—such as criminal justice risk assessments or healthcare diagnostics—lack of explainability undermines trust and accountability.

The European Union's regulatory efforts, including the proposed Artificial Intelligence Act, emphasize transparency requirements for high-risk AI systems.

3.3 Accountability and Responsibility

Determining accountability when AI systems cause harm presents legal and ethical challenges. Responsibility may involve developers, deploying organizations, data providers, or regulators.

Clear accountability frameworks include:

- Impact assessments
- Audit mechanisms
- Legal liability structures
- Documentation of system design

Accountability ensures that AI systems operate within enforceable ethical boundaries.

3.4 Privacy and Data Protection

AI systems rely heavily on large-scale data collection. The ethical management of personal data is therefore central to AI governance.

Regulatory frameworks such as the General Data Protection Regulation establish strict requirements for data protection, consent, and transparency. Ethical AI

development must prioritize privacy-preserving technologies and minimize intrusive surveillance practices.

3.5 Human Dignity and Autonomy

AI systems should enhance rather than undermine human agency. Overreliance on automation risks diminishing individual autonomy, particularly when people cannot contest algorithmic decisions affecting their lives.

Ethical AI emphasizes human oversight, ensuring that final authority in critical domains remains with accountable individuals or institutions.

4. Ethical Challenges in Key Sectors

4.1 Healthcare

AI-powered diagnostic tools assist physicians in detecting diseases and predicting treatment outcomes. However, biased training data may produce disparities in medical recommendations.

Inaccurate or non-transparent algorithms can jeopardize patient trust. Ethical healthcare AI requires rigorous validation, clinician oversight, and equitable dataset representation.

4.2 Employment and Workforce Automation

Automation reshapes labour markets by replacing routine tasks and creating new digital roles. While AI increases efficiency, it also raises concerns about job displacement and economic inequality.

Responsible transition policies include workforce retraining programs and equitable distribution of technological benefits.

4.3 Governance and Public Policy

Governments increasingly use AI for predictive policing, resource allocation, and social service eligibility assessments. Without transparency and oversight, such systems risk reinforcing structural inequalities.

Public-sector AI must adhere to democratic accountability principles and allow citizens to challenge automated decisions.

4.4 Information Ecosystems and Misinformation

Generative AI systems can produce realistic synthetic content, including deepfakes and automated misinformation. Such technologies threaten democratic discourse and public trust.

AI literacy enables individuals to critically evaluate digital content, identify manipulated media, and resist misinformation campaigns.

5. The Interdependence of Ethics and AI Literacy

Ethics and AI literacy reinforce each other in several ways:

1. **Informed Scrutiny:** AI-literate citizens can question biased or opaque systems.
2. **Democratic Engagement:** Knowledgeable publics can participate meaningfully in regulatory debates.
3. **Accountability Demand:** Awareness empowers individuals to demand transparency from institutions.

4. **Responsible Use:** Ethical awareness guides individuals in their own AI interactions.

Without AI literacy, ethical principles remain abstract and inaccessible. Without ethics, AI literacy risks becoming purely technical and disconnected from societal values.

6. Education as a Catalyst for AI Literacy

6.1 Integrating AI into Formal Education

Educational institutions must incorporate AI literacy into curricula at all levels. Programs should combine:

- Basic computational thinking
- Data ethics
- Critical digital literacy
- Case studies of algorithmic bias

Students should learn not only how AI works but also its societal implications.

6.2 Interdisciplinary Higher Education

Universities should foster collaboration between computer science, philosophy, sociology, and law. Ethical AI development requires diverse perspectives and critical reflection.

6.3 Lifelong Learning

AI literacy extends beyond formal schooling. Governments and organizations should offer public training initiatives, online courses, and community workshops to reduce digital inequality.

7. Organizational and Corporate Responsibility

Organizations deploying AI must embed ethics into governance structures. Strategies include:

- Establishing ethics committees
- Conducting algorithmic audits
- Publishing transparency reports
- Engaging affected communities

Ethical training should accompany technical training to ensure responsible innovation.

Corporate accountability strengthens public trust and reduces reputational risks.

8. Policy and Global Governance

AI technologies transcend national boundaries, requiring international cooperation. Multilateral organizations and national governments must harmonize standards to prevent regulatory fragmentation.

Policies should:

- Mandate risk assessments for high-impact systems
- Protect fundamental rights
- Encourage innovation while preventing harm
- Promote equitable access to AI benefits

Global collaboration ensures that AI development aligns with shared human values.

9. Building a Culture of Responsible Innovation

Responsible innovation anticipates risks and integrates ethical reflection throughout the development lifecycle. Rather than retroactively correcting harm, developers should adopt "ethics by design" approaches.

Public trust depends on transparency, inclusivity, and consistent oversight. Encouraging stakeholder participation enhances legitimacy and fairness.

10. Future Directions

As AI systems grow more autonomous and sophisticated, ethical challenges will intensify. Emerging technologies—such as autonomous vehicles, advanced generative models, and AI-assisted governance—require continuous ethical evaluation.

Future AI literacy must evolve alongside technological change, preparing individuals for complex human–AI collaboration. Societies investing in both ethical governance and education will better navigate this transformation.

11. Conclusion

Artificial Intelligence represents a defining technological force of the twenty-first century. Its influence spans healthcare, education, governance, finance, and employment. While AI offers transformative benefits, it also presents profound ethical risks.

Ethics and AI literacy are interconnected pillars necessary for building a trustworthy digital future. Ethical frameworks ensure that AI systems respect fairness, transparency, accountability, privacy, and human dignity. AI literacy empowers individuals to understand, question, and shape the technologies influencing their lives.

Educational institutions, organizations, policymakers, and communities must collaborate to foster both competencies. By integrating ethical reflection with technical knowledge, societies can ensure that AI serves humanity equitably and responsibly.

The future of AI will not be determined solely by algorithms, but by the ethical awareness and literacy of the people who design, deploy, and use them.

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Between Output and Acquisition: Teacher Mediation in AI-Integrated Language Classrooms

Raheela Begum

Abstract

The rapid proliferation of generative AI in language classrooms has created a fundamental pedagogical question: can these tools be integrated without undermining the cognitive processes essential to learning? This paper examines this question through constructivist and sociocultural lenses, focusing on what unstructured AI use may obscure—the developmental function of error, the diagnostic value of partial understanding, and the guided interaction through which teachers scaffold learning. When students bypass these processes by outsourcing cognitive work to AI, they may produce linguistically proficient output without corresponding conceptual development. This does not foreclose AI's potential; rather, it reframes how teachers mediate student interaction with these tools. Effective integration requires not accommodation to technological pressure but intentional pedagogical intervention by teachers that preserves opportunities for productive struggle. The aim is not to constrain AI within theory, but to use theory as a lens to protect what must remain central: the learner's cognitive development. This protection is enacted not through substitution, but through teacher mediation that transforms AI output from a final product into a starting point for productive struggle, error analysis, and the active construction of knowledge.

Keywords: Artificial Intelligence in ELT; Teacher Mediation; Cognitive Outsourcing; Language Learning; Constructivist Learning; Sociocultural Theory.

Introduction

Language learning rarely begins with perfect sentences. It often starts with hesitation, partial ideas, and imperfect attempts as learners gradually shape their thoughts into words. In many language classrooms today, however, students can obtain grammatically correct sentences within seconds through artificial intelligence (AI) tools. AI-powered systems now provide learners with immediate feedback, generate examples, and even produce complete written responses based on simple prompts. Such tools expand access to linguistic resources and create opportunities for more personalized and interactive language practice (Crompton et al.). Yet the growing ability of AI systems to generate language introduces a pedagogical tension in language classrooms: when correct linguistic output can be produced instantly,

what becomes of the processes of experimentation, productive struggle, and gradual refinement through which learners typically develop language competence?
This paper examines that tension through constructivist and sociocultural perspectives and argues that effective AI integration requires deliberate teacher mediation. When students outsource linguistic problem- solving to AI—a process conceptualized here as cognitive outsourcing—they may produce linguistically proficient output without corresponding conceptual development (Bhardwaj). The paper therefore proposes that teachers must mediate student interaction with AI, treating AI-generated responses as material for analysis, revision, and guided learning rather than as finished answers. To develop this argument, the paper first reviews existing research on AI in English language teaching, then examines the pedagogical risks of unstructured AI use, drawing on recent empirical studies from Indian classrooms. It subsequently reconceptualizes the teacher's role as facilitator, scaffolder, and mediator of productive struggle, and proposes a flexible framework for teacher-mediated AI integration—one attentive to classroom realities rather than driven by technological optimism.

Literature Review

Recent studies in language learning have increasingly examined the potential of artificial intelligence in English language teaching (ELT). Researchers note that AI-powered tools such as conversational agents,automated writing assistants, and intelligent tutoring systems can expand opportunities for language practice by providing immediate feedback, personalized learning environments, and increased exposure to linguistic input (Crompton et al.; Pokrivcakova). These technologies are frequently described as resources capable of enhancing learner autonomy and supporting individualized learning pathways. Studies on digital pedagogy further suggest that AI-based platforms can assist teachers in designing adaptive learning tasks and monitoring student progress more efficiently (Santhosh and Santhosh).

At the same time, emerging research highlights pedagogical concerns surrounding the use of AI in language classrooms. Scholars caution that heavy reliance on AI-generated responses may reduce learners' active engagement with language tasks (Crompton et al.). Research in Indian educational contexts suggests that while AI tools can support instructional innovation, unstructured AI use may prioritize task completion over the cognitive work that builds lasting language competence (Bhardwaj).

These discussions reveal an important gap in the current literature. While many studies explore the affordances and challenges of AI in ELT, fewer examine how AI-generated language influences the cognitive processes involved in language learning. Addressing this gap requires closer attention to how learners interact with AI- generated responses and how teachers can mediate these interactions to preserve

opportunities for productive struggle and conceptual development. Constructivist and sociocultural perspectives, which foreground the roles of error, scaffolding, and guided interaction in learning, provide a useful framework for examining these emerging dynamics.

Cognitive Outsourcing in AI-Mediated Language Learning

Cognitive outsourcing refers to the transfer of problem-solving processes from the learner to an external system. In AI-mediated language learning, this occurs when learners rely on AI-generated responses to perform tasks that would otherwise require linguistic experimentation, grammatical reasoning, and revision. While such tools can produce accurate and efficient outputs, their use may subtly alter the learner's role in the learning process. Instead of constructing language through cycles of trial and revision, learners may begin to select or adapt machine-generated responses, a shift that runs counter to constructivist views of learning as active engagement with problems. Sociocultural theory similarly emphasizes guided interaction and scaffolding within the learner's zone of proximal development. When AI provides complete responses without pedagogical mediation, opportunities for such guided interaction may be reduced.

One significant consequence of cognitive outsourcing is the bypassing of productive struggle. Constructivist theories hold that cognitive development depends on learners encountering problems that require effortful engagement. Errors are not merely obstacles but sites of hypothesis testing and conceptual reorganization. When learners receive correct responses from AI without working through incorrect alternatives, they are denied this developmental process. Choosing between grammatical forms, searching for the precise word, or revising an unclear sentence are not inefficiencies to be eliminated; they are mechanisms through which language competence develops.

A simple classroom scenario illustrates this risk. When a student prompts a generative AI system such as ChatGPT to "write a 500-word essay about a memorable day," the tool can produce a coherent and grammatically accurate response within seconds. The student may submit this output after minimal modification. In such cases, the AI has produced the essay, but the learner has not engaged in organizing memories, selecting details, or shaping language to convey personal meaning. Bhardwaj reports that teachers in Indian classrooms have observed similar patterns: students who rely heavily on AI tools often accept generated corrections without understanding them, resulting in surface-level task completion rather than deeper linguistic development (Bhardwaj). The output may be correct, but the learning process has been bypassed.

A related concern is the erosion of diagnostic information available to teachers. Within sociocultural frameworks, learner errors and hesitations provide valuable insight into a student's developing interlanguage. A partially correct

sentence reveals where understanding currently stands, while hesitation before a word choice signals uncertainty that teachers can address through targeted scaffolding. When students rely on AI systems to correct or complete work before submission, this diagnostic evidence disappears. Teachers encounter only the final AI-mediated product rather than the learning process that produced it, making instruction less responsive to learners' actual needs. This challenge is compounded by limited teacher preparation: Bhardwaj notes that only a minority of instructors in his study had received formal training in the use of AI tools (Bhardwaj).

Cognitive outsourcing may also create an illusion of proficiency. Students who produce polished texts with AI assistance may overestimate their independent ability. This gap becomes visible only when technological support is unavailable. Crompton and colleagues warn that learners may become overly dependent on AI systems to complete tasks while failing to master the underlying linguistic content (Crompton et al.). Speech- recognition applications such as ELSA Speak illustrate this risk: learners may repeat pronunciations until the system signals approval without understanding the phonetic distinctions involved.

Finally, unstructured AI use may contribute to the homogenization of language. Large language models, trained on vast textual corpora, tend toward statistically probable patterns of expression. Learners who rely heavily on such systems may produce language that is grammatically correct but stylistically flattened, lacking the experimentation that characterizes developing proficiency. More concerning are the linguistic biases embedded in many commercial AI applications. Bhardwaj notes that many systems are calibrated toward dominant native-speaker norms, potentially marginalizing regional variations and accent diversity (Bhardwaj). Crompton and colleagues similarly warn that AI technologies may contribute to the standardization of language and ideology (Crompton et al.). In multilingual contexts such as India, this may lead learners to perceive locally shaped varieties of English as errors rather than legitimate linguistic resources.

These risks do not affect all learners equally. In under-resourced contexts where infrastructure is unreliable, teacher training limited, and AI tools poorly aligned with learners' linguistic backgrounds, the consequences of unstructured AI use may intensify. A student in a well-resourced classroom with guided AI use may benefit from the technology, while a student without pedagogical support may rely on it as a crutch—widening existing educational inequalities. These disparities highlight the importance of pedagogical mediation in shaping how AI is integrated into language classrooms. The following section therefore examines what such mediation entails.

Teacher Mediation in AI-Integrated Language Classrooms

The concept of cognitive outsourcing, developed in the previous section, describes what occurs when learners delegate linguistic problem-solving to AI

without engaging in the cognitive work through which language develops. If cognitive outsourcing is the risk, then teacher mediation becomes the necessary response. Mediation involves structuring learners' interaction with AI so that technological assistance supports rather than displaces cognitive engagement.

This mediation can be understood through a distinction between task mediation and process mediation. Task mediation structures how AI is used in the classroom—the prompts students write, the tools they consult, and the sequence of activities they follow. Process mediation, by contrast, protects the cognitive work of learning. It ensures that learners attempt expression independently before consulting AI, critically evaluate generated suggestions, and revise their work through reflection. Task mediation without process mediation may produce accurate outputs while the outsourcing of cognitive work continues unnoticed.

Teachers counter outsourcing by scaffolding AI interaction and designing process-oriented tasks. Students need guidance not only in operating AI tools but in using them strategically—knowing when to consult AI, how to evaluate its suggestions, and when to rely on their own developing judgment. As Pokrivčáková argues, effective AI integration therefore requires teacher preparation that combines technical familiarity with pedagogical understanding (Pokrivčáková). In contexts such as India, where few teachers have received formal preparation for AI integration (Bhardwaj), strengthening this capacity becomes particularly important. A narrative writing lesson illustrates what task mediation can achieve—and what it may leave incomplete. In the activity, students were asked to recall a personal memory, note key points, and use ChatGPT to generate an essay. The exercise was engaging: learners experimented with stylistic variations and produced grammatically correct texts within minutes. The teacher had successfully structured how AI would be used; task mediation was clearly achieved. Yet the teacher sensed that learning remained unfinished. Students had learned to operate the tool, but they had not engaged deeply in the cognitive work of translating memory into language—the experimentation with word choice, the shaping of emotional emphasis, and the search for precise expression. What was missing was process mediation, the pedagogical guidance that would have preserved this effort before AI entered the task.

Strengthening process mediation requires deliberate shifts in classroom design. Teachers can structure activities so that learners first attempt expression independently before AI becomes part of the process. AI output can then be used as a resource for comparison, prompting students to examine differences between their own language and generated alternatives. Reflection—explaining why certain suggestions are adopted or rejected—makes learners' thinking visible and returns linguistic decision-making to the learner. Through such reflection, AI output becomes material for analysis rather than a finished answer.

The same principle applies across language skills, though its implementation may vary. In speaking activities, learners might attempt a response independently before consulting AI-based pronunciation tools and reflecting on the differences they notice. In reading tasks, students might paraphrase a passage in their own words before exploring AI-generated interpretations and evaluating which best capture the intended meaning. Across these contexts, the sequence remains consistent: independent effort first, technological assistance second, critical reflection throughout.

Ultimately, teacher mediation represents not merely a set of techniques but a broader pedagogical stance. It requires educators to recognize when technological assistance begins to displace cognitive engagement— when outsourcing is occurring—and to redesign learning tasks accordingly. The presence of AI in language classrooms therefore does not diminish the teacher's role. On the contrary, it underscores its continuing importance. Only through deliberate process mediation can teachers ensure that AI supports language development rather than outsourcing the very work through which learning happens.

Conclusion

This paper argues that integrating generative AI into language classrooms requires more than organizing how students use these tools. The risk of cognitive outsourcing—learners producing correct outputs while bypassing the cognitive work of language development—cannot be addressed through task design alone. The distinction between task mediation and process mediation shows that structuring AI use is necessary but insufficient, since learning depends not only on how tools are used but on how learners engage with language during the process. The central issue is whether teachers preserve the processes through which learning occurs: independent expression, critical reflection, and revision. As AI systems grow more capable, the teacher's role becomes increasingly central—not simply organizing technological tasks, but deliberately mediating the learning process so that AI supports, rather than replaces, the work through which language learning develops.

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AI-Powered English Language Learning Tools Developed in Telangana: Enhancing English Proficiency among Regional and Multilingual Learners through Localized Digital Support

Lt G. Bhargavi
Assistant Professor and Head
Department of English
Telangana Tribal Welfare Residential Degree
College of Life sciences for Women Nizamabad.

1.Introduction

Artificial Intelligence has revolutionized education by providing personalized and adaptive learning environments. AI-powered language learning tools improve English language skills by offering individualized instruction and real-time feedback. Telangana has developed several innovative AI-based language learning tools to enhance learners' communication skills and literacy levels.

Institutions such as IIIT Hyderabad, Swecha, and Telangana Academy for Skill and Knowledge (TASK) have played a key role in developing these tools. These platforms cater to learners from regional, rural, and multilingual backgrounds, providing accessible, adaptive, and contextually relevant content.

2. Objectives of the Study

- To identify AI-powered language learning apps and tools developed in Telangana.
- To analyze their effectiveness in improving English language skills
- To examine their advantages and disadvantages.
- To evaluate their impact on learners' communication skills.
- To explore practical implications for teachers in using these tools.

3. AI-Powered Language Learning Apps and Tools

Learn Clue App
Usage: Interactive language learning
Impact Percentage: Vocabulary 35–50%, Communication 30–45%
Advantages: Engaging, interactive
Disadvantages: Requires internet

Mind spark AI
Usage: Adaptive learning for school student
Impact Percentage: Reading 40–55%, Language comprehension 35–50%
Advantages: AI-based adaptive learning, improves literacy
Disadvantages: Limited access in rural areas

FLN AI Tool
Usage: Foundational literacy and numeracy
Impact Percentage: Reading 35–50%, Vocabulary 30–45%
Advantages: Beginner-friendly, improves basic literacy

Disadvantages: Limited advanced learning

Swecha Language Tools

Usage: Speech recognition and pronunciation
Impact Percentage: Pronunciation 45–60%, Listening 35–50%
Advantages: Improves pronunciation, supports regional languages
Disadvantages: Limited accessibility

Adi vaani Language Tool

Usage: Comprehension and pronunciation support for regional learners
Impact Percentage: Pronunciation 45–60%, Reading 35–50%
Advantages: Connects English learning with familiar language contexts
Disadvantages: Limited exposure outside Telangana

TASK INTIATIVES

Zene App

Usage: Personalized English learning
Impact Percentage: Vocabulary 35–45%, Reading 30–40%
Advantages: Personalized, easy to use
Disadvantages: Limited speaking practice

TASK COMMUNICATION MODULES

Usage: Communication and employ-ability skills for graduates
Impact Percentage: Speaking 45–55%, Communication 40–50%
Advantages: Prepares learners for professional communication
Disadvantages: Requires registration and structured programs

T-SAT

Usage: Digital classroom and video-based learning
Impact Percentage: Listening 35–50%, Comprehension 30–45%
Advantages: Accessible to many students, audio-visual learning
Disadvantages: No personalized learning.

