



VEDA'S

JOURNAL OF ENGLISH LANGUAGE AND LITERATURE (JOELL)

An International Peer-Reviewed (Refereed) Journal

Impact Factor (SJIF) 6.002

<http://www.joell.in>

Vol.13, No.3

(July-Sept.)

2026

RESEARCH ARTICLE



METACOGNITION AND ARTIFICIAL INTELLIGENCE: REDEFINING ENGLISH TEACHER EDUCATION IN THE DIGITAL ERA

Dr. S. Abdul Jabbar

Assistant Professor, Department of Education and Training, MANUU, Hyderabad.

Email : dr.abduljabbar@manuu.edu.in

DOI: <https://doi.org/10.54513/JOELL.2026.13312>

ABSTRACT



Article history:

Received on: 02-07-2026

Accepted on: 04-08-2026

Available online: 18-08-2026

Advancements in artificial intelligence (AI) have led to innovations in educational approaches in terms of how English teachers construct lessons, support learners, and evaluate their students' performances (Holmes et al., 2022; UNESCO, 2023). English language learning technologies, which include, among others, generative AI, intelligent tutoring systems, automated writing evaluation, and conversational chatbots, provide unique benefits for personalization, real-time assessment, and increased learner involvement. The effectiveness of these technologies from an educational perspective is contingent not only on execution but also on the capability of learners and teachers to monitor and evaluate their own cognitive processes.

Keywords: *Metacognition in Language Education, Artificial Intelligence in English Teacher Education, Integrating AI Literacy and Metacognitive Pedagogy*

Author(s) retain the copyright of this article. Copyright© 2026 VEDA Publications.

Author(s) agree that this article remains permanently open access under the terms of the Creative Commons Attribution License 4.0 International License.



1. INTRODUCTION

The fast progress of artificial intelligence (AI) technology has changed the field of English language instruction through transforming instructional design, interaction in class, and methods of assessment (Holmes et al., 2022; UNESCO, 2023). The current developments in generative AI such as LLMs, intelligent tutoring systems, software for automated feedback, and adaptive learning platforms have become widely used in ELT (Kasneci et al., 2023; Zawacki-Richter et al., 2019). The technologies can be used for creating coherent texts, providing instant grammatical and lexical feedback, imitating conversation, and personalized instruction based on specific students' needs (Luckin, 2018; UNESCO, 2023). It has brought new possibilities for personalization of instruction and increasing productivity of teachers. Nevertheless, the wide use of the technology has caused many pedagogical and ethical issues, which should be considered. They include learners' overreliance on AI products, decreasing critical thinking skills, problems related to academic integrity and authorship, algorithmic bias, and the change of English teachers' professional roles in AI-mediated instruction (Luckin, 2018; UNESCO, 2023).

English teacher education, therefore, must be redefined to address a dual imperative: preparing teachers to use AI tools effectively and ethically, while cultivating metacognitive awareness in themselves and their students. This article explores how metacognition and AI can be jointly leveraged to reshape English teacher education in the digital era, moving beyond mere technological adoption toward deep pedagogical transformation.

2. METACOGNITION IN LANGUAGE EDUCATION

Thinking about thinking, or metacognition, is generally described as an awareness and regulation of one's cognitive processes (Flavell, 1979). Metacognition consists of two dimensions that are interrelated: metacognitive knowledge, referring to one understands of his/her own cognitive skills and strategies and task demands, and metacognitive regulation, which involves planning, monitoring, and evaluation of the learning process (Schraw & Dennison, 1994). In language learning, these dimensions help learners choose the most suitable language learning strategies, monitor comprehension when reading or listening, evaluate their writing and speaking and adjust their approach for effective learning (Oxford, 2017; Zimmerman, 2002).

Metacognition is vital for development of self-regulation, reflective practice, and critical literacy in English language classrooms. Students with metacognitive skills are more likely to plan strategically when writing, monitor understanding while communicating, and reflect critically after completing language tasks (Anderson, 2002; Oxford, 2017). Not less significant is teacher metacognition that allows teachers to reflect on their decisions, evaluate the effectiveness of their pedagogy, and change teaching practices accordingly. Reflective decision-making is regarded as a major characteristic of successful English language teaching and a core of modern teacher education programs (Schön, 1983; Farrell, 2015).



3. Artificial Intelligence in English Teacher Education

AI in English Teacher Education

Let us now explore the field of English teacher education, there are three primary conceptions of AI: AI as a tool, including language models, grammar checkers, automatic essay evaluation, chatbots, and recommendation tools that help teachers and students (Holmes et al., 2022; Zawacki-Richter et al., 2019);

AI as content, which is the knowledge about the working mechanisms of AI, its limitations, bias, and effects on language, literacy, and society, often referred to as AI literacy (Long & Magerko, 2020; UNESCO, 2023); and AI as a partner when intelligent agents orchestrate the learning process, adapt to tasks, and support reflection and feedback (Luckin, 2018; Holmes et al., 2022).

