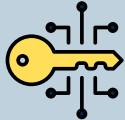




ARTIFICIAL INTELLIGENCE IN LANGUAGE LEARNING A TWENTY-YEAR SCOPING REVIEW OF APPLICATIONS, RESEARCH METHODS, AND OUTCOMES

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Chatbots • Productive Skills • Affective Learning Outcomes
Mixed Methods Research • Publication Bias

What Can I Learn?



What AI tools are being studied?



What skills and outcomes get attention?



Take a critical stance toward overly positive claims about AI effectiveness.

What Evidence is Summarised ? What Does it Find?

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Empirical Studies

published between 2019 and 2024.



Types of AI technologies used (e.g., chatbots, commercial tools)



Research methods (quantitative, qualitative, mixed methods)



Target language skills and learning outcomes



Learner populations, learning contexts, and target languages



Most studies focus on writing and speaking, with far less attention to listening and reading.



Research primarily focuses on university students, formal classrooms, and English learning, limiting generalisability.



- Research has shifted from **rule-based systems** to advanced AI applications, especially **chatbots**.
- There is **growing interest in affective outcomes**, suggesting AI is not only about performance but also learner emotions and engagement.

How Can I Use the Findings?



Focus on Productive Skills

Chatbots and writing assistants have the **strongest evidence**, so start there.



Watch the Whole Learner

Emotional responses — motivation, confidence, anxiety — **matter as much as performance.**



Experiment with New Areas

AI support for listening or reading, informal learning, and non -English languages are **underresearched areas.**