4. Comparative Table of Skills and Impact

T00L	SKILL	IMPACT PERCENTAGE	ADVANTAGE	DISADVANTAGE
ZENE	Vocabulary	35-45%	Personalized	Limited speaking
LEARNCLUE	communication	30-45%	Interactive	Needs internet
MIND SPARK AI	Reading	40-55%	Adaptive learning	Limited access
FLN AI	Reading	35-50%	Beginner - Friendly	Basic level only
SWECHA	Pronunciation	45-60%	Speech learning	Limited availability

ADIVAANI	Pronunciation	45-60%	Regional context	Limited Exposure
TASK MODULES	Speaking	45-55%	Employ-ability	Registration required
T-SAT	Listening	35-50%	Audio-visual	No personalization

Challenges and opportunities

Challenges

Digital divide and limited device access in rural areas.
Internet dependency for most tools.
Need for teacher training to maximize tool effectiveness.

Opportunities

Personalized learning for each student.
Inclusive education for regional and multilingual learners.
Gamified content increases engagement.
Supports future-ready classrooms and digital literacy development

6. Implications for Teachers

While AI tools offer adaptive, interactive learning, teachers remain essential:

Awareness of Tools

Teachers gain knowledge about tools and their focus areas:
Vocabulary & Reading → Zene, Mind spark AI
Communication & Listening → Learn Clue, T-SAT
Pronunciation & Comprehension → Swecha, Adi vaani
Speaking & Employ-ability → TASK

Classroom Integration

Assign app exercises as homework or in-class activities.
Monitor student progress through AI dashboards.
Reinforce app-based learning via discussions, role-play, and peer collaboration.

Measurable Impact

Skill	Improvement %	Tool Examples
Speaking	40–60%	TASK, Learn Clue
Pronunciation	45–65%	Swecha, Adi vani
Reading	35–55%	Zene, Mind spark AI
Vocabulary	30–50%	Zene, Learn Clue
Employability	40–60%	TASK

Benefits

Personalized and inclusive teaching.
Data-driven progress monitoring.
Frees time for creative and interactive instruction.
Prepares teachers for AI-enabled teaching strategies.

Key Takeaways

Teachers are facilitators and guides, not replaceable by AI.

AI enhances learning, but supervision ensures accuracy, engagement, and comprehension.

Teachers help learners connect English learning with regional and multilingual contexts, improving accessibility and relevance.

7. Future Directions

- Expansion of AI tools to cover advanced grammar, writing, and professional communication.
- Integration of gamification, AR/VR, and multilingual support.
- AI analytics for teacher feedback and adaptive lesson planning.
- Developing offline AI solutions to overcome internet dependency.

8. Conclusion

AI-powered language learning tools developed in Telangana have shown substantial improvement in English language proficiency (30–65%) across multiple skills. These tools, combined with teacher guidance, provide personalized, inclusive, and technology-enabled learning. While challenges such as digital access and rural connectivity remain, Telangana's initiatives exemplify how AI can transform English teaching, preparing learners for academic and professional success while empowering teachers with data-driven, adaptive teaching strategies.

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Overcoming Challenges in English Language Teaching in India through Artificial Intelligence

E.Balraj
Lecturer in English, Government Degree College(A),Bichkunda

1. Introduction

India is widely acknowledged as one of the most linguistically diverse nations in the world, characterized by an extraordinary variety of languages and dialects spoken across its regions. The nation offers a distinctive multilingual and multicultural setting, with over a thousand mother tongues and 22 legally recognized languages under the Constitution. Although this language diversity is a reflection of India's rich cultural legacy, it also poses significant communication issues, in particular in domains like social interaction, education, and administration. English has become an essential link language that facilitates communication across linguistic and geographical barriers in such a complicated linguistic environment. It serves as an associate official language and is important for international communication, higher education, governance, and the legal system.

In modern times, a globalized world, proficiency in English has become an essential skill rather than merely an added advantage. The vast majority of Indian higher education institutions use English as their primary language of instruction, especially in professional and technical subjects like engineering, medicine, law, science, and management. Effective English communication is also crucial for many important economic areas, such as corporate business, journalism, research, information technology, and international relations. Because of this, those with good English language proficiency frequently have easier access to jobs, higher education, and international career chances. Therefore, in contemporary India, social mobility and economic advancement are strongly associated with English competence.

English language teaching (ELT) in India still faces a number of enduring and difficult issues despite its increasing significance. The impact of learners' mother tongues, which frequently causes problems with pronunciation, grammar, and sentence structure, is one of the main problems. The development of fluency and communication skills is impacted by this phenomenon, which is often called mother tongue interference. Additionally, there is a big difference between educational institutions in rural and urban areas. Infrastructure, access to qualified professors, and exposure to English through media and technology are all often greater in urban schools and universities. Students in rural and semi-urban regions, on the other hand, frequently lack access to high-quality resources, qualified teachers, and chances for practical language practice, which limits their learning outcomes.

A significant issue is the lack of properly trained English language instructors. Numerous teachers lack specialized training in contemporary teaching methods and still depend on traditional strategies like the grammar-translation approach. Though this approach can aid in grasping grammatical principles, it hardly contributes to the enhancement of practical communication abilities. Consequently, learners frequently find it challenging to utilize English proficiently in everyday scenarios. Alongside these structural difficulties, psychological aspects also significantly influence language acquisition. Worry about errors, nervousness, and low self-esteem often prevent students from engaging fully in classroom activities, especially during speaking exercises.

In recent times, swift technological progress has started to change the realm of education. Among these advancements, artificial intelligence (AI) has surfaced as a strong instrument capable of transforming conventional teaching and learning methods. AI denotes computer systems created to imitate human intelligence, encompassing learning, reasoning, language processing, and decision-making. In educational settings, AI-driven tools like adaptive learning systems, voice recognition software, smart tutoring systems, chatbots, and automated evaluation platforms are being utilized more frequently to improve learning experiences. These tools provide tailored feedback, engaging learning settings, and chances for ongoing practice, thus overcoming numerous drawbacks of traditional teaching approaches.

This study seeks to investigate the key difficulties linked to teaching English in India and to analyze how artificial intelligence can efficiently tackle these challenges. It further assesses the benefits, drawbacks, and future possibilities of incorporating AI into language learning. The research underscores the importance of a balanced, ethical, and inclusive method for integrating AI in education by showcasing both opportunities and challenges. This method is crucial to guarantee that technological progress helps to build more fair, effective, and future-oriented English language learning setting for students from various areas of India.

2. Literature Review

English holds a pivotal role in the educational, social, and economic framework of India. Researchers and educational leaders have repeatedly emphasized its function as a bridge language that unites various linguistic groups. Studies show that having a strong command of English correlates with better academic outcomes, increased job prospects, and greater access to international opportunities. As a result, teaching the English language has become a focus in both government and private educational establishments.

Nonetheless, research on English language instruction in India reveals enduring and intricate difficulties. Mother tongue interference and linguistic variety are two of the most important problems. Learners frequently incorporate vocabulary,

grammatical structures, and pronunciation patterns from their home languages into English. Language transfer is a phenomenon that often leads to mistakes and impacts fluency. Furthermore, a lot of students have a tendency to think in their native tongue before translating it into English, which slows down communication and decreases accuracy.

The gap between rural and urban areas is another significant issue mentioned in the literature. In general, urban colleges and schools have more qualified lecturers, greater facilities, and access to digital technologies. On the other hand, inadequate facilities, a dearth of instructional resources, and little exposure to English-speaking environments are common problems for rural colleges. This discrepancy limits possibilities for children from underprivileged backgrounds and produces unequal learning outcomes.

Another serious problem is the lack of certified English teachers. Many educators are not formally trained in contemporary approaches to teaching languages, such as task-based learning and communicative language teaching (CLT). Because of this, traditional grammar-translation techniques that prioritize memorization and written exercises over useful conversation skills are frequently used in classrooms. The speaking and listening skills that students need to communicate in the actual world are not developed by this method.

The role of technology in resolving these issues has received more attention in recent studies. In particular, artificial intelligence has drawn interest as a potent instrument for improving language acquisition. According to studies, AI-based learning systems can offer individualized education depending on the needs of each learner. In order to ensure successful learning, adaptive learning platforms evaluate students' performance and modify the content's level of difficulty correspondingly.

Another important advancement in AI-driven language learning is speech recognition technology. It helps students get better at speaking by giving them the opportunity to practice pronunciation and get instant feedback. Chatbots and virtual teachers driven by AI mimic real-world conversations, giving students the chance to practice English in a secure and accepting setting. Additionally, students can improve their writing coherence, vocabulary, and grammar with the use of automated writing evaluation programs.

Despite these benefits, the research also identifies a number of AI's drawbacks in the classroom. Since many kids in rural areas lack access to computers, smartphones, and dependable internet connectivity, the digital divide continues to be a significant problem. Concerns about data security and privacy are especially important because AI systems gather and examine vast volumes of student data. AI

also lacks the human contact and emotional intelligence required for successful language instruction. Researchers stress that rather than taking the role of educators, AI should be seen as a helpful tool.

Overall, research indicates that while conventional difficulties in teaching English continue to exist, artificial intelligence presents viable ways to improve learning efficacy, accessibility, and customization.

3. Methodology

This study uses a qualitative and analytical research methodology to investigate the difficulties in teaching English in India and assess how artificial intelligence (AI) can help. The study only uses secondary data that was gathered from a variety of reliable sources, such as scholarly books, government papers, peer-reviewed academic journals, educational policy documents, and respectable online learning environments. These resources offer a thorough basis for comprehending both the current problems in English language instruction and the developing function of AI technology.

A systematic and comprehensive evaluation of the literature on English language instruction in India is part of the technique. Key issues such as linguistic diversity, socioeconomic and educational disparities, inadequate teacher preparation, the shortcomings of conventional teaching methods, and the psychological aspects influencing language acquisition in students are given special focus. The research finds deficiencies in the current educational system and recurrent patterns by combining data from several studies.

The study also looks at a number of AI-based tools and technologies that are being incorporated into language learning more and more. These include chatbots driven by AI that mimic conversational practice, automated assessment tools that offer immediate feedback, speech recognition software that improves pronunciation, and adaptive learning systems that personalize information. The usefulness, accessibility, and efficacy of these technologies in enhancing language learning outcomes are the main topics of analysis.

To assess the distinctions between AI-supported learning strategies and conventional classroom-based teaching techniques, a comparative analysis is carried out. The advantages, disadvantages, and contextual appropriateness of each strategy are highlighted in this comparison, especially when it comes to meeting the various demands of learners in both urban and rural environments. In order to comprehend their actual implementation and real-world impact, a few case studies of well-known AI-based language learning apps are examined.

Additionally, the study suggests a conceptual framework that methodically connects particular difficulties in teaching English to matching AI-driven solutions.

This approach makes it possible to analyze how AI may help break down educational barriers in an organized and critical manner.

In general, with the lack of primary data collection, the qualitative character of this study enables a thorough investigation of the subject through critical interpretation and synthesis of current knowledge, providing significant insights.

4.Analysis & Findings

A number of significant obstacles to English language instruction in India are highlighted by the literature and secondary data analysis, which also emphasizes the revolutionary potential of artificial intelligence (AI) in resolving these problems. Mother tongue interference and linguistic diversity are two of the biggest obstacles. Due to India's multilingual environment, learners frequently translate phonological and grammatical patterns from their home languages into English, which can lead to mistakes in usage, sentence construction, and pronunciation. By providing real-time corrective feedback and pronunciation advice, AI-based voice recognition systems offer an efficient alternative. Through ongoing, self-paced practice made possible by these technologies, students can progressively improve their speaking abilities and increase their linguistic accuracy.

The ongoing educational gap between rural and urban areas is another important problem. It is common for students in rural locations to lack access to competent teachers, high-quality learning resources, and sufficient English exposure. On the other hand, urban learners frequently gain from improved resources and infrastructure. By providing standardized, high-quality material that is available via mobile devices and internet connectivity, AI-powered digital platforms can aid in closing this gap. The promise of AI to make language learning more inclusive and egalitarian has been further boosted by the growing use of smartphones and government-led digital education initiatives.

In many regions of the nation, the lack of qualified English language instructors continues to be a major issue. By automating administrative and instructional duties like creating lesson plans, grading assignments, and monitoring student performance, AI technology might be helpful. Teachers can concentrate more on interactive, student-centered teaching strategies that improve engagement and comprehension as a result of having less work to do.

Many classes still use traditional teaching approaches, especially the grammar-translation approach, which frequently restricts the growth of communicative skills. However, through tests, Gamified activities, and real-time conversational simulations, AI-driven learning technologies encourage interactive and experiential learning. These techniques boost retention, promote active engagement, and enhance the effectiveness of the learning process.

Learners' capacity to acquire language skills is also greatly impacted by psychological obstacles, such as worry, a fear of making mistakes, and a lack of confidence. Many students hesitate to speak English in classroom settings due to social pressure or fear of criticism. AI-powered chatbots provide a safe, non-judgmental environment where learners can practice freely, thereby building confidence and fluency over time.

Additionally, teachers' capacity to give timely feedback and individualized attention is frequently hampered by packed classrooms. This restriction is addressed by AI-based automated assessment tools, which provide immediate, tailored feedback on speaking and writing assignments. This enables learners to identify errors, track progress, and improve continuously.

Overall, the results show that by improving accessibility, personalization, interactivity, and efficiency in English language learning, artificial intelligence has the potential to address several issues at once and contribute to a more successful and inclusive learning environment.

5. Discussion

An important change in teaching methods is the incorporation of artificial intelligence into English language instruction. It replaces teacher-centered instruction with learner-centered methods that put the needs and preferences of each individual student first.

Personalized learning is one of AI's biggest benefits. Due to the huge class sizes in traditional classrooms, teachers frequently find it difficult to meet the different requirements of their students. AI-driven technologies assess each student's unique learning style and modify the information accordingly, guaranteeing that every student gets the help they need.

Additionally, AI is essential for enhancing speaking and pronouncing abilities. In areas where there is little exposure to spoken English, speech recognition technology allows students to practice on their own and get fast feedback.

Increased engagement is another significant benefit of AI. Students are encouraged to practice frequently and find language learning more pleasurable when they engage in interactive and Gamified learning activities. This enhances retention and improves learning outcomes.

But the conversation also draws attention to a number of difficulties. Because not all students have access to digital devices and internet connectivity, the digital gap continues to be a significant challenge. This restricts the efficacy of AI-based solutions in isolated and rural locations.

AI also lacks the human interaction and emotional intelligence required for good instruction. Teachers are essential in inspiring pupils and boosting their self-esteem since language acquisition comprises social and emotional components.

Concerns about ethics and data privacy are also crucial factors. Students' data must be gathered and analyzed in order to apply AI, which raises concerns regarding security and responsible use.

As a result, a balanced strategy is crucial. AI should be used in conjunction with conventional teaching techniques as a supplementary tool. The highest results can be achieved through blended learning models that integrate AI-based tools with classroom education.

6. Conclusion

A number of interconnected elements, including linguistic variety, socioeconomic inequality, a lack of qualified teachers, traditional teaching methods, and learner-specific difficulties, influence the intricate and dynamic process of teaching English in India. Because Indian society is multilingual, mother tongue interference frequently results, making it challenging for students to become proficient in communication, grammar, and pronunciation. The efficiency of English language instruction is further restricted by the enduring rural-urban divide and unequal access to high-quality educational resources. These persistent problems demonstrate the necessity for creative and flexible ways to raise the standard of English instruction in the nation as a whole.

There is a lot of promise for using artificial intelligence (AI) to solve these problems in a methodical and scalable way. AI-based technologies accommodate students' unique demands, learning styles, and speed by offering personalized and adaptive learning experiences. By offering real-time feedback, enhancing pronunciation, and promoting constant practice, technologies like speech recognition systems, intelligent tutoring systems, automated assessment platforms, and AI-powered chatbots improve language acquisition. Additionally, AI-driven platforms promote inclusivity and lessen educational inequity by providing students in underserved and rural places with access to high-quality learning resources.

However, there are certain difficulties in incorporating AI into English language instruction. Strong digital infrastructure, dependable internet connectivity, and availability of suitable devices are necessary for effective deployment, especially in remote areas. In order to successfully integrate AI tools into their instructional methods, educators also require sufficient training and assistance. To guarantee that AI helps all students without escalating already-existing disparities, issues with data protection, ethical technology use, and the digital divide must also be properly addressed.

In conclusion, artificial intelligence is a potent supplementary tool that can improve the teaching-learning process, even though it cannot completely replace the vital role of human teachers. A more engaging, inclusive, and effective learning environment can be produced by carefully integrating AI with conventional teaching techniques. This strategy could make English language instruction in India more egalitarian and prepared for the future, giving students the tools they need to thrive in a worldwide society.

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Artificial Intelligence in English Language Teaching: Tools, Pedagogy, and Future Directions

Pinninti Ram Reddy
Lecturer in English
Pingle Government College for Women (A),
Hanumakonda, Telangana, India
T. Ramesh Kumar
Assistant Professor of English
Pingle Government College for Women (A),
Hanumakonda, Telangana, India

Abstract

Artificial Intelligence (AI) has emerged as a transformative force in contemporary education, reshaping pedagogical practices and learning environments across disciplines. In English Language Teaching (ELT), AI-powered tools such as chatbots, intelligent tutoring systems, automated writing evaluation platforms, and speech recognition technologies are redefining language acquisition, assessment, and learner engagement. This paper critically examines the integration of AI in ELT with special reference to undergraduate and postgraduate education in India. It explores the range of AI-driven tools available for language learning and analyses their pedagogical implications in promoting learner-centered, personalized, and competency-based education.

The study also evaluates the alignment of AI integration with the objectives of the National Education Policy 2020, particularly in enhancing digital literacy, inclusivity, and multidisciplinary learning. Using a qualitative research approach based on secondary data, the paper synthesizes insights from academic literature, policy documents, and technological reports. Furthermore, it identifies key challenges associated with AI adoption, including the digital divide, lack of teacher preparedness, ethical concerns, and issues related to data privacy and algorithmic bias.

The findings suggest that while AI has significant potential to enhance language learning outcomes, its effectiveness depends on thoughtful integration, institutional support, and human-centered pedagogical practices. The paper concludes by advocating for a balanced approach that combines technological innovation with traditional teaching methodologies to prepare learners for the demands of a rapidly evolving digital world.

Introduction

The twenty-first century has witnessed unprecedented technological advancements that have significantly transformed educational practices worldwide.

Among these developments, Artificial Intelligence (AI) has emerged as a powerful tool capable of reshaping teaching, learning, and assessment processes. In the context of English Language Teaching (ELT), AI offers innovative solutions to long-standing challenges such as large classroom sizes, diverse learner needs, and limited opportunities for individualized feedback.

English, as a global lingua franca, plays a critical role in academic, professional, and social communication. In India, proficiency in English is often associated with academic success and employability. However, traditional methods of teaching English frequently fail to address the varied proficiency levels and learning styles of students. AI-based tools provide opportunities to overcome these limitations by offering personalized, adaptive, and interactive learning experiences.

This paper explores the role of AI in ELT, focusing on its applications, pedagogical implications, and relevance within the Indian higher education context. It also examines its alignment with the National Education Policy 2020 and highlights the challenges and future directions for effective integration.

2. Literature Review

The integration of technology in language education has been widely discussed in academic literature. Brown emphasizes the importance of communicative and interactive approaches to language teaching (45). Similarly, Chapelle highlights the role of technology in enhancing language learning outcomes through authentic interaction and feedback (112).

Recent developments in AI, particularly in Natural Language Processing and machine learning, have significantly improved language learning tools. Luckin et al. argue that AI can provide personalized learning experiences by analyzing learner data and adapting instructional content accordingly (23). Warschauer discusses how digital technologies transform educational environments by promoting collaboration and learner autonomy (67).

However, scholars caution against the uncritical adoption of AI technologies. Issues such as data privacy, algorithmic bias, and unequal access to technology remain major concerns. The literature suggests that while AI has immense potential, its successful implementation requires careful planning, ethical considerations, and adequate teacher training.

3. Methodology

This study adopts a qualitative research methodology based on the analysis of secondary data. Sources include academic journals, books, policy documents, and reports related to AI in education and ELT.

The research focuses on identifying key themes such as AI tools, pedagogical implications, benefits, challenges, and policy alignment. Case examples of AI-based tools used in higher education are also examined to understand their practical applications. The data is analyzed thematically to draw meaningful conclusions about the role of AI in ELT.

