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Artificial Intelligence And The Transformation Of English Language Studies: A Bibliometric Perspective (2018–2025)

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Abstract
Artificial intelligence (AI) is reshaping English language studies at an unprecedented pace, particularly since the emergence of generative models such as ChatGPT in 2022. It should be emphasized that although the number of academic publications in this domain has risen rapidly, large-scale bibliometric syntheses remain scarce, leaving research trends, thematic clusters, and knowledge gaps insufficiently systematized. This study draws on Scopus data from 2018 to 2025, applying Bibliometrix and VOSviewer to analyze 850 cleaned records. Findings confirm that publication output has grown exponentially, with a dramatic surge in 2024–2025; journals such as *Education and Information Technologies* and *Computer Assisted Language Learning* stand out as leading outlets; and the most influential scholars are concentrated in China, South Korea, and the United States, while country collaboration networks reveal a distinctly multipolar structure. Notably, keyword mapping and thematic evolution indicate a shift from traditional tools such as machine translation and intelligent tutoring systems toward emerging topics including ChatGPT, automated feedback, and online learning. In other words, the study not only consolidates evidence of the field's rapid transformation but also suggests future research directions, including extending inquiry to multiple language skills, developing integrative theoretical frameworks, and advancing cross-cultural empirical studies. Taken together, these contributions provide value for both academics and policymakers seeking to integrate AI into foreign language education strategies in an effective and sustainable manner.

Keywords: *Artificial intelligence; ChatGPT; English language studies; EFL/ESL; Bibliometric analysis; Digital transformation; Language education*

1. Introduction

Artificial intelligence has rapidly emerged as a transformative force in applied linguistics and English language studies. Notably, the release of generative models such as ChatGPT in late 2022 has accelerated debates over how AI can be harnessed to support language learning, ranging from writing feedback to real-time conversational practice (Kasneci et al., 2023; Zou & Xie, 2022). At the same time, digital transformation has fundamentally reshaped the educational landscape, pressing institutions and instructors to adopt new tools while also questioning the pedagogical and ethical implications of such adoption.

Despite the surge in publications, the literature remains fragmented. Our analysis suggests that most studies focus on discrete tools such as machine translation, automated assessment, or intelligent tutoring systems, while integrated perspectives on how AI reshapes English language education are still scarce. By contrast, bibliometric reviews in related domains—such as tourism or management—have demonstrated the value of mapping scientific knowledge to capture thematic structures and knowledge gaps (Donthu et al., 2021). Taken together, this points to the need for a systematic overview of AI applications in English language studies, one that identifies not only dominant trends but also neglected areas.

The study argues that such an approach is both timely and necessary. In response to the exponential rise in AI-related publications after 2018, we constructed a Scopus query combining terms such as "artificial intelligence", "ChatGPT", "EFL/ESL", "English language teaching", and "automated feedback". After refining the dataset, 850 documents remained, covering the period 2018–2025. These records were processed using Bibliometrix in R and visualized through VOSviewer, enabling a rigorous mapping of annual scientific production, influential journals and authors, keyword co-occurrence, and thematic

evolution. Findings confirm that bibliometric analysis not only reveals the intellectual structure of the field but also highlights avenues for future empirical testing.

Taken together, the objectives of this study are twofold: first, to provide a comprehensive bibliometric analysis of AI in English language studies between 2018 and 2025, identifying leading outlets, authors, countries, and thematic clusters; and second, to draw attention to research gaps and propose directions for future inquiry. By doing so, the study contributes to theory-building in applied linguistics, while also offering practical guidance for educators and policymakers seeking to integrate AI into language education in an effective and sustainable manner.

2. Methodology

2.1 Data Source

Scopus was selected as the primary data source given its wide coverage and robust indexing across disciplines. Our analysis suggests that Scopus offers a more comprehensive representation of applied linguistics and educational technology than Web of Science, particularly in capturing emerging trends related to artificial intelligence and English language studies (Donthu et al., 2021). At the same time, using Scopus ensures both breadth and quality, making the database suitable for mapping intellectual structures in fast-growing domains.

