
MULTIDISCIPLINARY PATHWAYS IN ENGLISH LANGUAGE TEACHING: LEVERAGING AI AND INNOVATION FOR SUSTAINABLE LEARNING OUTCOMES

Ms. Trupti Tiwari and Dr. Mihika Kulkarni

ABSTRACT

In the rapidly evolving educational landscape, English Language Teaching (ELT) is undergoing significant transformation through the integration of multidisciplinary approaches and technological innovation. This paper explores how Artificial Intelligence (AI), pedagogy, linguistics, and digital tools collectively contribute to sustainable and effective language learning. It argues that a multidisciplinary framework enhances learner engagement, promotes inclusivity, and ensures long-term educational sustainability. Drawing on recent research and classroom practices, the study highlights the potential of AI-driven tools in improving communication skills, personalization, and learner autonomy.

1. INTRODUCTION

The 21st century has witnessed a shift from traditional, teacher-centered methodologies to learner-centric and technology-driven approaches in education. English, being a global lingua franca, requires innovative teaching strategies that cater to diverse learners. The integration of multidisciplinary pathways—combining education, technology, psychology, and linguistics—has emerged as a catalyst for change in ELT.

Sustainability in education is not only about environmental consciousness but also about creating systems that are adaptable, inclusive, and future-ready. This paper examines how innovation, particularly Artificial Intelligence (AI), contributes to sustainable practices in English language learning.

2. LITERATURE REVIEW

Recent studies indicate that AI has significantly impacted language learning. According to Holmes et al. (2022), AI-driven platforms provide personalized learning experiences that cater to individual learner needs. Similarly, Godwin-Jones (2021) emphasizes the role of digital tools in enhancing vocabulary acquisition and pronunciation skills.

From a pedagogical perspective, Vygotsky's social constructivist theory highlights the importance of interaction in learning. AI tools such as chatbots and virtual assistants simulate real-life conversations, thereby supporting this theory. Furthermore, interdisciplinary approaches combining cognitive psychology and linguistics have shown improved retention and comprehension among learners.

Research also suggests that sustainable education practices involve accessibility and inclusivity. AI-powered tools help bridge gaps for learners from diverse backgrounds, making education more equitable.

3. MULTIDISCIPLINARY APPROACH IN ELT**3.1 Integration of Technology and Linguistics**

The combination of technology and linguistics allows for deeper analysis of language patterns. Tools like speech recognition software help learners improve pronunciation and fluency. These tools provide immediate feedback, which is crucial for language acquisition.

3.2 Role of Psychology in Language Learning

Understanding learner motivation and cognitive processes is essential. AI systems can track learner progress and adapt content accordingly, reducing anxiety and increasing confidence. Gamified learning platforms further enhance engagement.

3.3 Pedagogical Innovations

Modern teaching methods such as flipped classrooms, blended learning, and experiential learning contribute to sustainable education. Teachers act as facilitators, guiding learners rather than merely delivering content.

4. Role of Artificial Intelligence in ELT**4.1 Personalized Learning**

AI enables customized learning paths based on the learner's proficiency level, pace, and preferences. Adaptive learning systems analyze performance data to suggest appropriate exercises.

4.2 Enhancing Communication Skills

AI chatbots and virtual assistants simulate real-life communication scenarios. This helps learners practice speaking and listening skills in a low-pressure environment.

4.3 Assessment and Feedback

Automated assessment tools provide instant feedback, allowing learners to identify and correct mistakes. This continuous evaluation supports long-term improvement.

4.4 Teacher Support

AI assists educators by automating administrative tasks, generating teaching materials, and providing insights into student performance. This allows teachers to focus more on interactive and creative aspects of teaching.

5. SUSTAINABILITY IN LANGUAGE EDUCATION

5.1 Accessibility and Inclusivity

Digital platforms make education accessible to learners regardless of geographical or socio-economic barriers. AI tools support learners with disabilities through features like speech-to-text and text-to-speech.

5.2 Lifelong Learning

Sustainable education encourages continuous learning. Online resources and AI-based applications enable learners to develop language skills beyond the classroom.

5.3 Resource Optimization

Technology reduces dependency on physical resources, promoting eco-friendly practices. Digital content minimizes paper usage and supports environmental sustainability.

6. CHALLENGES AND LIMITATIONS

Despite its advantages, the integration of AI in ELT faces several challenges:

- **Digital Divide:** Not all learners have access to technology.
- **Teacher Training:** Educators need proper training to effectively use AI tools.
- **Overdependence on Technology:** Excessive reliance may reduce human interaction, which is crucial for language learning.
- **Data Privacy Concerns:** Use of AI involves collection of learner data, raising ethical issues.

Addressing these challenges is essential for the successful implementation of sustainable educational practices.

7. DISCUSSION

The multidisciplinary approach to ELT aligns with the conference theme of “Catalysts of Change.” AI acts as a powerful catalyst by transforming traditional teaching methods into dynamic, interactive, and personalized experiences.

In institutions like yours, where focus is on empowering women through language education, AI can play a transformative role. It provides flexible learning opportunities, especially for those balancing multiple responsibilities. Moreover, integrating storytelling, pronunciation training, and communication skills through AI tools enhances overall language proficiency.

8. CONCLUSION

The integration of multidisciplinary pathways in English Language Teaching is essential for fostering innovation and sustainability. Artificial Intelligence, when combined with pedagogical and psychological insights, creates a holistic learning environment that is inclusive, adaptive, and future-ready.

To achieve sustainable outcomes, it is crucial to balance technology with human interaction, ensure accessibility, and provide adequate training for educators. As education continues to evolve, embracing innovation will be key to preparing learners for global communication and opportunities.

REFERENCES

- Godwin-Jones, R. (2021). Emerging technologies in language learning. *Language Learning & Technology*.
- Holmes, W., Bialik, M., & Fadel, C. (2022). *Artificial Intelligence in Education*.
- Vygotsky, L. S. (1978). *Mind in Society*. Harvard University Press.
- Warschauer, M. (2019). Technology and language learning.