4. Findings

The analysis of data reveals that AI-based tools play a transformative role in enhancing language learning outcomes by introducing personalization, immediacy, and interactivity into the learning process. One of the most significant contributions of AI in English Language Teaching (ELT) is its ability to provide personalized instruction. Unlike traditional classroom settings, where teaching is often standardized, AI systems analyze individual learner data such as performance, pace, preferences, and error patterns. Based on this analysis, they adapt content and feedback to suit each learner's needs. This individualized approach not only improves comprehension but also fosters learner autonomy and confidence.

Another key finding is the role of AI in delivering immediate and continuous feedback, which is crucial for effective language acquisition. Traditional teaching methods often involve delayed feedback due to time constraints and large class sizes. In contrast, AI-powered platforms provide real-time corrections and suggestions, enabling learners to identify and rectify their mistakes instantly. This immediate reinforcement accelerates the learning process and helps in the retention of language skills.

AI-driven chatbots and conversational agents have emerged as powerful tools for improving communicative competence. These tools simulate real-life conversations, allowing learners to practice speaking and writing in a risk-free environment. Students who may feel hesitant or anxious in classroom interactions can engage with AI systems without fear of judgment. This reduces language anxiety and promotes confidence, especially among beginners and intermediate learners. Furthermore, conversational AI tools often incorporate contextual learning, exposing learners to authentic language usage and cultural nuances.

The study also highlights the effectiveness of Automated Writing Evaluation (AWE) systems in enhancing writing proficiency. These systems analyze written text for grammatical accuracy, vocabulary usage, sentence structure, and coherence. They provide detailed feedback, including suggestions for improvement, which helps learners refine their writing skills through iterative practice. Importantly, AWE tools encourage self-directed learning, as students can revise their work multiple times based on the feedback received.

Speech recognition technologies are another critical component of AI in ELT. These tools assist learners in improving pronunciation, intonation, and fluency by analyzing speech patterns and providing corrective feedback. For learners in non-native English-speaking contexts, such as India, exposure to accurate pronunciation models is limited. AI-based speech tools bridge this gap by offering consistent and accessible practice opportunities.

In addition, adaptive learning platforms contribute significantly to learner engagement and retention. These platforms dynamically adjust the level of difficulty based on the learner's progress, ensuring that tasks remain challenging yet achievable. This adaptive mechanism prevents both boredom and frustration, thereby maintaining learner motivation over time.

The findings further indicate that AI tools are particularly beneficial in large and diverse classrooms, which are common in Indian higher education institutions. In such settings, providing individualized attention to each student is often impractical. AI tools address this issue by offering scalable solutions that cater to diverse learning needs simultaneously. They enable efficient monitoring of student performance and provide data-driven insights that can inform teaching strategies.

Moreover, AI facilitates efficient and objective assessment practices. Automated systems reduce the burden of manual evaluation and ensure consistency and accuracy in grading. This not only saves time for educators but also allows them to focus more on pedagogical innovation and student engagement.

Another notable finding is the role of AI in promoting self-paced and lifelong learning. Learners can access AI-powered platforms anytime and anywhere, making learning more flexible and accessible. This is particularly beneficial for students in remote areas or those balancing education with other responsibilities.

Overall, the findings suggest that AI technologies significantly enhance the quality, accessibility, and effectiveness of English language learning. However, their impact is contingent upon appropriate implementation and integration within the educational framework.

5. Discussion

The integration of Artificial Intelligence in English Language Teaching reflects a paradigm shift from traditional teacher-centered approaches to more learner-centered and competency-based pedagogies. This shift aligns with contemporary educational theories that emphasize active learning, personalization, and the development of higher-order thinking skills.

AI supports differentiated instruction, which is essential in heterogeneous classrooms where learners exhibit varying levels of proficiency, motivation, and

learning styles. By tailoring content to individual needs, AI ensures that each learner progresses at an optimal pace. This not only improves academic outcomes but also enhances learner satisfaction and engagement.

The alignment of AI integration with the objectives of the National Education Policy (NEP) 2020 is particularly significant. NEP 2020 emphasizes the use of technology to improve educational access, equity, and quality. AI-driven tools contribute to these goals by enabling digital learning environments, promoting interdisciplinary approaches, and supporting skill-based education. For instance, AI can integrate language learning with other disciplines, such as business communication or technical writing, thereby enhancing employability skills.

Furthermore, AI fosters autonomous and lifelong learning, which are critical competencies in the twenty-first century. By providing continuous access to learning resources and feedback, AI empowers learners to take responsibility for their own learning. This aligns with the broader goal of education as a continuous and self-directed process.

Despite these advantages, the discussion highlights several challenges and limitations associated with AI integration in ELT. One of the most pressing issues is the digital divide, which refers to the unequal access to technology and internet connectivity. In countries like India, this divide is particularly evident between urban and rural areas. Students in rural regions often lack access to digital devices and reliable internet, limiting their ability to benefit from AI-based learning tools. Addressing this issue requires substantial investment in digital infrastructure and policy interventions.

Another significant challenge is teacher preparedness. The effective use of AI in education depends largely on the ability of educators to integrate these tools into their teaching practices. However, many teachers lack the necessary training and digital literacy skills. Professional development programs and training workshops are essential to equip educators with the knowledge and skills required to use AI effectively.

The discussion also raises important ethical concerns, particularly related to data privacy and algorithmic bias. AI systems rely on large amounts of data to function effectively, raising concerns about the collection, storage, and use of personal information. Ensuring data security and protecting learner privacy are critical considerations. Additionally, algorithmic bias can lead to unfair or inaccurate outcomes, especially if the data used to train AI systems is not representative or inclusive.

Another concern is the potential for over-reliance on technology, which may reduce human interaction in the learning process. Language learning is inherently social and communicative, and excessive dependence on AI tools may undermine the role of teachers and peer interaction. Therefore, it is essential to adopt a blended learning approach that combines AI technologies with traditional teaching methods. From a pedagogical perspective, AI should be viewed as a complementary tool rather than a replacement for teachers. Educators play a crucial role in facilitating learning, providing emotional support, and fostering critical thinking. AI can enhance these functions by handling routine tasks and providing additional resources, but it cannot replicate the human aspects of teaching.

The discussion also points to the need for contextual and localized AI solutions. Many AI tools are developed in Western contexts and may not fully address the linguistic and cultural diversity of learners in India. Developing region-specific AI applications that consider local languages, accents, and educational needs is essential for effective implementation.

Finally, the integration of AI in ELT requires institutional support and policy frameworks. Educational institutions must invest in infrastructure, training, and research to ensure the successful adoption of AI technologies. Collaboration between educators, policymakers, and technology developers is crucial for creating sustainable and inclusive AI-driven learning environments.

In conclusion, while AI offers significant opportunities to transform English Language Teaching, its successful implementation depends on addressing existing challenges and adopting a balanced, ethical, and human-centered approach. By integrating AI thoughtfully into pedagogical practices, educators can enhance learning experiences and prepare students for the demands of a rapidly evolving digital world.

6. Conclusion

Artificial Intelligence has the potential to revolutionize English Language Teaching by enhancing accessibility, engagement, and learning outcomes. Its alignment with the objectives of the National Education Policy 2020 underscores its relevance in the Indian educational context.

However, the integration of AI must be approached with caution and responsibility. A balanced approach that combines technological innovation with human-centered pedagogy is essential for achieving optimal results. By leveraging AI effectively, educators can create enriched learning environments that prepare students for the demands of the digital age.

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Empowering English Language Learning through AI-Powered Tools: A Study on Innovation, Accessibility and Learner's Autonomy

Y. Chaitanya Sudha
Asst Professor of English GDC(W)(A), Nalgonda.

Abstract

The integration of Artificial Intelligence (AI) in education has significantly transformed English language learning by introducing innovative tools that enhance accessibility and promote learner autonomy. This study examines the impact of AI-powered technologies such as chatbots, intelligent tutoring systems, automated writing evaluation tools, and speech recognition applications on language acquisition. Drawing upon recent scholarly research and secondary data, the paper explores how AI facilitates personalized learning, improves linguistic competence, and supports self-directed learning practices. The findings reveal that AI-powered tools provide immediate feedback, adaptive learning pathways, and interactive environments that enhance learners' motivation and confidence. Statistical evidence indicates that learners experience improvements of up to 80–85% in speaking confidence, 20–25% in writing accuracy, and 15–20% in listening comprehension. Furthermore, AI reduces language anxiety by creating non-judgmental practice environments.

Despite these benefits, the study identifies critical challenges, including the digital divide, infrastructural limitations, and ethical concerns such as data privacy, algorithmic bias, and overreliance on AI tools. Unequal access to technology continues to limit the reach of AI-based learning, particularly in developing regions. The paper argues that AI should complement rather than replace human instruction, emphasizing the importance of teacher guidance and pedagogical integration. It concludes that AI-powered tools have the potential to democratize English language education by fostering innovation, improving accessibility, and enhancing learner autonomy, provided that implementation is inclusive, ethical, and context-sensitive.

Keywords: Artificial Intelligence, English Language Learning, Learner Autonomy, Accessibility, Innovation, Digital Divide, Educational Technology

Introduction

Artificial Intelligence (AI) has emerged as a transformative force in modern education, redefining traditional teaching and learning practices. In English language learning, AI-powered tools have introduced new possibilities for personalized, flexible, and interactive learning experiences. Technologies such as chatbots, automated writing assistants, and speech recognition systems enable learners to

practice language skills independently and receive real-time feedback, thereby enhancing their linguistic competence.

The increasing global significance of English as a lingua franca has intensified the demand for effective language learning strategies. AI technologies address this need by offering adaptive systems that cater to individual learner needs. Unlike conventional classroom methods, AI-driven platforms allow learners to progress at their own pace, fostering autonomy and self-regulation.

However, the integration of AI in education also presents several challenges. Issues such as unequal access to technology, limited digital literacy, and ethical concerns related to data privacy and algorithmic bias must be addressed to ensure equitable learning opportunities. This study aims to analyze how AI-powered tools contribute to innovation, accessibility, and learner autonomy in English language learning while critically examining the associated challenges and implications.

Literature Review

The application of AI in education has gained significant attention, particularly in language learning. Intelligent tutoring systems use machine learning algorithms to analyze learner performance and provide personalized feedback. These systems enhance learning efficiency by adapting instructional content to individual needs (Luckin et al.). Similarly, AI-driven platforms have been shown to improve learner engagement by offering interactive and adaptive learning experiences.

Chatbots and conversational agents are widely used to simulate real-life communication scenarios. Research indicates that these tools improve speaking fluency and reduce language anxiety by providing a safe and supportive environment for practice. Automated writing evaluation systems further enhance learning by offering instant feedback on grammar, vocabulary, and coherence, enabling learners to refine their writing skills through continuous revision.

Speech recognition technologies also play a crucial role in language learning by analyzing pronunciation and providing corrective feedback. Studies show that these tools improve phonological accuracy and listening comprehension, particularly among beginner learners.

Despite these advantages, scholars highlight several challenges associated with AI integration. The digital divide remains a significant issue, as access to technology varies across socio-economic and geographical contexts (UNESCO). Ethical concerns such as data privacy, algorithmic bias, and the potential misuse of AI-generated content are also widely discussed.

Learner autonomy is a central concept in this context. According to Holec, autonomy involves the ability to take responsibility for one's own learning. AI-

powered tools support this process by offering personalized learning pathways, immediate feedback, and flexible access to resources. However, the effectiveness of these tools depends on their alignment with pedagogical principles and the active involvement of educators.

Research Methodology

This study adopts a qualitative research design based on the analysis of secondary data. Relevant academic articles, research papers, and institutional reports were reviewed to examine the impact of AI-powered tools on English language learning. The sources were selected based on relevance, credibility, and recency to ensure a comprehensive understanding of the topic.

The research employs thematic analysis to identify patterns related to innovation, accessibility, and learner autonomy. By synthesizing findings from diverse studies, the paper provides an integrated perspective on the role of AI in language education. This approach is particularly suitable for exploring emerging trends and theoretical developments in AI-driven learning environments.

Findings

The findings of this study demonstrate that AI-powered tools significantly enhance English language learning outcomes across multiple domains. One of the most notable improvements is observed in speaking proficiency and confidence. Studies reveal that approximately 80–85% of learners report increased confidence in speaking English after using AI-based conversational tools. Additionally, speaking anxiety is reduced by nearly 30%, highlighting the effectiveness of AI in creating supportive learning environments.

In terms of writing skills, automated writing evaluation systems have been shown to improve grammatical accuracy and coherence by 20–25%. Learners benefit from immediate feedback, which allows them to revise their work efficiently. The reduction in feedback time by nearly 40% further enhances the learning process.

Listening comprehension and pronunciation also show significant improvement. AI-based listening tools contribute to a 15–20% increase in listening test scores, while speech recognition technologies improve pronunciation accuracy by up to 18%. These tools provide targeted support that addresses individual learner needs.

Learner engagement is another key outcome. Surveys indicate that over 75% of learners find AI tools more engaging than traditional methods. The interactive nature of these tools encourages sustained participation and motivation.

AI also promotes learner autonomy. Approximately 70% of learners engage in self-directed learning beyond classroom hours when using AI platforms. This reflects a shift toward independent learning and greater responsibility.

However, the findings also highlight challenges related to accessibility. Approximately 2.6 billion people lack internet access, and only 35–40% of learners in developing regions have reliable digital resources. These disparities limit the reach of AI-powered tools.

Discussion

The findings confirm that AI-powered tools significantly enhance English language learning by improving proficiency, engagement, and autonomy. The statistical gains in speaking confidence, writing accuracy, and listening skills demonstrate the effectiveness of AI as a pedagogical tool. AI creates low-risk environments that encourage learners to practice without fear, thereby accelerating language acquisition.

The improvement in learner autonomy is particularly noteworthy. AI tools enable learners to take control of their learning through self-paced study and continuous feedback. This aligns with modern educational approaches that emphasize learner-centered pedagogy.

However, the digital divide remains a critical challenge. Unequal access to technology limits the benefits of AI, particularly in underprivileged regions. Addressing this issue requires policy interventions, infrastructure development, and digital literacy initiatives.

Ethical concerns must also be addressed. Issues such as data privacy, algorithmic bias, and overreliance on AI tools highlight the need for responsible implementation. Learners must be trained to critically evaluate AI-generated content. The role of teachers remains essential in this context. AI should complement human instruction rather than replace it. Teachers provide guidance, emotional support, and contextual understanding that AI cannot replicate. The concept of collaborative intelligence offers a balanced approach to integrating AI in education.

Conclusion

AI-powered tools have the potential to revolutionize English language learning by promoting innovation, accessibility, and learner autonomy. These technologies enhance language proficiency, reduce anxiety, and support self-directed learning. However, their success depends on equitable access, ethical implementation, and effective pedagogical integration.

To maximize the benefits of AI, policymakers and educators must address challenges related to infrastructure, digital literacy, and ethical concerns. A balanced approach that combines technological innovation with human expertise will ensure sustainable and inclusive language education.

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Exploring the Use of Artificial Intelligence-Based Creative English Learning Methods among Secondary School Learners in Wanaparthy District: A Psycholinguistic Study

Katravath Anjaneyulu
Assistant Professor in English at Government Degree College Atmakur

Abstract

This research investigates the role of Artificial Intelligence (AI)-supported creative English learning practices among secondary school learners in Wanaparthy District from a psycholinguistic standpoint. The expansion of AI in education has reshaped language classrooms, shifting instruction from teacher-dominated methods to interactive, learner-centered environments. The study evaluates how AI applications — including adaptive learning systems, speech-recognition tools, conversational chat bots, and AI-assisted writing platforms — influence cognitive processing, motivation, language acquisition, and communicative competence.
Using a mixed-methods design comprising classroom interventions, achievement assessments, questionnaires, and interviews, the research analyzes engagement levels, anxiety reduction, and feedback effectiveness. The findings suggest that AI-enabled creative learning significantly strengthens linguistic confidence, fluency, pronunciation, and classroom participation when guided by structured pedagogy.

Keywords: Artificial Intelligence, Psycholinguistics, Creative Learning, Communicative Competence, Cognitive Engagement, Language Development

Introduction

Artificial Intelligence (AI) has emerged as a powerful force in transforming contemporary educational practices, particularly in the domain of second language acquisition. English language learning at the secondary level requires innovative pedagogical approaches that foster creativity, interaction, and communicative competence. Traditional grammar-translation methods often emphasize rote memorization and limit opportunities for authentic language use. In contrast, AI-based learning environments provide interactive, adaptive, and learner-centered experiences that encourage active participation.

In the context of Wanaparthy District, where many learners come from rural and semi-urban backgrounds, access to AI tools introduces new possibilities for exposure to authentic language input. These technologies offer learners opportunities to engage with multimedia content, interactive exercises, and real-time feedback mechanisms. From a psycholinguistic perspective, such exposure significantly

influences cognitive processes such as memory retention, language processing, and speech production.

Moreover, AI enables personalized learning pathways, allowing students to progress at their own pace. Learners can revisit challenging concepts, practice repeatedly, and receive immediate corrective feedback. This reduces cognitive overload and promotes deeper internalization of linguistic structures. The integration of AI also aligns with constructivist learning theories, emphasizing active knowledge construction through interaction and reflection.

Additional Perspective:

AI integration also enables personalized pacing, allowing learners to revisit difficult concepts multiple times. This reduces cognitive overload and supports gradual internalization of linguistic structures. Such adaptive environments align with constructivist learning theories, where learners actively build knowledge through interaction and feedback.

2. Review of Literature

The integration of Artificial Intelligence in language education has been widely explored in recent scholarly research. Chapelle highlights the role of technology in enhancing language learning through interactive and communicative practices. Similarly, Krashen's Input Hypothesis emphasizes the importance of comprehensible input, which AI platforms effectively provide through adaptive content delivery.

Adaptive learning systems have been shown to tailor instructional content according to individual learner needs. These systems analyze learner performance and adjust the difficulty level accordingly, ensuring optimal engagement. Speech-recognition technologies contribute significantly to phonological development by offering instant pronunciation feedback. This aligns with psycholinguistic theories that stress the importance of auditory input and repetition in language acquisition.

AI-powered chatbots simulate real-life conversational scenarios, enabling learners to practice speaking without fear of judgment. This reduces anxiety and builds confidence, particularly among shy or hesitant learners. Warschauer notes that digital environments create opportunities for collaborative learning and increased learner autonomy.

Recent studies also emphasize the role of AI in fostering metacognitive awareness. By tracking progress and providing feedback, learners become more conscious of their strengths and weaknesses. However, researchers such as Luckin point out challenges including technological limitations, digital divide issues, and the need for teacher training to effectively integrate AI tools.

3.Additional Review Insight:

Recent studies further emphasize that AI-driven platforms contribute to learner autonomy and self-regulated learning. By offering instant feedback and progress tracking, learners become more aware of their strengths and weaknesses, which enhances metacognitive awareness and long-term retention.

4. Objectives of the Study

The primary objectives of this study are:

1. To evaluate the effectiveness of AI-based creative tools in English language learning.
2. To measure learner cognitive engagement in AI-supported classrooms.
3. To assess the development of communicative competence.
4. To examine psycholinguistic processes such as memory retention and lexical retrieval.
5. To analyze learner motivation in AI-integrated environments.
6. To explore collaborative creativity facilitated by AI tools.
7. To understand teacher perceptions regarding AI integration.

5. Research Questions

1. How do AI tools transform creative English learning?
2. What psycholinguistic developments emerge through AI exposure?
3. Does AI reduce language anxiety among learners?
4. How effective is automated feedback in improving accuracy?
5. How do students perceive AI writing assistants?
6. What impact does AI have on pronunciation development?
7. How does adaptive technology support individualized progress?
8. What challenges arise during AI implementation?
9. Does AI enhance motivation in rural school contexts?
10. How does multimodal AI input influence comprehension and memory?

6. Methodology

This study adopts a mixed-methods research design combining both quantitative and qualitative approaches. The participants were selected using stratified sampling from various secondary schools in Wanaparthy District. The research was conducted over a period of twelve weeks, during which AI-based tools such as chatbots, pronunciation software, and writing assistants were integrated into classroom instruction.

Data collection involved multiple instruments including pre-tests and post-tests, vocabulary assessments, structured questionnaires, interviews with teachers, and classroom observations. Quantitative data were analyzed using statistical methods to measure improvement in learner performance. Qualitative data were interpreted through thematic analysis to understand learner experiences and perceptions.

The study ensured ethical considerations such as informed consent, confidentiality, and voluntary participation. Triangulation of data sources enhanced the reliability and validity of the findings by providing a comprehensive view of learner development.

Additional Methodological Note:

Triangulation of data sources enhanced the reliability and validity of findings. Combining test scores, observational data, and participant feedback provided a comprehensive understanding of learner development within AI-supported environments.