Modern research stresses that "beyond mere tool training, teacher education needs to cultivate critical AI literacy that involves developing knowledge of the logic, affordances, limitations, and ethics of AI, along with its impacts on assessment, feedback, authorship, and classroom power dynamics" (Kasneci et al., 2023; UNESCO, 2023; Mishra & Koehler, 2006).

4. Metacognition with the Help of AI

New paradigms imply that AI can support metacognition by offering learners "cognitive mirrors," which will make learners more aware of their strategies, mistakes, and progress because these mirrors will help visualize them (Luckin, 2018; Holmes et al., 2022).

AI will be able to prompt and ask learners reflective questions to make them plan, monitor, and

evaluate their work on the process of reading, writing, and any other language learning activity. While learning analytics will track behavioral patterns, such as time spent, revisions made, and strategies applied, and give feedback on the learning process, not the result (UNESCO, 2023; Kasneci et al., 2023).

On the other hand, an excessive dependence on AI might decrease the need for learners to plan, monitor, and evaluate their own learning activities if the mentioned cognitive processes are performed by intelligent systems. Therefore, English teacher education needs to prepare teachers who would create AI-assisted learning environments encouraging learners to engage actively in metacognition, critical reflection, and decision-making (Holmes et al., 2022; Luckin, 2018; Kasneci et al., 2023).

5. Reconceptualising the Teacher's Role

In AI-rich environments, English teachers increasingly move from being sole content providers to facilitators of critical thinking, creativity, and digital literacy. They orchestrate interactions between learners, texts, and AI tools, highlighting when and how to use AI and when to rely on human judgment

Teacher education programs should help prospective English teachers:

- Understand AI as a socio-technical system that shapes language use, genre conventions, and communicative practices.
- Develop the capacity to question AI outputs; identify biases, and model critical engagement for students.



- Embrace roles as “metacognitive coaches” who guide learners in reflecting on their use of AI for language tasks.

6. Integrating AI Literacy and Metacognitive Pedagogy

A redefined English teacher education curriculum must interlace together AI literacy and metacognition rather than treat them as distinct strands. Key components include:

- Conceptual foundations: Courses on digital literacy, AI basics, and metacognitive theory in language learning.
- Practical design: Training on how to generate AI-supported reading, writing, speaking, and listening tasks that obviously target metacognitive skills (e.g., asking students to document their use of AI during drafting and revision).
- Reflective practice: Structured opportunities for teacher runners to analyse their own interactions with AI tools, their decision-making, and their developing beliefs about technology and language learning.

For example, in a writing methods course, teacher candidates might:

- Use an AI writing assistant to generate feedback on student texts.
- Compare AI feedback with their own, reflecting on differences, biases, and pedagogical implications.
- Design metacognitive prompts for students that ask them to justify which suggestions to accept or reject and why.

7. Innovations in Curriculum and Assessment

AI tools can radically improve assessment in English language education through enhanced, ongoing, and customized feedback; however, they raise issues around authorship, originality, and integrity of learning (Zawacki-Richter et al., 2019; Kasneci et al., 2023). Future English teachers need to learn how to create assessments that focus on learning processes, reflection, and use of strategies rather than on final products, such as portfolios that would include chat logs from AI conversations, revision history, and reflective essays. Teachers need to learn how to help students articulate their metacognitive decisions during AI-assisted learning in terms of planning, monitoring, and evaluation of their actions, as well as how to make use of AI analysis of students' actions to facilitate formative assessment while ensuring student's privacy and independence (Holmes et al., 2022; UNESCO, 2023; OECD, 2021).

Examples of metacognitive assessment tasks may involve learning journals, think-aloud procedures, self-assessment checklists, peer feedback tasks and many others, which can be supported by AI tools used for recording, transcription, analysis, or annotation of learner's actions (Zimmerman, 2002; Oxford, 2017; Luckin, 2018).

8. Challenges and Ethical Issues

Risks to Metacognition

Whereas AI offers many possibilities for reflection and self-regulated learning, there are several risks for the acquisition of metacognitive skills as well. Learners may be involved in a superficial process of learning through simply accepting the recommendations made by AI without assessing their



validity or usefulness, thus missing out on the chance to face productive difficulties that will allow them to learn problem-solving skills and develop their resiliency and independence of thought (Kasneci et al., 2023; Luckin, 2018). In addition, the production of perfect work through AI can create an illusion of competence by masking learners' deficiencies in linguistics or concepts that can prevent real cognitive development (Holmes et al., 2022; UNESCO, 2023). Hence, AI metacognition awareness among teachers will help both educators and learners realize whether the use of AI is conducive to learning or if there is too much of it, hindering cognitive processes (Luckin, 2018; Kasneci et al., 2023).