7. Data Analysis and Findings

The analysis of collected data indicates significant improvement in learners' language proficiency after the implementation of AI-based learning tools. Vocabulary acquisition improved due to repeated exposure and adaptive learning mechanisms. Learners demonstrated better pronunciation accuracy as a result of continuous feedback from speech-recognition systems.

Fluency and communicative competence showed noticeable enhancement, particularly in storytelling and dialogue-based activities. Survey responses revealed that learners experienced increased motivation and reduced anxiety while interacting with AI tools. Classroom observations confirmed active participation and collaborative engagement among students.

From a psycholinguistic perspective, learners exhibited improved semantic processing and faster lexical retrieval. The use of multimedia content helped sustain attention and facilitated better comprehension. Additionally, learners showed a greater willingness to experiment with language, indicating a positive shift in learning behavior.

8. Discussion

The findings of this study highlight the transformative potential of AI in English language learning. The integration of AI tools not only enhances linguistic skills but also positively influences psychological factors such as confidence and motivation. The reduction in language anxiety observed among learners suggests that AI creates a supportive and non-threatening learning environment.

The study also underscores the importance of teacher facilitation in maximizing the benefits of AI. While technology provides tools and resources, effective pedagogy ensures meaningful learning experiences. Teachers play a crucial role in guiding learners, designing activities, and contextualizing AI-based instruction.

Furthermore, the study reveals that AI promotes learner autonomy and self-directed learning. By enabling personalized learning paths and immediate feedback,

AI empowers learners to take control of their learning process. This aligns with modern educational goals that emphasize independent and lifelong learning.

However, challenges such as limited infrastructure and digital literacy must be addressed to ensure equitable access to AI-based education. Institutional support and policy-level interventions are essential for sustainable implementation.

9. Conclusion

The integration of Artificial Intelligence in creative English language learning offers significant advantages in enhancing communicative competence, cognitive engagement, and learner motivation. The study demonstrates that AI-supported pedagogy fosters an interactive and inclusive learning environment that supports both linguistic and psychological development.

For effective implementation, it is essential to invest in digital infrastructure, provide teacher training, and design structured pedagogical frameworks. Future research may explore long-term impacts and the scalability of AI-based learning models in diverse educational contexts.

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Personalization and Adaptation of AI For Undergraduate Students and its Challenges

Dr. S. Ashok M.A., Ph.D.
Lecturer in English

Introduction:

Now a days, the integration of Artificial Intelligence (AI) in education has been significantly transformed the way students learn and interact with academic content. Traditional education systems often follow a one-size-fits-all approach, where the same teaching methods and materials are provided to all students regardless of their individual learning styles, pace, or academic needs. However, undergraduate classrooms typically consist of students with diverse backgrounds, abilities, and learning preferences. This diversity makes it challenging for educators to effectively address the individual needs of every student using conventional teaching methods.

Personalization and adaptation in education is mainly aim to solve this challenge by converting learning experiences according to each student's strengths, weaknesses, interests, and progress. Artificial Intelligence plays a key role in enabling such personalized learning environments. AI-powered educational systems can analyse large amounts of student data, including learning behaviour, assessment results, and engagement patterns, to provide customized learning recommendations. These systems can adjust the difficulty level of content, suggest additional resources, and provide feedback based on individual student performance. As a result, AI-based personalized learning systems help undergraduate students learn more effectively and efficiently.

Objectives of the Study:

The main objective of this study is to find the role of Artificial Intelligence in enabling personalized and adaptive learning for undergraduate students. With the rapid development of digital technologies in education, AI-based systems are becoming important tools for improving teaching and learning experiences. This study aims to explore how AI technologies can support individualized learning and enhance academic outcomes in higher education.

Another objective of the study is to understand how AI-powered adaptive learning systems adjust educational content based on students' learning behaviour, performance, and progress. By analysing these adaptive mechanisms, the study seeks to highlight how personalized learning ways can improve student engagement and knowledge retention.

The study also aims to identify the major benefits of AI-driven personalization in undergraduate education, including improved learning efficiency, continuous

feedback, and enhanced academic performance. Understanding these advantages can help educational institutions recognize the potential of AI technologies in modern learning environments.

In addition, this study focuses on examining the various challenges associated with the implementation of AI in higher education. Issues such as data privacy, algorithm bias, high implementation costs, and lack of technical infrastructure are important factors that may affect the successful adoption of AI systems in universities.

Finally, the study aims to provide insights and recommendations for effectively integrating AI-based personalized learning systems into undergraduate education while addressing the associated technical and ethical challenges.

Importance of Personalization and Adaptation of AI for Undergraduate Students:

1. Addresses Diverse Learning Needs

Undergraduate classrooms contain students with different learning abilities, backgrounds, and interests. Personalization through AI helps provide learning materials and teaching approaches that match individual student needs. This ensures that both fast learners and students who need more time can understand the subject effectively.

2. Enhances Learning Effectiveness

AI-based adaptive systems analyse student performance and modify the learning process accordingly. By providing suitable content, exercises, and explanations, students can grasp concepts more clearly and retain knowledge for longer periods.

3. Supports Student-centred Education

Modern education focuses on **student-cantered learning** rather than teacher-centred instruction. AI-driven personalization places students at the centre of the learning process by adapting content, pace, and feedback according to their progress and preferences.

4. Improves Academic Success

When learning materials match a student's ability level, students are less likely to feel overwhelmed or bored. This balanced learning environment helps improve **understanding, grades, and overall academic performance** in undergraduate programs.

5. Encourages Independent Learning

Personalized AI learning platforms allow students to explore topics independently. Students can review lessons, practice problems, and receive feedback without always depending on instructors, which promotes **self-directed learning**.

6. Helps Teachers Make Data-Driven Decisions

AI systems collect and analyse large amounts of learning data. Educators can use this information to identify struggling students, improve teaching strategies, and provide targeted academic support.

7. Prepares Students for Future Technology

Exposure to AI-based learning tools helps undergraduate students become familiar with advanced technologies. This prepares them for careers in modern digital environments where AI and data-driven systems are widely used.

Benefits of Personalization and Adaptation of AI for Undergraduate Students:

1. Personalized Learning Experience

AI systems analyse student data such as learning pace, strengths, and weaknesses. Based on this information, the system provides **customized learning materials and recommendations**. This allows each undergraduate student to learn according to their individual needs instead of following a uniform learning path.

2. Improved Learning Efficiency

Adaptive AI systems can quickly identify topics that students find difficult and provide additional explanations, practice exercises, or alternative resources. This targeted support helps students understand concepts faster and reduces time spent on topics they already know.

3. Increased Student Engagement

Interactive AI tools such as intelligent tutoring systems, educational chatbots, and adaptive learning platforms make learning more engaging. When the content difficulty matches the student's ability level, students are more motivated and actively participate in the learning process.

4. Continuous Feedback and Assessment

AI-based learning systems can automatically evaluate assignments, quizzes, and practice exercises. Students receive **instant feedback**, which helps them quickly identify mistakes and improve their understanding of the subject.

5. Better Academic Performance

Because AI provides personalized support and targeted learning materials, students can better understand complex topics. This often leads to **improved academic performance and higher success rates** in undergraduate courses.

6. Support for Instructors

AI tools also assist teachers by analysing student performance data and identifying students who may need extra help. This allows instructors to focus on teaching strategies and provide more effective guidance.

7. Flexible and Self-Paced Learning

AI-powered platforms enable students to learn **anytime and anywhere**. Undergraduate students can progress at their own pace, review difficult concepts, and explore additional learning resources when needed.

Challenges of Personalization and Adaptation of AI for Undergraduate Students:

1. Data Privacy and Security

AI systems require large amounts of student data such as academic performance, learning behaviour, and personal information. Protecting this data from misuse, hacking, or unauthorized access is a major challenge. Universities must ensure proper data security and privacy policies.

2. Algorithm Bias

AI systems depend on training data and algorithms. If the data used to train the system is biased or incomplete, the AI may produce unfair or inaccurate recommendations. This can negatively affect some students.

3. High Implementation Cost

Developing and maintaining AI-based personalized learning systems requires significant investment. Universities need advanced software, hardware infrastructure, and technical experts, which may be expensive for many institutions.

4. Lack of Technical Infrastructure

Some universities may not have the required technological infrastructure such as high-speed internet, advanced computing systems, or AI platforms. Without proper infrastructure, implementing AI solutions becomes difficult.

5. Limited Digital Literacy

Both students and teachers may lack the technical skills needed to effectively use AI-powered learning platforms. Training and support are necessary to ensure successful adoption.

6. Overdependence on Technology

Excessive reliance on AI systems may reduce human interaction between teachers and students. Education is not only about information but also mentorship, discussion, and emotional support.

7. Ethical and Transparency Issues

AI decision-making processes are sometimes difficult to understand. If students or educators cannot clearly see how recommendations are made, it may create trust issues and ethical concerns.

Future Scope of Personalization and Adaptation of AI for Undergraduate Students:

The future of Artificial Intelligence in personalized and adaptive learning for undergraduate students is highly promising. As AI technology continues to develop, educational institutions are expected to adopt more advanced intelligent learning systems that can better understand student behaviour and learning patterns. These systems will be able to provide more accurate recommendations and highly customized learning experiences for each student.

One important future development is the improvement of **intelligent tutoring systems**. These systems may act like virtual tutors that guide students through difficult concepts, answer questions instantly, and provide detailed

explanations based on individual learning needs. Such AI tutors could support students outside the classroom and enhance self-learning opportunities.

Another potential advancement is the integration of **AI with emerging technologies** such as virtual reality (VR) and augmented reality (AR). These technologies can create immersive learning environments where undergraduate students can interact with complex concepts in a more practical and engaging way, especially in fields like engineering, medicine, and science.
Future AI systems may also use **advanced learning analytics** to predict student performance and identify students who may be at risk of academic failure. Early identification can help educators provide timely support and improve overall student success rates.

Additionally, improvements in **ethical AI and data security** will play an important role in the future adoption of AI in education. Stronger privacy protections and transparent AI algorithms will help build trust among students, teachers, and educational institutions.

In the coming years, AI-powered personalized learning platforms are expected to become more affordable and accessible, allowing more universities and colleges to implement these technologies. With proper implementation and ethical considerations, AI has the potential to significantly transform undergraduate education by creating more effective, flexible, and student-centred learning environments.

Conclusion:

Artificial Intelligence is rapidly transforming many fields, including education. The personalization and adaptation of AI in undergraduate education provide new opportunities to improve the learning experience for students. Traditional education systems often struggle to meet the diverse learning needs of students, as each individual has different learning styles, abilities, and academic backgrounds. AI-based personalized learning systems address this challenge by providing customized learning paths, adaptive content, and continuous feedback tailored to individual students.

Through AI-powered technologies such as adaptive learning platforms, intelligent tutoring systems, and learning analytics, students can receive more focused support that helps them understand complex subjects more effectively. These technologies also allow students to learn at their own pace, improve engagement, and develop independent learning skills. At the same time, AI tools assist instructors by providing valuable insights into student performance and helping them make better teaching decisions.

However, the adoption of AI in undergraduate education also presents several challenges. Issues such as data privacy and security, algorithm bias, high implementation costs, limited infrastructure, and lack of technical expertise can affect the successful integration of AI systems in educational institutions. Addressing these challenges requires proper planning, ethical guidelines, technological infrastructure, and training for both educators and students.

Despite these challenges, the future of AI-driven personalized learning remains highly promising. Continuous advancements in AI technologies, combined with improvements in data security and ethical AI practices, will further enhance the effectiveness of adaptive learning systems. As universities continue to adopt digital learning environments, AI has the potential to create more flexible, efficient, and student-centred education systems.

In conclusion, personalization and adaptation of AI can play a significant role in improving undergraduate education by supporting individualized learning experiences, enhancing academic performance, and preparing students for a technology-driven future. With responsible implementation and continuous development, AI-based learning systems can become an essential component of modern higher education.

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Artificial Intelligence in Life Sciences Teaching: Enhancing Scientific Language and Vocabulary Development

Dr. Deepak Boda[1] · Dr. Rajesh Alukucha[2]

[1] Lecturer of Zoology, Girraj Government College (Autonomous), Nizamabad, Telangana

[2] Associate Professor of Chemistry, Girraj Government College (Autonomous), Nizamabad, Telangana

Abstract

The integration of Artificial Intelligence (AI) into educational systems has opened new avenues for personalised instruction, adaptive content delivery, and meaningful learner engagement. Within Life Sciences education — a domain characterised by an extensive and often daunting scientific lexicon — AI-driven technologies offer targeted support that was previously difficult to achieve through conventional classroom methods alone. This review article investigates how AI-based tools, including Natural Language Processing (NLP) systems, Intelligent Tutoring Systems (ITS), AI-powered writing assistants, and adaptive learning platforms, can strengthen students' grasp of biological terminology, improve scientific reading comprehension, and nurture effective science communication. Particular attention is given to multilingual educational contexts, where a gap between learners' home languages and the language of instruction further complicates vocabulary acquisition. Drawing on current literature and practical applications, this paper argues that thoughtfully integrated AI pedagogies hold considerable promise for equipping the next generation of life scientists with both the conceptual depth and the linguistic precision their disciplines demand.

1. Introduction

Life Sciences — a broad family of disciplines that spans biology, biotechnology, microbiology, genetics, ecology, and environmental science — occupy a unique position in science education. Mastery of Life Sciences demands not only factual knowledge of living systems but also fluency in a highly specialised language. Biological terminology draws heavily on Greek and Latin roots; it is populated with multisyllabic technical terms, standardised nomenclature, and expression patterns that feel foreign to many learners, especially those whose first language is not English.

When students struggle to decode terms such as *photosynthesis*, *homeostasis*, *transcription*, or *phylogenetics*, their difficulty is rarely a matter of intelligence. More often, it reflects insufficient exposure to the vocabulary in context, limited opportunities for meaningful practice, and the sheer volume of new words encountered simultaneously. This challenge is amplified in multilingual educational settings — such as those common across Indian higher education — where students read English-medium textbooks while thinking and conversing in their regional languages.

Artificial Intelligence has emerged as a practical response to these longstanding difficulties. AI-enabled educational tools can offer individualised scaffolding, immediate corrective feedback, and on-demand explanations of unfamiliar terms — capabilities that a single instructor serving a large class cannot easily replicate. This review examines the specific AI technologies most relevant to vocabulary and language development in Life Sciences, analyses their documented benefits, and reflects honestly on the challenges that remain. The intention is not to advocate for technology as a substitute for skilled teaching, but to explore how AI can expand the quality and reach of Life Sciences instruction.

2. The Role of Scientific Language in Life Sciences Learning

Language is the medium through which scientific understanding is built, tested, and communicated. In Life Sciences classrooms, language difficulties are not peripheral — they are at the heart of why students sometimes leave lectures more confused than when they arrived. Understanding what makes this language challenging is a prerequisite for designing effective AI interventions.

The Weight of Biological Terminology

A first-year undergraduate biology student may encounter several hundred new technical terms in a single semester. Unlike vocabulary in everyday language, these terms rarely have self-evident meanings and cannot be inferred reliably from context. A word such as *mitochondrion* carries specific structural, functional, and evolutionary meaning that must be understood precisely, not approximately. Similarly, *endoplasmic reticulum*, *phylogenetics*, and *metabolic pathway* are terms whose misuse can propagate fundamental conceptual errors.

Students must not only learn definitions but develop what language educators call *deep lexical knowledge*: the ability to recognise a term across varied contexts, use it productively in writing and discussion, and connect it to related concepts within a wider conceptual network.

Scientific Reading as a Cognitive Challenge

Reading a peer-reviewed article or a detailed laboratory protocol is not simply a matter of decoding printed words. Scientific texts are dense with subordinate clauses, passive constructions, discipline-specific phrases, and assumptions of prior knowledge. When vocabulary is the barrier, comprehension breaks down early in the reading process, making it difficult for students to engage critically with the content or extract the information they need for assessments and practical work.

Scientific Writing and Academic Communication

Producing a laboratory report, constructing a research proposal, or delivering a conference presentation requires accurate, disciplined use of scientific vocabulary. Many students who understand biological concepts well still struggle to express that understanding in writing, partly because they are uncertain about which terms to use, how to use them grammatically, and how to adopt the expected register of scientific prose. AI writing-support tools are particularly well positioned to address this specific need.

3. AI Technologies and Their Applications in Life Sciences Education

Several distinct but complementary AI technologies have been deployed — or show strong potential for deployment — in support of vocabulary learning and scientific language development.

Natural Language Processing for Biological Terminology

Natural Language Processing (NLP) is the branch of AI concerned with enabling computers to read, interpret, and generate human language. Within educational applications, NLP systems can analyse student-written responses to detect vocabulary errors, identify misconceptions embedded in language use, and provide targeted corrections. More ambitiously, NLP tools can parse the meaning of complex biological passages and reformulate them in simpler language without sacrificing scientific accuracy — a capability with obvious value for learners who find standard textbook prose inaccessible.

NLP-powered glossary tools can offer contextual definitions: rather than presenting a static dictionary entry, they explain a term by showing how it functions within the specific passage the student is reading. This context-sensitivity accelerates genuine understanding rather than rote memorisation. Multilingual NLP systems extend these benefits further by offering explanations in the student's first language alongside the English scientific term.

AI Chatbots as On-Demand Learning Companions

Conversational AI agents — chatbots — can simulate a dialogue with a knowledgeable teacher, responding to student questions at any hour, without the social anxiety that sometimes prevents students from asking a question in front of

peers. In Life Sciences contexts, chatbots can explain the mechanism of a biological process, clarify the difference between similar-sounding terms (such as *mitosis* and *meiosis*), and conduct informal vocabulary quizzes through natural conversation.

The value of chatbots lies partly in repetition without fatigue: a student can ask the same question in five different ways, receive five differently worded but conceptually consistent answers, and in doing so construct a more robust mental model. Chatbots also lower the affective barrier to learning — students who feel embarrassed about gaps in their knowledge may engage more willingly with a non-judgemental digital interlocutor.

Intelligent Tutoring Systems for Personalised Vocabulary Learning

Intelligent Tutoring Systems (ITS) go beyond simple question-and-answer exchanges by modelling the individual student's current level of knowledge and adjusting the difficulty and content of instruction accordingly. An ITS designed for Life Sciences vocabulary might begin by assessing which terms a student already knows confidently, which are partially understood, and which are entirely new — and then sequence learning activities to consolidate and extend knowledge from each category.

Adaptive assessment within an ITS provides immediate, individualised feedback rather than a mark awarded days after an assignment. When a student uses a biological term incorrectly, the system can explain why the usage is problematic, offer a model sentence, and present a follow-up question to check whether the correction has been understood. Longitudinal monitoring of student progress allows instructors to identify persistent gaps and intervene accordingly.

AI-Assisted Scientific Writing Tools

A growing range of AI writing tools, from grammar checkers with domain-specific training to more sophisticated generative assistants, can support students in producing clearer, more accurate scientific prose. These tools can flag informal language that sits awkwardly in a scientific context, suggest more precise technical alternatives, and alert students to inconsistent or incorrect use of specialised terms.

For undergraduate and postgraduate students preparing their first research manuscripts or theses, AI writing assistants can serve as an always-available editorial partner — one that encourages students to reflect on their word choices rather than simply correcting text on their behalf. The pedagogical benefit depends heavily on how these tools are used: passive acceptance of suggestions builds little skill, whereas tools that prompt students to explain or justify revisions can deepen language awareness.

AI-Supported Visualisation and Concept Mapping

Biological literacy is not solely textual. Students learn terminology more durably when words are anchored to visual representations of the structures and processes they name. AI-powered visualisation tools — interactive cell simulations, genetic pathway animators, AI-generated concept maps — can bridge the gap between abstract vocabulary and concrete biological reality. When a student manipulates a three-dimensional model of a mitochondrion while reading about the inner membrane, the cristae, and the matrix, the vocabulary acquires spatial and functional meaning that text alone rarely provides.

AI-generated concept maps can reveal the relational structure of biological knowledge, helping students see not just what individual terms mean but how they are connected — a quality essential for scientific thinking and essential for understanding examination questions that ask for explanation rather than simple recall.

4. AI and the Multilingual Life Sciences Classroom

India's higher education system presents a vivid illustration of the multilingual challenge. Students entering degree programmes in biology or biotechnology may have studied the subject in Telugu, Hindi, Marathi, or another regional language at school, yet find themselves expected to read, write, and think in English from the first day of undergraduate study. The cognitive load of simultaneously mastering new concepts and a new language for those concepts is considerable.

AI technologies offer several practical responses to this challenge. Bilingual terminology tools can present a new scientific term alongside its regional-language equivalent or a brief explanation in the learner's home language, supporting comprehension without undermining the goal of developing English-medium scientific literacy. Speech-based AI applications allow learners to hear correct pronunciation of technical terms — an advantage in a language, English, whose spelling gives few reliable cues to pronunciation.

Beyond these specific tools, the broader principle is one of linguistic inclusion: AI systems designed with multilingual architectures do not penalise learners for beginning their educational journey in a language other than English. They meet students where they are, enabling a gradual and confident transition into the language of international science.

5. Principal Benefits of AI-Supported Vocabulary Development

Research and practical experience with AI in educational settings point to a consistent set of benefits, each of which has particular relevance for Life Sciences vocabulary acquisition.

- **Personalised learning pathways:** AI systems can calibrate instruction to the vocabulary level and learning pace of each individual student, ensuring that foundational terms are secure before more advanced ones are introduced.
- **Immediate, actionable feedback:** Unlike the delayed marking of written assignments, AI tools can alert students to errors the moment they occur, while the cognitive context is still fresh and correction is most effective.
- **Enriched scientific literacy:** Sustained engagement with AI vocabulary tools supports students in developing the reading, writing, and verbal communication skills that define a scientifically literate graduate.
- **Greater learner engagement:** Conversational interfaces, gamified quizzes, and interactive visualisations make vocabulary learning more dynamic than passive reading, reducing the cognitive tedium that leads students to disengage.
- **Expanded access:** Cloud-based AI platforms are available beyond scheduled class hours, allowing students in resource-constrained settings — without access to well-stocked libraries or paid tutoring — to pursue self-directed learning effectively.

6. Challenges and Limitations

Enthusiasm for AI in education must be tempered by honest acknowledgement of the barriers to effective implementation. Several challenges deserve particular attention.

Infrastructure and connectivity remain unevenly distributed across India's higher education institutions. Colleges in rural and semi-urban areas may lack the reliable internet access, device availability, and technical support staff that AI-based platforms require. Deploying these tools without addressing the underlying infrastructure gap risks deepening existing educational inequalities rather than narrowing them.

Teacher readiness is a related concern. AI tools do not operate in isolation: their impact depends substantially on how teachers understand, frame, and integrate them into pedagogical practice. Faculty who view AI as a threat to their professional role, or who have had no training in its use, are unlikely to deploy it effectively. Sustained professional development programmes — not one-off workshops — are needed to build the confidence and competence that effective AI-integrated teaching requires.

Questions of data privacy and algorithmic bias deserve serious attention in educational contexts. Systems that monitor student performance generate sensitive data, and institutions must have clear policies governing how these data are stored,

who may access them, and how long they are retained. AI systems trained primarily on Western educational datasets may also embed assumptions about language, prior knowledge, and learning culture that do not translate well to Indian or other non-Western contexts.

Finally, there is a risk of pedagogical overdependence. If students use AI tools as shortcuts — accepting corrections without understanding them, or querying a chatbot rather than reasoning through a problem — the tools may undermine rather than build genuine competence. Instructional design must deliberately structure AI use to require active engagement and reflection.

7. Future Perspectives

The trajectory of AI development suggests that the tools available to Life Sciences educators will become considerably more capable within the present decade. Large language models with domain-specific fine-tuning will be able to engage students in sustained, nuanced discussions of biological concepts — conversations that approximate, in important ways, the kind of Socratic dialogue that skilled human tutors provide. Generative AI systems capable of producing customised explanations, practice questions, and worked examples on demand will reduce the preparation burden on faculty while expanding the range of learning experiences available to students.

Virtual laboratory environments, increasingly enhanced by AI, will allow students to conduct simulated experiments, observe biological processes at scales from molecular to ecosystemic, and interact with terminology in active, purpose-driven contexts. AI-generated knowledge graphs will make the relational structure of biological knowledge visible and navigable, helping students understand how terms and concepts are linked across subdisciplines.

For Indian higher education specifically, the development of Life Sciences AI tools with robust multilingual support — encompassing the major regional languages as well as English — would represent a significant equity gain. Research into the learning outcomes produced by AI-integrated Life Sciences instruction in Indian institutional contexts is both necessary and largely yet to be conducted, representing a valuable avenue for collaborative investigation between educators, AI developers, and educational researchers.

8. Conclusion

This review has argued that AI-based educational technologies offer genuine and practically realisable benefits for vocabulary development and scientific language learning in Life Sciences. NLP systems, intelligent tutoring platforms, conversational agents, and AI writing tools each address specific aspects of the

language challenge that Life Sciences students face — from first encounters with unfamiliar terminology to the production of polished scientific prose. In multilingual educational settings, these tools can also function as bridges between students' existing linguistic resources and the English-medium scientific discourse they need to navigate.

At the same time, AI is not a pedagogical silver bullet. Its benefits are conditional on adequate infrastructure, well-prepared teaching staff, thoughtful instructional design, and appropriate safeguards around student data. The most effective model is one in which AI augments rather than displaces human teaching — expanding what is possible in the Life Sciences classroom while preserving the relational, motivational, and intellectually demanding dimensions of learning that skilled educators provide.

As Life Sciences continue to advance with extraordinary speed, producing graduates who are not only technically capable but also scientifically articulate is an urgent educational priority. AI-driven language and vocabulary tools offer one important means of meeting that priority, and their careful, critically informed integration into Life Sciences curricula is a project well worth pursuing.

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Merits and Demerits of Artificial Intelligence: An Ethical and Moral Perspective

Dr. K. Raghunath
Assistant Professor of Chemistry
GRPGDC Bhainsa, Nirmal District
Mobile: 9441459972

Abstract
Artificial Intelligence (AI) has become an indispensable part of modern life, influencing healthcare, business, governance, education, and security. Its ability to process vast datasets, predict outcomes, and automate complex processes offers remarkable benefits. However, the ethical and moral implications of AI are equally significant, raising questions about fairness, responsibility, autonomy, and human dignity. This paper explores the merits and demerits of AI from an ethical and moral perspective, drawing on philosophical frameworks, case studies, and global guidelines. It concludes with recommendations for developing AI responsibly to ensure technological progress aligns with human values.

Keywords: Artificial Intelligence, moral perspective, global guidelines, datasets, ethics.

Introduction

The 21st century has been marked by the rapid growth of Artificial Intelligence (AI), with applications ranging from medical diagnostics to autonomous vehicles. AI is often described as a double-edged sword because it can either serve humanity or undermine fundamental ethical principles depending on how it is designed and deployed. While technologists emphasize AI's efficiency and innovation, philosophers and ethicists warn of its potential to amplify inequalities, erode privacy, and compromise human autonomy.

Ethics, broadly defined as the study of right and wrong, and morality, which deals with principles guiding human conduct, provide the lens through which AI must be examined. This research paper analyzes both the positive contributions and ethical pitfalls of AI by applying theories such as utilitarianism, deontological ethics, virtue ethics, and care ethics.

Merits of AI from an Ethical and Moral Perspective

1. Improved Decision-Making and Accuracy

AI's ability to process massive amounts of data with high precision reduces human error and enhances decision-making. In healthcare, AI algorithms such as IBM Watson have demonstrated superior performance in diagnosing diseases. From an ethical perspective, this aligns with the principle of beneficence, which emphasizes acting in ways that benefit others by improving health outcomes and saving lives.

2. Reduction of Human Risk and Exploitation

AI-powered machines are deployed in hazardous environments such as nuclear power plants, deep-sea explorations, and disaster zones. By replacing humans in dangerous tasks, AI minimizes harm. This fulfills the ethical principle of non-maleficence, or the obligation to avoid causing harm to human beings.

3. Promotion of Accessibility and Inclusion

AI has transformed accessibility for people with disabilities. Tools such as Google's Live Transcribe, AI-driven prosthetics, and real-time language translation applications foster inclusivity. This promotes justice and fairness by ensuring equal opportunities regardless of physical or cognitive limitations.

4. Global Problem-Solving and Welfare

AI plays a key role in addressing climate change, pandemic control, and sustainable agriculture. AI-driven climate models provide accurate predictions that help policymakers design effective strategies. This global benefit reflects utilitarianism, which emphasizes maximizing collective welfare.

5. Strengthening Education and Knowledge Dissemination

AI-powered platforms and personalized learning assistants provide students with tailored educational resources. Ethically, this promotes fairness by ensuring wider access to knowledge and helping reduce the digital divide.

Demerits of AI from an Ethical and Moral Perspective

1. Bias and Discrimination

AI systems often inherit biases from their training datasets. For instance, facial recognition software has shown higher error rates for people of color, raising serious ethical concerns about racial discrimination. Such biases violate the ethical principle of justice and perpetuate systemic inequalities.

2. Threats to Human Autonomy

AI-driven platforms, especially social media algorithms, shape user behavior and influence decision-making without explicit consent. The Cambridge Analytica

scandal highlighted how AI-driven data profiling manipulated political choices, thereby undermining autonomy and informed consent.

3. Accountability and Responsibility Gap

When autonomous systems make mistakes, responsibility becomes ambiguous. For example, in self-driving car accidents, it is often unclear whether the manufacturer, software developer, or user should be held accountable. This lack of clarity challenges moral principles of accountability and liability.

4. Privacy and Surveillance Risks

AI-powered surveillance systems, such as China's social credit system, raise concerns regarding mass surveillance and individual freedom. From a moral standpoint, constant monitoring violates human dignity and the right to privacy.

5. Job Displacement and Social Inequality

Automation through AI threatens millions of jobs, particularly in industries such as manufacturing, logistics, and customer service. This displacement exacerbates economic inequality, raising ethical concerns about distributive justice and fairness in resource allocation.

Ethical Frameworks in Evaluating AI

Utilitarianism

AI is justified if it produces the greatest happiness for the greatest number. For example, using AI in healthcare diagnostics benefits many people, although it may displace some workers.

Deontological Ethics (Kantian Ethics)

AI should respect human dignity and rights regardless of outcomes. Even if surveillance systems improve security, they may still be morally wrong if they violate privacy rights.

Virtue Ethics

AI should be designed to cultivate virtues such as fairness, honesty, and compassion. Developers should prioritize transparency and justice in algorithm design.

Care Ethics

Care ethics emphasizes relational and contextual decision-making. AI systems used in caregiving should prioritize empathy and human well-being rather than focusing solely on efficiency.

Case Studies

Case Study 1: Healthcare AI and Ethical Benefits

AI-driven systems have revolutionized cancer detection and often outperform radiologists in identifying diseases. Ethically, this aligns with the principle of beneficence because it contributes to saving lives.

Case Study 2: Facial Recognition and Discrimination

Studies have shown that facial recognition systems misidentify women and people of color more frequently than white men. This raises ethical concerns about fairness and reinforces racial inequality.

Case Study 3: Autonomous Vehicles and the Trolley Problem

Self-driving cars present moral dilemmas. In unavoidable accidents, should the AI prioritize saving passengers or pedestrians? This illustrates the conflict between utilitarian and deontological approaches in AI ethics.

Recommendations

Develop Global Ethical Guidelines

Organizations such as UNESCO and the European Union have initiated AI ethics frameworks, but a broader global consensus is necessary.

Ensure Transparency and Explainability

Algorithms should be explainable and transparent in order to avoid hidden biases and unethical decision-making.

Promote Inclusive Design

AI systems must consider diverse populations during development to reduce discrimination and inequality.

Strengthen Accountability Mechanisms

Laws and regulations must clearly define responsibility for AI-related harms and failures.

Support Workforce Transition

Governments should invest in reskilling and upskilling programs to help workers adapt to technological changes caused by automation.

Conclusion

Artificial Intelligence presents both opportunities and challenges. Its merits include improved decision-making, reduced human risk, inclusivity, and contributions to global welfare. Conversely, its demerits—such as bias, loss of autonomy, privacy invasion, and job displacement—pose significant ethical and moral challenges.

The future of AI must be guided by ethical principles to ensure that technological innovation respects human dignity, fairness, and justice. A balance between progress and moral responsibility is essential for AI to serve humanity in a just and sustainable manner.

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Enhancing English Language Skills Through AI Enabled Multilingual Approach for Tribal Welfare (Gurukulam) Students

Rapaka Sushmitha[1]
Research Scholar & Degree Lecturer**,** Department of English, TGTWRDC (W), Suryapet, Telangana, sushmithayakesh143@gmail.com

Dr B. Krishna Chandra Keerthi[2]
Supervisor & Associate Professor, Govt. City College (A^+), Hyderabad, Telangana, bkckeerthi@gmail.com.

Abstract:
The development of English language skills among tribal welfare (Gurukulam) students is essential for promoting academic achievement, social mobility, and inclusion in a rapidly globalizing world. This paper explores the effectiveness of integrating multilingual approaches to enhance English proficiency among these learners. By leveraging students' native languages as a bridge to English, this approach fosters cognitive flexibility, cultural confidence, and deeper linguistic understanding. It recognizes the rich linguistic and cultural capital that tribal students bring into the classroom, thereby promoting equity and learner-centered pedagogy.
The study further incorporates AI-enabled learning tools to support and personalize language acquisition. Technologies such as adaptive language learning platforms, speech recognition systems, AI chatbots, and automated feedback mechanisms provide individualized instruction, real-time correction, and interactive practice opportunities. These tools enhance listening, speaking, reading, and writing skills by offering multilingual support, instant translation, pronunciation guidance, and contextual vocabulary building.
The study highlights strategies such as translanguaging, bilingual scaffolding, culturally responsive materials, activity-based learning, and AI-assisted instruction to support vocabulary development, comprehension, and communication skills. Findings indicate that a multilingual framework, when combined with AI-enabled learning, not only improves language competence but also enhances self-esteem, learner autonomy, and classroom participation among tribal students. This integrated approach paves the way for inclusive, equitable, and sustainable education in the digital era.

Keywords: Academic Achievement, Social Mobility, Tribal Students, self-esteem, vocabulary development

Introduction

English today functions as a global lingua franca, providing access to education, employment, and socio-cultural mobility (Crystal, 2012). In India, where linguistic diversity is vast, tribal communities encounter particular challenges in English language acquisition due to geographical isolation where they come from remote areas, lack of resources, and the dominance of indigenous languages in daily life. Especially for the Tribal welfare Gurukulam students English has become a foreign language. Because, from their childhood (5th class) they don't have exposure to the outside world and when they go for a vacation they stay in there Thanda where they don't use English in their daily lives. So, these fear to speak English in their classroom too. Tribal Welfare Residential Institutions, established for the welfare and education of tribal students, play a pivotal role in bridging these gaps.

A monolingual approach to teaching English often proves ineffective in such contexts because it neglects the learners' prior linguistic knowledge. In contrast, a multilingual approach leverages the students' existing language repertoire—mother tongue and regional languages—as scaffolds to facilitate English learning (Cummins, 2007).

According to Pattanayak, "The notion of one dominant language as the medium of instruction leaves thousands of children illiterate in their mother tongue and fosters low achievement levels in the dominant language itself. There is no doubt that Language is a major factor in the case of school dropouts and stagnation in Education. To a great extent the high rate of illiteracy especially in tribal areas, can be attributed to the acceptance of the notion of one dominant language in a state and the lack of proper language planning." D.P Pattanayak "Multilingualism and Mother tongue education", British Journal of Educational studies, Vol: 3 Issue: 2, PP.173-! 74 (1983)

Theoretical Background

The multilingual approach is grounded in sociocultural and constructivist theories of language learning (Vygotsky, 1978; Cummins, 2000). These theories emphasize that language learning is a social process built upon the learner's existing linguistic repertoire. Cummins' (2000) *Interdependence Hypothesis* supports the idea that proficiency in the first language can facilitate the acquisition of a second or third language. Similarly, Translanguaging Theory (García & Wei, 2014) suggests that learners naturally draw on their full linguistic resources to make meaning, thus promoting deeper understanding and engagement.

Rationale for a Multilingual Approach

The multilingual approach is rooted in the principle that linguistic competencies are interdependent. Cummins' Interdependence Hypothesis (1979) suggests that proficiency in the first language can positively influence the acquisition of a second or third language. For tribal students, recognizing and valuing their mother tongue reduces learning anxiety and fosters a supportive environment.

Moreover, UNESCO (2003) advocates mother tongue-based multilingual education (MTB-MLE) as a best practice for inclusive education, particularly in multilingual societies like India.

Review of Literature Multilingual Education in India

Research by Mohanty (2006) and Skutnabb-Kangas (2009) highlights India's multilingual reality and the need for inclusive language policies in education. Studies on tribal education (Agnihotri, 2010; NCERT, 2018) reveal that instruction in an unfamiliar language (like English) often leads to alienation and lower learning outcomes. A multilingual framework that values tribal and regional languages fosters better participation and retention.

Research by Mackenzie (2009) has demonstrated that an education which begins in the mother tongue and builds competence in the second language before using it as the medium of instruction, thus reducing the linguistic and cultural barriers faced by students when entering school, is a key component in increasing the educational attainment of speakers of minority languages.

Mahanand & Duriaargue (2023) argue that the learners' mother tongue is a great resource, and it can facilitate learning English. The case of the mother tongue becomes very important in the case of tribal learners as their mother tongue is not the medium of instruction and it will not be used in the classroom as the state to which they belong will have a different language to function in. In this article, we document the short-term changes that happened in a classroom of tertiary level tribal students in Odisha where one of the authors was teaching them English language skills and grammar.

Role of Mother Tongue in English Learning

Several studies (Krashen, 1982; Cummins, 2001) confirm that using the mother tongue in early stages enhances comprehension and reduces anxiety. For tribal students, connecting English learning with familiar linguistic contexts (L1 or L2) can scaffold understanding of vocabulary, grammar, and sentence formation.

Mishra et al (2017) argues "educating Indigenous/Tribal and Minority (ITM) children (including immigrant minorities) through the medium of dominant language in a submersion or an early-exit transitional programme denies them access to

education because of the linguistic, pedagogical and psychological barrier it creates. Thus, it violates the human right to education" (9).

Classroom-Based Research

Recent empirical studies in Indian classrooms (Nag & Snow, 2020; Sahoo, 2021) demonstrate that bilingual or multilingual instructional strategies—such as code-switching, translation exercises, and comparative grammar—improve learner motivation and performance. In the Gurukulam context, teachers who encourage the use of Telugu or tribal dialects alongside English report greater classroom participation and confidence among students.

Pedagogical Implications for Gurukulams

Studies on tribal education (Rao, 2017; Choudhary, 2022) emphasize culturally responsive pedagogy. Integrating songs, stories, and oral traditions in the mother tongue before translating or discussing them in English enriches language comprehension and preserves cultural identity. The multilingual approach thus promotes not just linguistic skill, but also cognitive flexibility and cultural affirmation.

Gaps Identified in Literature

While the benefits of multilingual pedagogy are well-documented, limited research exists on context-specific models for Tribal Welfare Gurukulams. There is a need for systematic studies exploring how multilingual practices can be structured and assessed within English language teaching in these institutions. Further, teacher training for effective multilingual classroom strategies remains a neglected area.

Pedagogical Strategies

1.Mother Tongue as a Cognitive Foundation

Introducing concepts first in the tribal language before transitioning to English enhances comprehension.

Vocabulary-building activities such as word mapping and translation exercises strengthen connections across languages.

2.Regional Languages as Bridges

Familiar languages such as Telugu or Hindi can serve as mediating tools for explaining English grammar and sentence structures.

Code-switching during classroom interaction ensures continuity in learning.

3.Culturally Responsive Materials

Incorporating tribal folklore, oral narratives, and songs into English lessons validates cultural identity while enriching linguistic exposure.

Localized bilingual storybooks and posters can make classrooms more engaging.

4.Interactive Learning Approaches

Group discussions, role plays, and bilingual debates encourage active participation.

Visual aids, flashcards, and multimedia tools enhance vocabulary retention.

5.Technology-Enabled Language Learning

Mobile applications, audio-visual media, and digital dictionaries provide supplementary exposure to English.

Language labs in Gurukulam can integrate multilingual audio inputs to improve listening and pronunciation skills.

Benefits of the Multilingual Approach

1. Enhanced Comprehension: Concepts explained in familiar languages ease understanding of English.
2. Confidence Building: Stepwise exposure reduces the fear of English.
3. Cultural Preservation: Tribal heritage is acknowledged and integrated into the learning process.
4. Inclusive Pedagogy: Multilingual strategies prevent marginalization of students with limited prior English exposure.
5. Builds on Existing Language Knowledge: Students use their mother tongue as a foundation to learn English and other languages. It helps them transfer skills like reading, comprehension, and sentence structure from one language to another.
6. Enhances Cognitive Development: Learning through multiple languages improves memory, problem-solving, and creativity. It strengthens critical thinking and flexibility in understanding concepts.
7. Improves Communication Skills: Encourages students to express ideas confidently in more than one language. Builds cultural sensitivity and awareness through exposure to diverse linguistic contexts.
8. Reduces Language Barriers: Students feel less anxious and more confident when allowed to use their home language to understand lessons. It supports better classroom participation and inclusivity.