Equity, Access, and Professional Autonomy

The incorporation of AI into English teacher education also presents some ethical issues concerning equity, access, and professional autonomy. The unequal access to AI technologies and digital infrastructure can create further educational inequities between institutions and students (UNESCO, 2023; OECD, 2021). Furthermore, the predominance of AI systems trained in dominant varieties of English can promote linguistic biases against diverse Englishes and local cultures (Long & Magerko, 2020; UNESCO, 2023). The professional autonomy of teachers can be affected as well since institutional AI policies and platform-based suggestions can limit their decisions about teaching methods (Holmes et al., 2022; Selwyn, 2019). Thus, in view of the future, English teacher education needs to consider the ethical issues and prepare teachers for the adoption of culturally sensitive and just approaches to AI in language education (Kasneci et al., 2023; Holmes et al., 2022).

9. Conclusion

The quick progress of artificial intelligence is providing both prospects and problems when it comes to teacher education programs for English. In the face of increasing incorporation of AI-powered technologies in language classes, the process of preparing teachers will not only require developing their technical skills but also encouraging strategic, reflective, and ethical approaches to their teaching practice. The role of metacognition in this context is crucial as it provides people with the opportunity to think about their own learning and instruction processes, as well as plan, monitor, and evaluate them. With the help of AI-enabled learning environment, a metacognitive approach to learning can facilitate critical thinking, learner autonomy, creativity, and effective decision-making.

In summary, this paper provided the evidence of how essential it was to integrate metacognitive pedagogy along with AI literacy when preparing English teachers to work in the twenty-first century. In other words, teacher education programs have to encourage reflection, ethical use of AI, innovative approaches to assessment and learning, and learner-centeredness as far as it allows students to engage in cognition actively. Nonetheless, there are certain issues to solve connected with such topics as equity, academic integrity, privacy, and teacher autonomy.

References

- Anderson, N. J. (2002). The role of metacognition in second language teaching and learning. *ERIC Digest*. ERIC Clearinghouse on Languages and Linguistics.
- Farrell, T. S. C. (2015). *Promoting teacher reflection in second language education: A framework for TESOL professionals*. Routledge.



- Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, 34(10), 906–911.
<https://doi.org/10.1037/0003-066X.34.10.906>
- Holmes, W., Bialik, M., & Fadel, C. (2022). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.
<https://doi.org/10.1006/ceps.1994.1033>
- Jabbar, A. (2019). Challenges in Learning English as a Second Language: An Overview. *Smart Moves Journal Ijellh*, 9-9.
- JABBAR, A. (2025). An Intercultural Approach to English Language Teaching: The Concept of Intercultural Competence, Pedagogical Strategies for Intercultural ELT & the Global Context of Intercultural ELT. *International Journal of research in Educational Sciences.*, 8(1), 141-150.
- Jabbar, D. A., & Barkati, M. G. (2024). The flipped classroom: Planning and strategies for enhancing teaching-learning process communication. *Future Education in Teaching and Learning*, 23.
- Jabbar, S. A. (2020). *Pedagogy of English*. Lambert Academic Publishing.
- Jabbar, S. A. (2024). Mobile-assisted language learning (MALL) in English education: Trends and developments. *International Journal of English Literature and Social Sciences*, 9(6), 113-116.
- Long, D., & Magerko, B. (2020). What is AI literacy? Competencies and design considerations. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* (pp. 1–16). Association for Computing Machinery. <https://doi.org/10.1145/3313831.3376727>
- Luckin, R. (2018). *Machine learning and human intelligence: The future of education for the 21st century*. UCL IOE Press.
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017–1054.
<https://doi.org/10.1111/j.1467-9620.2006.00684.x>
- OECD. (2021). *OECD digital education outlook 2021: Pushing the frontiers with artificial intelligence, blockchain and robots*. OECD Publishing.
<https://doi.org/10.1787/589b283f-en>
- Oxford, R. L. (2017). *Teaching and researching language learning strategies: Self-regulation in context* (2nd ed.). Routledge.
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. Basic Books.
- Schraw, G., & Dennison, R. S. (1994). Assessing metacognitive awareness. *Contemporary Educational Psychology*, 19(4), 460–475.
- Selwyn, N. (2019). *Should robots replace teachers? AI and the future of education*. Polity Press.
- UNESCO. (2023). *Guidance for generative AI in education and research*. UNESCO. <https://unesdoc.unesco.org/>
- Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education—Where are the educators? *International Journal of Educational Technology in Higher Education*, 16(39).
<https://doi.org/10.1186/s41239-019-0171-0>
- Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice*, 41(2), 64–70.
https://doi.org/10.1207/s15430421tip4102_2