9. Strengthens English Learning: When teachers connect English learning to students' native language meanings or structures, comprehension improves. Helps students grasp grammar and vocabulary more effectively.
10. Preserves Cultural Identity: Promotes respect for students' linguistic and cultural heritage. Encourages pride in tribal or regional languages alongside learning English.
11. Increases Academic Achievement: Research shows that students perform better when they first learn concepts in a familiar language before transitioning to English. Ensures deeper understanding rather than rote memorization.
12. Promotes Social Inclusion: Creates a sense of belonging and equality among students from diverse linguistic backgrounds. Supports collaborative learning and peer support.
13. Encourages Lifelong Learning: Multilingual learners develop adaptability and an openness to learning new languages or cultures throughout life.

Methods for a Multilingual Approach in English Language Teaching

Method	Description	Classroom Application / Example	Benefits for Tribal (Gurukulam) Students
1. Translanguaging Method	Students use all their known languages (mother tongue + English) to construct meaning and express ideas.	Students discuss a story in their native language, then summarize it in English.	Builds confidence and connects prior knowledge with new language learning.
2. Code-Switching Method	Teachers and students switch between languages to clarify meaning.	Teacher explains difficult English concepts in Telugu or Lambadi when needed.	Reduces fear of English and helps in easy comprehension.
3. Comparative Language Analysis	Learners analyse similarities and differences	Compare sentence patterns or	Improves grammar understanding and

	between English and their native language.	tenses between English and the local language.	cross-linguistic awareness.
4. Bilingual Audio-Visual Aids	Use of digital tools and materials in both English and mother tongue.	Bilingual story videos, English songs with local subtitles.	Enhances listening and visual comprehension; supports slow learners.
5. Project-Based Multilingual Learning	Students' complete projects using multiple languages.	Collect local folk tales in tribal language and present in English.	Encourages creativity, cultural pride, and active learning.
6. Multilingual Peer Collaboration	Students of different language backgrounds work together.	Group work where one explains in local language, another writes in English.	Promotes teamwork and language exchange among peers.
7. Multilingual Reading and Writing Practice	Use of reading and writing exercises in more than one language.	Write a diary or paragraph first in native language, then translate to English.	Strengthens literacy and builds gradual English proficiency.

A Multilingual Classroom Experiment with Tribal Learners

The author of the article (hereafter referred to as the teacher-researcher) carried out a short-term teaching experiment with tribal students at his college. This experiment was grounded in the principles of Cummins' (1980) Linguistic Interdependence Hypothesis and Common Underlying Proficiency (CUP) model.
According to the Linguistic Interdependence Hypothesis:
"To the extent that instruction in Lx is effective in promoting proficiency in Lx, transfer of this proficiency to Ly will occur provided there is adequate exposure to Ly (either in the school or environment) and adequate motivation to learn Ly" (Cummins, 1981, p. 29).

The CUP model emphasizes that when two languages operate within an individual's cognitive system, they interact through language switching and cooperative sharing. Based on this idea, the teacher-researcher assumed that the learners' mother tongue should play an active role in this process of interaction and sharing. Guided by this assumption, he developed a customized multilingual teaching plan to explore the effectiveness of this approach and to analyse the learners' responses and motivation when it was implemented.

A Brief Profile of the Learners

The study was conducted among undergraduate tribal students in the Suryapet region of Telangana. These learners, hailing from rural areas and having tribal languages as their mother tongue, faced several challenges in learning English. Based on the teacher-researcher's classroom experience, it was observed that the students experienced anxiety while speaking English and lacked confidence in oral communication, despite having a fair understanding of grammar. Another major challenge was their inability to relate to the prescribed texts, as most of the themes and contexts were unfamiliar to them. The curriculum offered very few lessons reflecting their own culture, traditions, or local history, which could connect learning to their real-life experiences. Consequently, there existed a gap between their classroom learning and the lived realities of their community, creating inhibitions and affecting their learning process. The learners belonged to the Lambada tribal community, and most of them were first-generation college students. Their parents were primarily from low-income backgrounds, with limited or no formal education.

The Intervention

The teacher-researcher integrated the learners' mother tongue into classroom interactions to promote better communication. While all language skills were addressed, the primary emphasis was on improving speaking abilities to understand how using the mother tongue could influence classroom learning. The students were divided into groups, and each group selected a leader who received special training to guide peers in developing their language skills. This created a collaborative teaching model where learners shared responsibility for teaching and learning.

In the multilingual classroom, AI-learning methods were also introduced for better learning for the students. Because, AI-based learning emphasise adaptive and personalized instruction tailored to the diverse linguistic backgrounds of tribal welfare (Gurukulam) students. Intelligent tutoring systems and adaptive learning platforms analyze learners' performance data to customize lessons, vocabulary exercises, and comprehension tasks according to individual proficiency levels. This

technique ensures differentiated instruction within a single classroom, allowing learners to progress at their own pace. By integrating multilingual inputs, these systems can present explanations in both the native language and English, thereby strengthening conceptual clarity and facilitating smoother language transition.

Another key AI learning technique involves the use of speech recognition and conversational AI tools to develop listening and speaking skills. AI-powered applications provide interactive dialogue practice, pronunciation modelling, and real-time corrective feedback, enabling students to refine their oral communication skills independently. Chatbots and virtual language partners simulate authentic conversational contexts, encouraging repeated practice without fear of judgment. This technique is especially beneficial in contexts where exposure to fluent English speakers is limited, as it creates a supportive and immersive learning environment that enhances fluency, confidence, and communicative competence.

A further important technique is the application of AI-supported multilingual and content-based learning systems, which align with translanguaging and culturally responsive pedagogy. AI tools facilitate instant translation, contextual vocabulary building, and bilingual scaffolding, helping learners connect new English knowledge with their existing linguistic repertoire. Additionally, AI can curate culturally relevant texts, audio-visual materials, and activity-based tasks that reflect student's lived experiences. This technique not only improves comprehension and retention but also fosters engagement and inclusivity, ensuring that language learning becomes meaningful, context-sensitive, and learner-centered.

The group leaders, who showed stronger proficiency, were trained separately. After group discussions, team leaders presented their answers first, which the teacher-researcher reviewed and refined before asking them to check their group members' work. These leaders were also encouraged to deliver presentations on the lessons and oversee their members' presentations. Additionally, students worked together on projects related to their local culture.

Since many learners faced difficulties in speaking English, they were allowed to use their mother tongue to give instructions, ask questions, and handle other communication tasks. Although they were initially reluctant to use their tribal language, over time they became more confident, leading to greater participation in classroom activities. In this way, the mother tongue functioned as an effective pedagogical resource.

Furthermore, the teacher-researcher used Project-based Multilingual Learning, Multilingual Peer Collaboration, and Multilingual Reading and Writing

process (focused more on writing process through listening to their folk songs in YouTube because, the lack of scripture for their mother tongue).

Overall, the month-long teaching intervention successfully used the tribal language as both a teaching and learning aid.

AI Learning Apps for English Language Development

App	Key Features	Classroom Use	Advantages	Limitations
Duolingo	Adaptive lessons, gamified learning, vocabulary & grammar practice	Daily practice, homework, self-paced learning	Easy to use, engaging, works for beginners	Limited speaking depth, requires internet
ELSA Speak	AI speech recognition, pronunciation correction	Speaking labs, pronunciation drills	Real-time feedback, improves fluency	Premium features paid, needs good audio
Google Translate	Instant translation, voice input, multilingual support	Vocabulary building, bilingual teaching	Supports Indian languages, easy access	Over-dependence reduces thinking in English
Microsoft Translator	Live conversation translation, group classroom mode	Teacher-student interaction, multilingual classrooms	Useful for group learning, inclusive	Needs devices for all students
Grammarly	Grammar check, sentence correction, writing feedback	Writing practice, assignments	Improves accuracy, instant feedback	Advanced features require subscription
ChatGPT	Conversational AI, writing & speaking support, explanations	Role plays, Q&A, language practice	Highly interactive, supports all skills	Requires guidance to avoid misuse
Cake	Video-based learning, listening & speaking practice	Listening labs, real-life	Engaging content,	Needs internet, less structured syllabus

App	Key Features	Classroom Use	Advantages	Limitations
		conversation practice	improves listening	

The AI apps that were used in the classroom are

1. Adaptive Language Learning App

These apps personalize learning based on student level and progress.

- Duolingo
  Uses AI to adjust lessons, offers gamified vocabulary, grammar, and reading practice.

2. AI Chatbots & Conversational Practice

These help students practice speaking and writing interactively.

- ChatGPT
  Can simulate conversations, explain grammar, and give writing feedback.

3. AI-Based Reading & Writing Support

Useful for comprehension, vocabulary, and writing improvement.

- Grammarly
  Gives instant feedback on grammar, spelling, and sentence structure.

Findings

The learners were encouraged to reflect on their experiences of learning English through the use of their mother tongue. Although they were permitted to share their reflections in their native language, a few chose to provide written responses. During the pre-intervention discussions, it became evident that the learners initially held negative attitudes toward using their mother tongue in the classroom. They perceived it as shameful and believed that English was a prestigious or elite language. However, as the intervention progressed, their perspectives shifted. They became more open to using their mother tongue, recognizing that it helped them comprehend lessons better and express themselves more effectively. While their speech was not entirely free of errors, they showed notable improvement in understanding and communication. The use of their mother tongue in discussing the content—followed by reinforcement in English—enabled them to converse confidently, make mistakes, and learn from them without fear.

The strategies implemented by the teacher-researcher effectively reduced both the linguistic and conceptual difficulties of the lessons. Discussions on familiar cultural themes such as local festivals, food, and community leaders kept learners motivated and engaged. They expressed that these topics made them feel comfortable

and confident in sharing their thoughts and experiences, as they were closely connected to their everyday lives.

The study was conducted over a short period of one month with a small group of learners. Since no quantitative tools were employed to support the results obtained from qualitative data analysis, it is difficult to generalize the findings. Nevertheless, this study represents an effort by a practising teacher-researcher to adopt a more empathetic approach to teaching English—one that respects and includes the learners' linguistic and cultural identities. It highlights how learners' dominant language can serve as a valuable classroom resource and suggests practical ways to integrate the mother tongue in English language teaching

Student Feedback Questionnaire

Enhancing English Language Learning through Multilingual Approach (For Tribal Welfare Students)

Instructions:

Please read each question carefully and respond honestly. Your feedback will help improve English language teaching through multilingual strategies. Tick (✔) the most appropriate option or write your answer in the space provided.

Part A: General Information

1. Name (optional): _____
2. Class / Year: _____
3. Mother Tongue: _____
4. Other Languages You Speak: _____

Part B: Learning Experience

5. How do you feel about learning English at college? ☐ Very interested ☐ Interested ☐ Neutral ☐ Not very interested ☐ Not interested at all

6. Do you face any difficulty in understanding English lessons? ☐ Yes, often ☐ Sometimes ☐ Rarely ☐ Never

7. What are the main challenges you face while learning English? (You can tick more than one)

☐ Vocabulary ☐ Grammar ☐ Pronunciation ☐ Speaking confidently ☐ Understanding texts ☐ Others: _____

Part C: Multilingual Approach in Learning

8. When teachers use your mother tongue while teaching English, does it helped you understand better?

☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree

9. Using examples or stories from your language and culture makes English learning:

☐ Very easy ☐ Easy ☐ Neutral ☐ Difficult ☐ Very difficult

10. Do you feel more confident to speak English when you are first allowed to explain or think in your mother tongue?

☐ Yes ☐ No ☐ Not sure

11. Which method helped you learn English better?

☐ Only English ☐ English mixed with my mother tongue ☐ My mother tongue first, then English ☐ Other: _____

Part D: Skills and Improvement

12. Has the multilingual method improved your English speaking and writing skills?

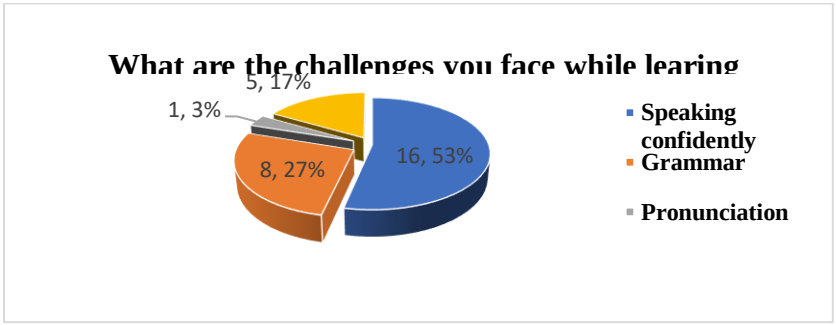
☐ A lot ☐ Somewhat ☐ A little ☐ Not at all

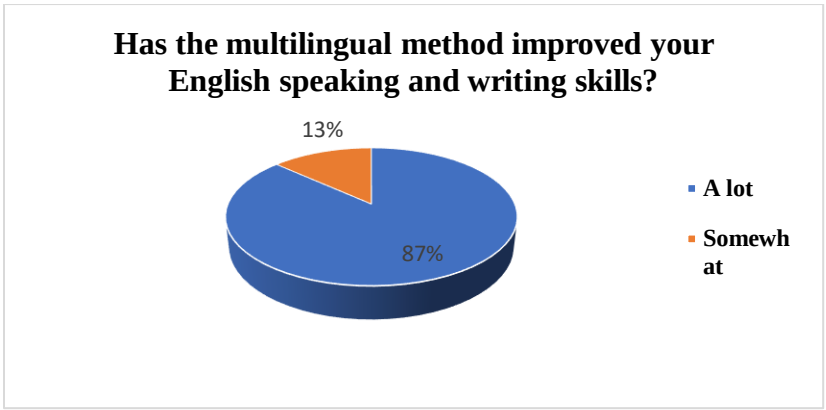
13. Do you feel more comfortable participating in class activities when your teacher allows you to use your mother tongue initially?

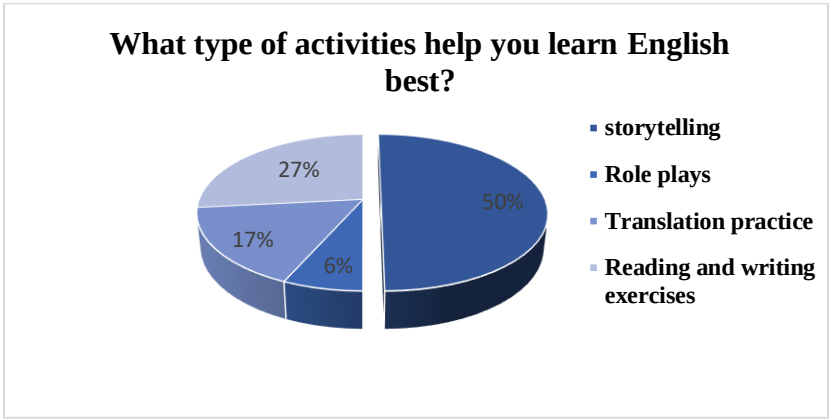
☐ Yes ☐ No ☐ Sometimes

14. What type of activities helped you learn English best?

☐ Group discussions ☐ Translation practice ☐ Role plays / storytelling ☐ Listening to audio lessons ☐ Reading and writing exercise







Challenges and Recommendations

Teacher Preparedness: Many educators lack training in multilingual pedagogy.

Recommendation: Organize professional development workshops focusing on MTB-MLE (Mother Tongue-Based Multilingual Education) methodologies.

Resource Development: Availability of teaching materials in tribal languages is scarce (there is no script).

Recommendation: Develop localized bilingual/ trilingual teaching resources.

Balancing English Proficiency with Cultural Integrity: Overemphasis on English risks cultural erosion.

Recommendation: Incorporate tribal knowledge systems into English learning modules.

Conclusion

For Tribal Welfare (Gurukulam) students, English is both a gateway to opportunity and a challenge shaped by socio-cultural realities. A multilingual

approach, grounded in mother tongue and regional language support, can effectively enhance English proficiency while preserving cultural identity. It bridges the gap between home language and school language. By valuing tribal students' native tongues as learning resources, English teaching becomes inclusive, meaningful, and culturally responsive. These methods help learners develop English skills while maintaining pride in their linguistic heritage. Gurukulam institutions must adopt multilingual pedagogies to ensure inclusive, empowering, and sustainable language education. By doing so, they can transform English from a barrier into a bridge that connects tribal learners to wider horizons. The paper suggests that a multilingual approach to English learning offers significant advantages for tribal students by bridging linguistic, cultural, and educational gaps. It enhances comprehension, promotes confidence, and supports equitable access to language education. However, future research should focus on developing contextual frameworks, curriculum integration models, and teacher training modules tailored to the linguistic diversity of Tribal Welfare Gurukulams.

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Role and Impact of Artificial Intelligence in Achieving Learner Autonomy

Dr. B. Krishna Chandra Keerthi
Associate Professor, Dept. of English
Govt. City College (A), Hyderabad

Abstract:
Since ages, the teacher continues to be the centre of the classroom process, proceedings and all the transaction dynamics. He is the omniscient, one-in-all / all-in one, all-in-all for the learners and more often than not the learners got accustomed to be dependent on the teacher for all practical purposes. But with the changing times, a transition towards self-directed learning, a pedagogic shift from the traditional / conventional teaching practices to the recent methods such as learner-centered, learning-centered, experiential, participatory, task/activity-based learning, has become the need of the hour with the advent of technology. Computer Aided language Learning (CALL), Mobile Assisted Language Learning (MALL) and Social Media have started impacting the teaching-learning process. Achieving learner autonomy, coming out of the spell of the teacher and having a fair share in the preparation of the content/modules, exercising the choice of aids/resources, methods and even in assessment/evaluation involves a complex phenomenon and an arduous /uphill task. However, the digital era demands the employment of A I tools which can enable the learners to transform themselves to be independent/autonomous learners. The artificial intelligence can never replace the natural intelligence, humans especially, the teachers whose roles reorient as facilitator, director, guide, friend, philosopher, initiator and motivator.

Key Words: Teacher-cantered, learner-cantered, autonomy, A I, task.

Learner-Autonomy: Transition towards Self-Directed Learning

Learning has been a complex, muti-polar process since ages. Learning takes place irrespective of the mani-fold dimensions, varied perspectives and diverse limiting factors such as age, intelligence quotient, maturity level, sex, social, economic and cultural backgrounds. It is a continuous and life long process. In sharp contrast to the traditional teacher-centered method which has been in vogue over centuries, the learner-centered method is a revolutionary trend in the teaching-learning process. The authoritarian approach calls for an over whelming,

domineering, influential, over-powering, charismatic and all-in-one/all-in-one personality of the teacher casting and wielding a mesmerizing, magnetic and an indelible impact on his pupils/disciples leaving them as desperate and despondent dependents on him. The teacher continued to be the decisive figure designing and framing the content, resource materials, methodology, activities, tasks and procedures of evaluation making the learners passive listeners. With the changing times, dynamism has made its way into the learning mechanism providing the much needed impetus, momentum and the right platform for the shift of focus and attention towards the learners from the teacher. This raised and initiated many a point for discussion, debate and argument. The new orientation includes a certain transformation in the roles of both the learners and the teacher involving the learners in the learning process, making them active participants as well as partners in every sphere of teaching-learning activity making them responsible, self-directed and autonomous learners, which in fact leaves the teacher over- burdened rather than relieved of his charge for enabling, guiding, directing and steering his wards to their new roles. This transition among learners heading for the better is an interesting and a welcome note as well.

Language learning is a skill to be acquired on contrary to the content subjects where knowledge can be acquired through different ways and means including that of rote learning. Various methods are being practiced for the teaching of English language such as oral approach, aural-oral approach, situational approach, communicative approach, structural method, inductive-deductive method, direct method, grammar translation method and bi-lingual method. In all these traditional and conventional approaches and methods the teacher continues to be the authoritarian playing the lead role, dictating the terms, devising, designing and deciding everything with respect to content, methodology, activities/tasks and even the procedures of evaluation. The over possessed learner remained as a mere spectator, a passive listener and a tool in the hands of the teacher. The students continue to depend on their teacher unable to think of any other alternative. They lack confidence in themselves nor are they prepared for peer group learning. The English language teaching-learning is beset with so many intricacies and challenges which need keen attention. Even though English has become a part and parcel of our life, the phobia and distancing continue to persist. Firstly, the shift of focus from the traditional authoritarian role of the teacher to the learner centered, learning centered, and experiential / participatory learning modes is the need of the hour and order of the day. The language learning seeks dynamic initiative on the part of the learner towards the self-driven, goal-directed behavior with the much-needed impetus and momentum provided by the teacher in the new changed role as a facilitator, director and guide. This article presents several issues from a multitude of directions

pertaining to language teaching – learning mechanism throwing light on the transition of the learner towards self –directed learning in the backdrop of the classroom dynamics at large.

Learner Autonomy: Holec gave one of the most well-known definitions of the term, describing it as "the ability to take charge of one's own learning." It refers to a certain mode of study or to a qualitative involvement of learners, various forms of independent or self-directed learning involving limited teacher intervention and generally outside a traditional classroom setting. It also relates to notions of awareness of learning goals, participation in decision-making and personal assumption of responsibility.

Learner autonomy is a part of learner-centred system. Wenden describes the autonomous learner as the one who : " ..... has acquired the strategies and knowledge to take some (if not yet all)responsibility for her language learning and is willing and self-confident enough to do so." (1991:163)

Crabbe identifies three main reasons for fostering learner autonomy.

The argument on ideological plane is that :

" ..... the individual has the right to be free to exercise his or her own choices, in learning as in other areas, and not become a victim (even an unwitting one) of choices made by social institutions. (1993 : 443)

Crabbe's second argument is psychological and :

" ..... is simply that we learn better when we are in charge of our own learning (and that the resultant learning) is more meaningful, more permanent, more focussed on the processes and schemata of the individual when the individual is in charge." (Op.cit : 443)

Crabbe's third argument is economic and is based in the presumption that :

" .... society does not have the resources to provide the level of personal instruction needed by all its members in every area of learning (so that) individuals must be able to provide for their own learning needs ..... (Op.cit :443)

Huttenen (1986 : 232) defines autonomy as 'the willingness and ability of the learner to take responsibility for his own learning."

Dickinson identifies five characteristics of autonomous learners :

1. They understand what is being taught.
2. They are able to formulate their own learning objectives.
3. They are able to select and make use of appropriate learning strategies.
4. They are able to monitor their use of these strategies.
5. They are able to self-assess, or monitor their own learning. (1993: 330-331)

Interest in learner autonomy, and in the closely related area of learner training, has moved language teaching in a learner-centred direction in four ways.

1. The language teaching identifies the central role which the learners can and should play in the management of their language study.

2. Focus or attention of language teaching profession on the development of pedagogical procedures which motivate and enable the learners to become active participants in the learning process.
3. By focussing attention of the language teaching community on learning processes in addition to learning products, it has generated interest in those learner-specific factors which influence learners' interaction with various aspects of language study.
4. It has also led to reflection on the interaction between learners' cultural background and expectations, and their perception of autonomy.

Learners explore both their objective and subjective needs in collaboration with their teacher as part of a shared process of discovery. The concept of learner-centred curriculum has integrated within a coherent planning framework many insights such as relevance of content, flexibility of learning and the strategic involvement of learners.

Three perspectives of learner-centeredness are learner-centeredness as a principle for activity organisation, learner autonomy, and the learner-centred curriculum.

1. A learner – centred approach accepts and seeks to learn from the perspectives on language teaching contained in any method or approach, as well as from the insights teachers derive from their everyday teaching experience, it does this in the belief that openness to a variety of experiences and insights makes the language teacher better able to respond to local needs.
2. A learner-centred approach positively accepts diversity between learners, learning contexts and learning goals.
3. A learner-centred approach is concerned in the first instance with the learners involved and with the quality of their learning.
4. A learner-centred approach is open to insights from any source, within or outside language teaching, providing better understanding of the needs of learners is achieved and more effective teaching and learning procedures are identified.
5. A learner-centred approach generates a healthy dissatisfaction with current practice, as

it maintains that there is no once-and-for–all right answer, but only appropriate, local responses to local needs.

6. A learner-centred approach seeks coherence in terms of the adequacy of its response to the needs of each new group of learners.

Learner-Centeredness: Teaching for the students and planning teaching keeping the students at the centre are entirely different. The concept of learner-centeredness involves the learner as a key figure around which the whole process of teaching-learning revolves. Learner participation, active involvement, and partnership in the

teaching-learning process reflect the learner-oriented methodology. Learner-centeredness is also inclusive of learner responsibility which in turn takes the form of learner autonomy. When the learners know about the nature of the language learning and the difference that their contribution can make, they need some practice to act as responsible learners and they try to take over some roles from the teacher and enjoy the freedom that comes with the increased responsibility. The learner-centred view tends to view language acquisition as a process of acquiring skills rather than a body of knowledge. Proponents of learner-centred curricula are interested in assisting the learners gain the communicative and linguistic skills they need to carry out real-world tasks than in enabling the learners acquire the totality of the language.

Responsibility vs. Autonomy: Responsibility and autonomy are two sides of the same coin. Both are inseparable and interrelated. Autonomy is the freedom and ability to look after one's own affairs and also the right to make decisions. On the other hand responsibility implies keeping one in charge of something where one has to face and is concerned with the consequences of his own actions. Personality traits, preferred learning styles and cultural attitudes set constraints to the development of autonomy. Responsibility and autonomy mark the learner-centred pedagogy. However some students may be averse to taking the initiative of self-learning and self-growth which may lead to autonomy. Such students tend to be over dependent on their teacher.

So it's the look out of the teacher to develop responsible attitudes in his students and to do so he must shed his old conventional /traditional role that of an authoritarian and assume the new role of a facilitator /counsellor.

The teacher in his traditional authoritarian role is considered to be rigid, knowledgeable, transmitter of the knowledge, responsible and accountable for the learning of his students and so believes that he has the ability and expertise to make right options, judgements and related to the learning of his students.

On the other hand in the learner-centred approach the teacher and the learner both have flexibility and both are learners. The teacher and the taught discuss and share everything related to teaching and learning process and each stage of framing the content, the methodology, resources, tasks/activities and the procedures of evaluation. The teacher accepts the self-directed learning of the learner and also that he is responsible for his own learning can take correct decisions that suit him. He confines himself to the background plays the role of director, the man behind the curtain, a mere facilitator providing him resources and support and enabling the learner to learn.

The learning will be successful when the learners develop a sense of responsibility and an attitude for autonomy and prepare themselves for inviting the challenges in the new roles. But the learners hesitate to accept changes and even oppose for many reasons

such as the uncertainties and risks involved in the changes, overdependence on their teacher and the fear complex to act independently. The teachers and the parents may also be against the increase of learner involvement because of their apprehensions that it leads to disorder, lack of respect for elders, and loss of the teacher's authority.

Motivation and Autonomy: Motivation and Autonomy both are alike and are prerequisites to learning and enhance the rate and pace of learning playing the catalytic role. Besides these self-confidence, self-evaluation (auto correction), learning strategies, cooperation and group cohesion are the factors which contribute to learning and promote learning.

Self-Confidence: Self-confidence boosts the morale of the learners and enables them to learn on their own with greater sense of responsibility instead of relying too much on their teacher for even the petty trivial issues.

Self-Evaluation: The learners' checking, monitoring and a thorough examination of their contribution to their own learning. Self-evaluation requires the learners to play the role of their teachers and assess their own work and assignments impartially and objectively. The learners set targets for themselves, own them and feel responsibility for achieving them.

Learning Strategies : Learning strategies are different means which are instrumental in acquiring language competence and the learners are to be encouraged to choose one from among those available that suits their needs and interests and guide them to discover them how and when to use these strategies.

Promotion of Cooperation: Promotion of cooperation in the classroom affects learner attitudes. The learners rely on each other rather than on their teacher. Pair work and group work foster active involvement of learners, encourage collaborative learning along with providing ample opportunities for taking feedback from their peers.

Teacher Attitude: The teachers must have willingness to offer partnership to learners for achieving common goals, consistency in control and readiness to delegate tasks and decisions.

Sharing and Exchange of Information with the Learners: By coming forward to share relevant information with the learners the teachers show respect and regard the learners as partners in achieving the common aim of learning a foreign language. The teachers discuss both long term and short term objectives and also the aims of every activity there by promoting a sense of responsibility among the learners.

Consistent Control: Expectations towards the learners, the limits of acceptable behaviour and the consequences of failure to live up to the expectations. Consistent application of rules prompts the learners to adhere to the rules.

Delegation of Tasks and Decisions: The learners are not professional teachers. They are sure to commit mistakes in their selection and implementation of tasks and in their decisions. However this should not be considered and the learners need to be encouraged and given free hand.

When the teacher decides to keep himself behind the screen, transfer his role at least partially, delegate his responsibility to his students, confine himself as a facilitator, convener, moderator and director keeping the learners at the centre, focussing his attention on them, planning and designing the entire teaching-learning program through a series of graded tasks / activities which sometimes are self-explanatory and in other cases unfold themselves after serious attempts and efforts then only the learners become active participants and partners in the learning process. Such instances prompt the learner responsibility and they begin to feel that they are crucial and instrumental to progress in learning, behave and respond accordingly and co-operate with their teachers and peers, learn mutually and even come up with ideas of improving the tasks.

Activities: The three basic features that each activity contains are :

Difficulty of the activity in terms of the language proficiency.

Attitude or skill the activity is designed to tackle.

Language focus includes other curricular such as grammar practice and sub skills of listening, speaking, reading and writing.

Preparation part consists of materials or devices needed for the activity.

Learner-centred methodology initiates and boosts learner autonomy / responsibility which means learning takes place along with the teacher and not from the teacher. This does not however entail the learners with too high expectations which can prove to be disastrous. So a careful, gradual involvement can increase their motivation and interest.

Some activities expose the learners to new ways of thinking about their learning, some activities to old routine habits and some other activities enable them to discover new aspects of learning. The efficiency of teaching depends on many factors such as learner's motivation, interest, readiness, skills, ability and willingness to cooperate and work as a group or community. The learners explore to realise how they can contribute to their own learning.

Before proceeding to provide the learners with varied contexts for their autonomous guided phased learning the teacher must know the existing attitudes and previous knowledge of his learners. By emphasising the skills and knowledge that they already possess the learners get confidence and are motivated. The teacher can devise some experiments to introduce learning strategies, to sort out those that work best for them in their learning. Contexts may also be provided by the teacher for the learners to

seek and offer help and cooperation, encourage exchange and sharing of views and ideas in the group and from the peers. Some other contexts may lead them to think about their learning styles and the diverse preferences for learning strategies exercised by their peers.

To be autonomous, learners need to have a say and fair share in all the phases of the teaching-learning process.

Preparation of Content / Modules:

The learners need to involve themselves in the design of syllabus/curriculum keeping in view all the factors such as age, sex, maturity levels, learning needs and abilities, market requirements.

Choice / Design of Aids / Resources:

The learners are expected to be mature enough in designing the teaching-learning aids and resources.

Option of Apt Methodology:

The learners need to opt a pedagogy that suits the content and all other physical, social, geographical and political settings.

Assessment / Evaluation:

The learners have a key role to play and disprove the apprehensions / fears regarding their maturity and ability on their part in assessment and evaluation.

Application of A I Tools in the Teaching-Learning Process:

If used properly A I tools can be of great help to the learners in their yearning to be independent.

- The learners can make use of the various AI Tools to contextualize and become autonomous, self-reliant and independent learners.
- However a teacher cannot be replaced with technology.
- The personal, human touch and the emotional X factor will always have a definite edge I teaching-learning system.

Expected Outcomes of the A I Enabled Teaching-Learning Process:

Enabling the learners self-motivated.

Making the learners self-reliant

Involving them in the Teaching-Learning process equally as partners.

List of Commonly/Frequently used A I Tools:

Gemini

- Chat GPT / Chat Bot
- Claude / GitHub / Copilot (Coding/Logic)
- Perplexity (Research)
- Gamma (PPT)

- Runaway (Video Creation)
- Otter.ai (Transcription)
- Canva (Visual Design)
- Zapier (Apps)
- Takpal AI – Language Learning
- Jasper / Any word - Copywriting

How can Learner-autonomy be achieved?

- By making **Gen AI** as a preferred learning partner.
- Making use of **Writing Assistant**: There are many dedicated AI-powered websites that offer writing assistance (like spell checks, style guidance, grammar help, paraphrases)
- Availing the services of a **Personal Tutor** like **Chat Bot**.
- Having an awareness and control over Self-regulated Learning, Critical Thinking and Problem-Solving, Decision-making, Collaboration and Communication, Reflection and Metacognition.
- Employing applications like **Intelligent Tutoring Systems** which can provide personalized instruction, mediate feedback, **Learning Analytics where in** AI algorithms can analyze vast amounts of data to provide insights into student performance, learning patterns, and areas for improvement there by facilitating decision making, **Natural Language Processing** involving voice commands or text-based messages/chats, enhancement of deep learning experiences through virtual vs. augmented reality paving way for interactive simulations and visualizations. And deploying A I powered assessment tools.

What can teachers do?

Facilitating the classroom proceedings, steering/guiding interactional/transactional dynamics, aids/resources, providing orientation towards use of A I tools, arranging required physical/infrastructural facilities such as A I enabled smart/digital classrooms etc.

Potential Challenges and Ethical Considerations

- Data Privacy and Security
- Equity and Accessibility (Providing equal opportunities for all)
- Balancing Natural-Artificial Intelligent Systems.

Research Questions:

- Acceptability of new methods of teaching replacing conventional practices is a question.

- Orientation to the use of A I Tools.
- There exist many apprehensions and fears regarding achieving learner autonomy which need to be addressed

Research Methodology:

- Quantitative Metrics Design is adopted

Collection of Data:

- Random samples are taken.

Sample Size:

100 Students of UG and PG are picked.

Age Group:

17-22 Years

Mode of Obtaining Data:

Through Questionnaire

Research Methodology:

- Controlled experimentation is done.

Record of Pre-Test Scores:

- Characteristics/Nature of Pre-Test are recorded when traditional methodology is applied (Teacher-Centered) and without AI Tools intervention.

Record of Post-Test Scores:

Learner- Centered method of teaching-learning is adopted using A I Tools and the results are registered.

Comparative Study-Analysis and Inferences:

Results of pre-test and post-test scores are analyzed and observations and interpretations are drawn. They evinced clear progress towards learner independence and autonomy.

Findings:

70% of the students use A I tools for their tasks/assignments/projects.

Most of the students (80%) employ A I tools for their classroom interactions, preparation of notes.

A few students 40% of the students use A I tools for refining their skills for participation in extra-and co-curricular activities / competitions.

Maximum number of students (90%) apply A I tools for career building (interview skills, CV construction, preparation for competitive examinations.

Conclusion:

The studies clearly reveal that A I tools play a key role in making the teaching-learning tasks, simpler, easier, effective and there by enable the learners become

independent and autonomous. The technology-driven applications empower the learners achieve autonomy with efficiency/economy of time as well.

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Human Adaptive Intelligence in Language Learning: Opportunities and Challenges

K. Raj Kamal Singh
Lecturer in English
Govt City College Nayapul, Hyderabad.

Abstract

Human adaptive intelligence is crucial in language learning, as it allows learners to adjust their strategies, behaviors, and thought processes to fit changing linguistic environments. This ability includes awareness of one's own learning processes, problem-solving skills, and the knack for picking up on cultural and contextual signals, which all contribute to a more effective and personalized language acquisition experience.

With technological advancements, especially in artificial intelligence and adaptive learning systems, we now have exciting opportunities to enhance this adaptability. These technologies can offer customized feedback, immersive learning experiences, and insights based on data. Nonetheless, there are significant challenges to address, such as ensuring everyone has fair access, managing cognitive overload, and finding the right balance between human judgment and machine assistance. Ethical issues, including privacy concerns, bias, and the risk of becoming too dependent on technology, also add layers of complexity to the situation. This paper discusses the relationship between human adaptive intelligence and language learning, showcasing the transformative possibilities and the critical challenges that need to be tackled to promote inclusive, sustainable, and effective language education in our increasingly digital world.

The process of language learning is dynamic and complex, encompassing cognitive, emotional, social, and cultural aspects. Historically, language acquisition has been analyzed through various frameworks, including behaviorism, cognitivism, and constructivism. Nevertheless, the notion of human adaptive intelligence has recently become increasingly significant in comprehending how individuals effectively learn and utilize languages in diverse and evolving contexts.

Human adaptive intelligence is defined as the ability to modify one's thinking, behavior, and learning strategies in response to new, intricate, or uncertain environments. Within the realm of language learning, it includes the capacity of learners to adjust their linguistic strategies, interpret meanings across cultural divides,

and tackle real-world communication challenges. In contrast to static intelligence measures, adaptive intelligence highlights the importance of flexibility, problem-solving, and responsiveness to context.

The advent of globalization, digital communication, and multilingual societies has heightened the necessity for adaptive language skills. Contemporary learners are expected not only to memorize vocabulary and grammar rules but also to engage in genuine communication, collaborate across cultures, and adapt to changing linguistic requirements. Concurrently, technological innovations—such as artificial intelligence (AI), language learning applications, and adaptive learning systems—are transforming the methodologies of language instruction and acquisition.

This paper investigates the significance of human adaptive intelligence in language learning, emphasizing its opportunities and challenges. It seeks to review existing theoretical and empirical literature, propose a research methodology for examining adaptive intelligence in language contexts, present key findings from recent studies, and discuss the implications for learners, educators, and policymakers.

Key Words: Human adaptive intelligence, Language learning, Cognitive flexibility, Personalized learning

Literature Review

Concept of Human Adaptive Intelligence

Adaptive intelligence has been discussed extensively in psychological and educational research. It extends beyond traditional intelligence quotient (IQ) measures, focusing instead on how individuals apply knowledge in real-world situations. Scholars argue that adaptive intelligence includes skills such as problem-solving, critical thinking, creativity, and the ability to learn from experience.

In language learning, adaptive intelligence manifests in learners' ability to adjust their communication strategies, interpret ambiguous meanings, and respond to cultural nuances. For instance, a learner may modify their speech based on the listener's proficiency level or cultural background, demonstrating adaptive linguistic competence.

Language Learning Theories and Adaptation

Several language learning theories implicitly incorporate elements of adaptive intelligence:

Communicative Language Teaching (CLT): Emphasizes real-life communication and adaptability in language use.
Sociocultural Theory: Highlights the role of social interaction and cultural context in shaping language learning.
Interlanguage Theory: Suggests that learners continuously adapt their linguistic system as they acquire new knowledge.
These frameworks collectively underscore that language learning is not static but evolves through interaction, feedback, and contextual adaptation.
Role of Technology in Adaptive Language Learning
Technological advancements have introduced adaptive learning systems that personalize instruction based on learner performance. AI-driven platforms can analyze user data and adjust difficulty levels, provide targeted feedback, and recommend learning pathways.
Such systems align with the principles of adaptive intelligence by promoting individualized learning experiences. However, they also raise questions about the extent to which technology can replicate human adaptability, particularly in areas such as emotional intelligence and cultural sensitivity.

Opportunities in Adaptive Language Learning

The integration of adaptive intelligence into language learning offers several opportunities:
1.Personalized Learning: Learners can progress at their own pace, focusing on areas of need.
2.Enhanced Engagement: Interactive and adaptive tools increase motivation and participation.
3.Real-World Application: Emphasis on practical communication skills prepares learners for authentic interactions.
4.Cross-Cultural Competence: Adaptive learners develop sensitivity to cultural differences, improving global communication.

Challenges in Adaptive Language Learning

Despite its benefits, adaptive intelligence in language learning presents challenges:
Assessment Difficulties: Measuring adaptive intelligence is complex and often subjective.
Digital Divide: Unequal access to technology limits opportunities for some learners.
Over-Reliance on Technology: Excessive dependence on AI tools may reduce critical thinking and autonomy.
Teacher Preparedness: Educators may lack training in integrating adaptive approaches into their teaching.

Research Methodology

Research Design

This study adopts a mixed-methods approach, combining quantitative and qualitative data to explore the role of adaptive intelligence in language learning. The design includes surveys, experimental interventions, and semi-structured interviews.

Participants

The study involves 150 language learners from diverse linguistic and cultural backgrounds. Participants are divided into three groups:

1. Traditional learning group
2. Technology-assisted learning group
3. Adaptive learning group

Data Collection Methods

Surveys: Assess learners' adaptive strategies, motivation, and language proficiency.

Pre- and Post-Tests: Measure language improvement over time.

Observations: Analyze classroom interactions and adaptive behaviors.

Interviews: Explore learners' experiences and perceptions.

Data Analysis

Quantitative data are analyzed using statistical tools such as regression analysis and ANOVA to identify significant differences between groups. Qualitative data are analyzed through thematic coding to identify recurring patterns and insights.

4. Findings

Improved Language Proficiency

Results indicate that learners in the adaptive learning group show significantly higher improvement in language proficiency compared to the other groups. They demonstrate better fluency, comprehension, and communicative competence.

Enhanced Problem-Solving Skills

Adaptive learners exhibit stronger problem-solving abilities, particularly in unfamiliar linguistic situations. They are more likely to use context clues, paraphrasing, and negotiation of meaning to overcome communication barriers.

Increased Motivation and Engagement

Participants in adaptive environments report higher levels of motivation and engagement. Personalized feedback and interactive activities contribute to sustained interest in learning.

Role of Technology

Technology-assisted learners benefit from immediate feedback and structured learning paths. However, their adaptive skills are less developed compared to those in the adaptive learning group, suggesting that human interaction remains crucial.

Challenges Identified

Key challenges include:

Difficulty in assessing adaptive intelligence

Limited access to advanced learning technologies

Variability in teacher effectiveness

5. Discussion

The findings highlight the significant role of human adaptive intelligence in language learning. Adaptive learners are better equipped to navigate complex linguistic environments, demonstrating flexibility, creativity, and resilience.

Implications for Learners

Learners should be encouraged to develop adaptive strategies such as:

Reflective learning

Contextual analysis

Collaborative communication

These skills enable them to handle real-world language challenges effectively.

Implications for Educators

Educators play a critical role in fostering adaptive intelligence. They should:

Design flexible learning activities

Encourage critical thinking and problem-solving

Integrate technology meaningfully

Teacher training programs must also emphasize adaptive teaching methodologies.

Role of Technology

While technology enhances learning experiences, it cannot fully replace human adaptability. A balanced approach that combines technological tools with human interaction is essential.

Policy Implications

Educational policies should support:

Access to adaptive learning technologies

Teacher training initiatives

Inclusive learning environments

Such measures can bridge gaps and promote equitable language learning opportunities.

6. Conclusion

Human adaptive intelligence is a critical factor in effective language learning. It enables learners to respond to dynamic linguistic and cultural contexts, fostering meaningful communication and lifelong learning.

This study demonstrates that adaptive learning approaches significantly enhance language proficiency, engagement, and problem-solving abilities. However, challenges such as assessment difficulties, technological disparities, and teacher preparedness must be addressed.

Future research should explore innovative methods for measuring adaptive intelligence and examine its application across different educational contexts. By integrating adaptive intelligence into language education, stakeholders can better prepare learners for the complexities of global communication.

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Teaching with Heart in the Age of AI

N Anusha M.A,M.Sc,B.Ed.,(Ph.D)
Research scholar, Bharatiya Engineering Science and Technology Innovation University (BESTIU)
Email Id: anushamam20@gmail.com Mobile No: 9581820362

Abstract:

As AI tools move into our classrooms, we are facing a big question: Can a machine really teach a language that is rooted in human connection? This paper explores the "grey areas" of using AI to teach English. While apps and bots are great for quick practice, they bring up real concerns about student privacy and the "bias" baked into the software which often favours specific, privileged accents while ignoring the rich variety of voices around the world. We also explore how the teacher's role is shifting. There is a deep worry that relying too much on tech might cause us to lose the empathy and cultural nuance that only a person can provide. We aren't saying "no" to AI; we're asking how to use it without losing the soul of the classroom. Language is more than just vocabulary; it is a vessel for heritage and identity. If we let algorithms become the sole gatekeepers of "correct" English, we risk silencing the very diversity that makes our global community so vibrant. Ultimately, this study advocates for a balanced, human-first approach. We believe that by staying informed and putting ethics first, we can use AI to make learning more personal without sacrificing the fairness or the "human touch" that makes language learning so meaningful. We conclude that the most powerful classroom isn't one run by a machine, but one where technology acts as a bridge, allowing the teacher to focus on what truly matters: helping every student find their own unique voice.

Key Words: Digital Ethics, Human Connection, Linguistic Fairness, Teacher Agency, AI Literacy, Student Privacy

Introduction:

Artificial Intelligence (AI) is a field of computer science focused on creating smart machines that can perform tasks that typically require human intelligence, like learning, reasoning, and problem-solving. It encompasses many different disciplines, including computer science, data analytics and statistics, hardware and software engineering, linguistics, neuroscience, and even philosophy and psychology.

AI is about teaching computers to do the amazing things our own brains can do, from understanding the world around them to learning new things and even coming up with fresh

ideas. For instance, AI is used in optical character recognition (OCR) to pull text and data from various images and documents. This process transforms unstructured content into structured, business-ready data, helping uncover valuable insights.

Since AI truly begun took shape in the mid20th century AI has a variety of benefits like fast and accurate, reducing human error, automation, eliminate repetitive tasks, healthcare ,transportation, business operations, education, entertainment and several other fields AI playing its remarkable role.

Role Of Artificial Intelligence (AI)In Teaching Learning Process:

AI penetration in education field creates major impact on teaching learning process, Artificial Intelligence helps find out what a student does and does not know, building a personalized study schedule for each learner considering the knowledge gaps. In such a way, AI tailors studies according to student's specific needs, increasing their efficiency.

Information visualization: New ways of perceiving information, such as visualization, simulation, web-based study environments, can be powered by AI.

Learning content updates: Besides, AI helps generate and update the content of the lessons, keeping the information up to date and customizing it for different learning curves.

Digital lessons: Digital learning interfaces with customization options, digital textbooks, study guides, bite-sized lessons, and much more can be generated with the help of AI.

The adoption of innovative AI technologies opens up new ways of interacting for students with learning disabilities. AI grants access to education for students with special needs: deaf and hard of hearing, visually impaired, people with ASD etc..,

Artificial Intelligence tools can be successfully trained to help any group of students with special needs.

Benefits of AI For Students

Lessons tailored to the needs of different learning groups allow students to stop comparing them to each other. Earlier, a student should have asked a teacher for help in front of the class. Now, it's enough to type a query using a personal virtual assistant and get an instant explanation.

These opportunities offered by AI tools make personal progress come to the fore, reducing the pressure in the classroom. Less pressure means less stress and more enthusiasm to study.

24/7 Access to Learning

With AI helpers based online, students always have access to learning. They are free to plan their day without being linked to a specific place. They can study on the go, at any place and time they want. They can build their schedule based on their most productive hours.

Individualized schedules, custom tasks, interaction with digital technologies, and personal recommendations are part of the personal approach each student gets using AI. Besides, a personal approach helps students feel special, increasing their engagement and raising interest in studies in such a way.

Role of AI In English Teaching:

AI incorporation in English language learning presents a major shift in teaching methodologies, paving the way for a multitude of opportunities for personalized and efficient teaching and learning.

Adaptive-learning systems provide practice exercises based on each learner's pace. However, rather than bypassing the instructor, the method frees them up, allowing the teacher to group pupils wisely, conduct peer conversations, foster curiosity, and cease overscheduling every minute. AI handles the mechanics, while teachers handle the meaning.AI technologies contribute various teaching and learning materials for both EFL (English as a Foreign Language) and ESL (English as a Second Language). The inclusion of AI Tools in ELT involves various kinds of educational aids which address long-standing challenges of English language.

Effectiveness and Instant Feedback

AI greatly enhances the content pace and effectiveness of English language learning by facilitating instant guidance on extensive language skills, including grammar, vocabulary, writing, pronunciation and fluency Tools like Grammarly, ELSA Speak and ChatGPT provide instant feedback helping learners to recognize their errors and improve their language skills. Unlike conventional classroom instruction which often delays feedback due to teacher availability. Such tools hasten the learning process and support the development of cognitive skills. This results in a more effective learning, with faster retention and language skills development.

Adaptive Learning

One of the major contributions of AI is its capability to deliver individualized learning experience. Traditional in-person classes consistently struggle to meet the different needs of learners with varying expertise and cognitive skills. AI bridges this gap through algorithms which examines learners' efficiency, identifies pros and cons, and adjusts the content pace, complexity and teaching techniques to ensure the progress. Therefore, it can be said that 'AI has revolutionized autonomous English Learning.

Accessibility

Accessibility is another important advantage of AI in English language learning and teaching. AI-powered tools are often accessible online or as mobile applications to a wider range of learners beyond the restrictions of the classroom environment. This enables learners' flexibility to study at their own convenience in different settings such as at home, while traveling, or in blended learning environments. Moreover, traditional language learning entails a higher financial burden than learning through AI tools which offer free or low-cost services. This accessibility is beneficial for learners in underprivileged communities and developing countries, where education is limited or inaccessible. Furthermore, AI tools such as Speech recognition and Text-to-speech applications support learners with disabilities by offering multimodal input and output options.

Besides having the above-mentioned wide variety of benefits, role of artificial intelligence in education field a new questions arises does depending on AI might cause us to lose the empathy and cultural nuance that only a person can provide, also it may create a negative impact on learners ability to improve their English, lacking of localised pronunciation and expressions.

Teaching with Empathy in a Digital Classroom

One of the most important aspects of teaching with heart is empathy. AI systems cannot fully understand students' fears, motivations, cultural backgrounds, or emotional struggles. A teacher who listens patiently, encourages quietly struggling learners, and builds confidence creates a safe learning environment that no algorithm can replicate.

Empathy helps teachers to recognize individual learning differences, support anxious or hesitant learners, motivate disengaged students, and promote inclusive classroom participation. Students often remember *how* teachers made them feel more than what they taught.

Creativity and Critical Thinking Beyond Automation

While AI can generate information quickly, creativity and deep interpretation remain human strengths. Teachers nurture imagination through storytelling, debate, interpretation, and reflective learning. Heart-centered teaching encourages to questioning rather than memorizing, interpreting rather than copying, expressing rather than repeating, and discovering rather than consuming knowledge. Such learning builds confident and thoughtful individuals.

Supporting Students' Emotional Well-Being

Modern learners face academic pressure, social challenges, and digital distractions. A teacher's encouragement can transform a student's confidence and

motivation. Teaching with heart includes, to recognizing emotional needs, offering reassurance, appreciating effort, and building resilience. AI can track performance—but teachers inspire perseverance.

Conclusion

The advent of Artificial Intelligence into English Language Teaching has become unavoidable, it offers promising rewards on the one hand, but poses complex challenges for educators, learners, and institutions on the other. 'Teaching with heart in the age of AI' means balancing technological innovation with empathy, ethical responsibility, creativity, and emotional connection. Use of AI to supplement, not to replace.

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Artificial Intelligence in Language Education: A Critical Study of AI-Based Learning Tools

Dr.S.Rajesh Kumar
Assistant Professor of English
GDC Malkajgiri.
Dist.Medchal

Abstract

Artificial Intelligence (AI) is transforming language education by offering individualized learning pathways, instant feedback, and interactive practice opportunities that extend beyond conventional classroom boundaries. This study critically examines the influence of AI-based language learning platforms on learner motivation, independence, and skill development. Drawing on literature review and content analysis, the study evaluates the pedagogical contributions and limitations of adaptive tutoring systems, virtual conversational agents, and intelligent feedback mechanisms. Evidence suggests that technologies such as natural language processing and machine learning can substantially improve communicative competence and foster self-directed learning through customized exercises and corrective guidance. Nevertheless, unresolved challenges persist, including ethical dilemmas, excessive reliance on digital tools, and diminished human interaction.

The investigation is framed around key questions concerning learner outcomes and the effectiveness of AI integration. Findings indicate that AI applications can enrich language learning when thoughtfully combined with traditional teaching methods and sound instructional design. However, caution is necessary to mitigate risks such as algorithmic bias and reduced social engagement.

AI-powered tools serve as a valuable complement to language education, but future inquiry must prioritize ethical deployment and the balance between technological assistance, learner autonomy, and human instructional support. The implications of this study extend to educators, students, and curriculum designers aiming to leverage AI responsibly and equitably in language learning contexts.

Keywords: Artificial Intelligence, Language Learning, Adaptive Tutoring, Conversational Agents, Communicative Competence, Pedagogical Design, Ethical Challenges, Machine Learning

Introduction

The swift development of Artificial Intelligence (AI) has significantly transformed modern society, impacting industries including communication, healthcare, banking, and transportation. One of the most dynamic fields affected by AI technologies is education, especially language instruction. Textbooks, teacher-cantered classrooms, memorizing exercises, and regular feedback were the mainstays of language acquisition in the past. Although these approaches have been successful for a long time, they frequently fail to consider individual differences in learner pace, cognitive style, motivation, and competence levels. Teachers may find it challenging to give each student individualized instruction and regular feedback, particularly in big classroom environments. By providing adaptive learning settings, instantaneous corrective feedback, and individualized teaching pathways, the incorporation of AI-based tools into language education aims to overcome these constraints.

The use of machine learning algorithms, natural language processing (NLP), deep learning models, and speech recognition technologies to aid with language learning is referred to as artificial intelligence in language education. Grammar correction platforms, intelligent tutoring systems, automated writing assessment tools, pronunciation analysis software, and conversational chatbots are all powered by these technologies. AI systems use ongoing data analysis to find trends in student performance and adjust content accordingly. Customized activities and contextualized comments that support skill development are thus provided to students. Nevertheless, the growing use of AI in education creates significant pedagogical, ethical, and cultural issues despite these encouraging developments. Critical analysis is needed to address issues with data privacy, algorithmic bias, reduced human interaction, and an excessive reliance on automated technologies.

This study therefore aims to explore the roles, benefits, limitations, and future implications of AI-based learning tools in language education while emphasizing the necessity of balanced integration that preserves the central role of human educators.

Objectives

The main objectives of this study are to:

1. Examine the roles of AI-powered tools in language learning contexts.
2. Identify the benefits and limitations of AI-based language learning tools for learners.
3. Examine how AI affects student enthusiasm, independence, and language competency development.
4.

Research Questions

1. How do AI-powered language learning tools affect learner engagement and language proficiency?
2. What are the major benefits and challenges associated with the use of AI tools in language learning?
3. How can educators effectively utilize AI tools to enhance language acquisition while maintaining the essential role of human instruction?

Review of Literature

The growing body of research on artificial intelligence in language learning highlights both its transformative potential and its inherent challenges. Scholars from applied linguistics, educational technology, and cognitive psychology have explored how AI reshapes language pedagogy, learner behaviour, and instructional design.

Woo and Choi, in their systematic review of AI-based language learning tools, emphasize that AI technologies enable real-time feedback, automated error detection, and personalized assessment mechanisms. According to Woo and Choi, "AI-based tools were used to identify errors, provide feedback, push resources, and assess/evaluate language abilities. After using these tools, the learners demonstrated gains in their language abilities, attitudes, knowledge, and use. In general, the learners perceived these tools as effective, efficient, accurate, easy to use, and useful/helpful for language learning" (5). Their review suggests that AI applications are particularly effective in areas such as grammar correction, pronunciation training, and vocabulary development.

In the AILLT study by Butarbutar, "the teachers generally had a favourable perspective on the role of AI in language learning. They believed that AI could efficiently improve the learning process by delivering personalized learning experiences, providing instant feedback, and creating interactive content" (154). Empirical studies further validate the positive impact of AI on learner engagement and achievement. Wei et al., in their study published in *Frontiers in Psychology*, demonstrate that AI-supported language instruction positively affects English learning achievement, second-language motivation, and self-regulated learning. They report that learners using AI tools exhibit higher levels of persistence, goal-setting behaviour, and metacognitive awareness compared to learners in traditional settings.

However, the literature also adopts a critical stance toward the unregulated use of AI in education. Jones highlights ethical and cultural concerns associated with AI-powered language learning tools. "AI tools … are biased in the gender, culture and language they use and can have implications on the user's privacy" (Jones 115).

Such biases may marginalize non-dominant linguistic and cultural identities, thereby reinforcing existing inequalities.

Theoretical Foundations

The pedagogical relevance of AI in language education can be understood through several theoretical frameworks. Constructivist theory emphasizes that learners actively construct knowledge through interaction and experience. AI-based platforms align with this principle by offering interactive tasks, adaptive feedback, and opportunities for experimentation. Communicative Language Teaching (CLT) also finds support in AI technologies, particularly through chatbots and virtual simulations that promote contextualized communication. Self-regulated learning theory further explains the effectiveness of AI tools, as learners can monitor their progress, receive immediate feedback, and adjust strategies independently. Additionally, cognitive load theory suggests that scaffolded AI feedback can reduce cognitive overload by breaking complex tasks into manageable components. These theoretical perspectives demonstrate that AI integration is not merely technological innovation but also pedagogically grounded development.

Analysis

In today's language learning classrooms, AI-powered tools serve several important functions. Perhaps the most notable is their ability to personalize learning. These systems look at how a learner performs — where they make mistakes, how quickly they respond, and what level they are at — and then adjust the content and feedback accordingly. This means learners can move at a pace that suits them and spend more time on the things they find difficult. AI also helps learners become more independent. Through chatbots, virtual tutors, and interactive apps, students can practice on their own outside of class. These tools create realistic language situations through conversations, role-plays, and context-based exercises, helping learners connect what they know in theory with how language actually works in practice. Beyond this, AI acts as a built-in assessment tool. Writing tools can instantly point out issues with grammar, word choice, and how ideas are organized, while speech recognition software helps learners work on their pronunciation by checking how accurately they are producing sounds. Getting this kind of immediate feedback makes learners more aware of their own language use and helps them improve faster.

One of the clearest advantages of AI language tools is the personalized feedback they offer. In a traditional classroom, a teacher simply cannot give every student individual attention all the time. AI fills that gap by being available constantly and adapting its support to each learner. This helps students spot their mistakes, grasp grammatical rules, and make corrections with greater confidence.

AI tools are also quite effective when it comes to building vocabulary. Using techniques like spaced repetition, real-world usage examples, and quizzes that adjust to the learner's level, these tools introduce words in ways that actually stick. Researchers like Woo and Choi have noted that combining repetition with meaningful context is what makes AI-based vocabulary learning particularly effective.

On top of all this, AI tools tend to make learners feel more motivated and confident. Because these platforms are interactive, learning feels more engaging and far less stressful. When feedback comes from a machine rather than a person, learners often feel freer to take risks with the language, which creates a healthier and more encouraging learning atmosphere. That said, AI language tools are not without their drawbacks. A significant concern is bias. Because these systems are built on large collections of existing data, they can end up reflecting the cultural, linguistic, and gender biases present in that data. As Jones has pointed out, this kind of biased output can put learners from different linguistic backgrounds at a disadvantage. Privacy is another issue worth taking seriously. These tools gather a great deal of information about learners — their writing, their voice, their habits — and without strong data protection measures in place, that information could be vulnerable.

There is also the risk of reducing real human interaction. Learning a language is not just a technical skill — it involves understanding people, cultures, emotions, and social contexts. Leaning too heavily on AI could mean learners miss out on genuine communication experiences and never fully develop the ability to use language appropriately in real-life situations. Furthermore, while AI feedback is fast, it is not always sensitive to nuance. Machines can struggle with subtle meanings, cultural references, or creative expression. This is why AI feedback should work alongside human input rather than trying to replace it.

For AI tools to truly benefit language learners, they need to be used thoughtfully and as part of a broader teaching strategy. Teachers should treat AI as a helpful resource, not a replacement for themselves. Blended learning — where AI tools and classroom teaching work hand in hand — tends to produce the best results. Educators also have a responsibility to help students engage with AI critically and wisely. By teaching learners how to make sense of automated feedback and encouraging them to reflect on their own progress, teachers can ensure that technology supports learning without creating unhealthy dependency.

Finally, those who design language curricula need to make sure that the AI tools they choose actually fit their learning goals and are sensitive to different cultural contexts. Building ethical standards, transparency, and inclusivity into these

platforms is not optional — it is essential for making language education fair and accessible to everyone.

Conclusion

AI-powered language learning tools offer transformative potential for modern education by enhancing learner engagement, personalization, and autonomy. Through adaptive feedback, interactive simulations, and autonomous learning support, AI technologies address many limitations of traditional language instruction. Empirical research indicates positive impacts on language proficiency, motivation, and self-regulated learning.

However, the integration of AI in language education must be approached with caution. Ethical concerns, algorithmic biases, data privacy issues, and the risk of diminished human interaction underscore the need for balanced pedagogical strategies. AI should function as an assistive technology that complements human teaching rather than replacing it.

Future research should focus on developing culturally sensitive, transparent, and ethically governed AI tools. Longitudinal studies examining the long-term effects of AI-assisted language learning on communicative competence are also necessary. Ultimately, a harmonious integration of artificial intelligence and human pedagogy holds the key to sustainable and inclusive language education in the digital age.

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