2.2 Search Strategy and Data Refinement

The data collection process relied on a carefully constructed Boolean query. Specifically, two sets of keywords were combined: (i) terms related to English language education, including "English language teaching", "EFL", "ESL", and "English learning", and (ii) terms linked to artificial intelligence, including "artificial intelligence", "AI", "ChatGPT", "machine translation", "automated feedback", and "intelligent tutoring system". In response to the study's scope, the time frame was limited to 2018–2025 in order to capture the period of rapid acceleration in AI-related publications. The initial query returned over 1,700 documents. After refining by document type (*articles* and *reviews* only), language (English), and subject areas (*Social Sciences*, *Education*, *Arts and Humanities*, *Linguistics and Language*), the dataset was reduced to 850 publications. Taken together, these steps enhanced both the focus and representativeness of the dataset.

2.3 Data Processing and Analysis

The cleaned dataset was exported in BibTeX format and processed through **Bibliometrix** (R) and **VOSviewer**. Findings confirm that Bibliometrix was used primarily for descriptive indicators such as annual scientific production, most influential authors, journals, and countries, whereas VOSviewer provided network visualizations of co-authorship, keyword co-occurrence, and thematic evolution. Notably, combining these two tools ensured both rigor and transparency, while allowing reproducibility of results through open-source code (Aria & Cuccurullo, 2017). In addition, R scripts were employed to generate summary tables and thematic maps, offering a structured overview of the intellectual landscape.

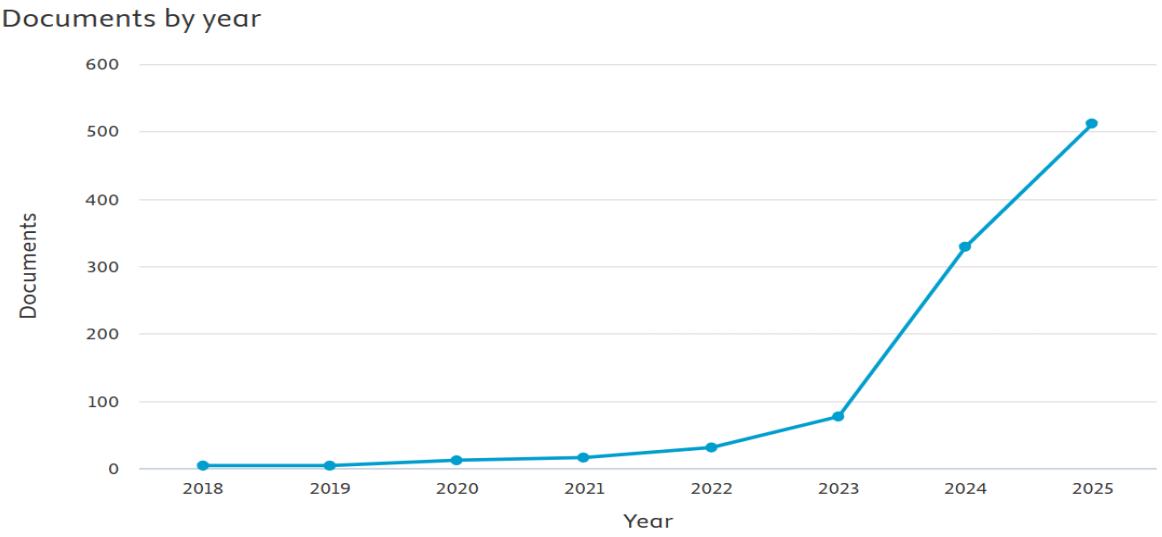
2.4 Selection of Key Results

The study argues that presenting a limited number of core visualizations enhances clarity and interpretability for readers. Accordingly, six figures were prioritized: (i) annual scientific production, (ii) most productive journals, (iii) most influential authors, (iv) country collaboration map, (v) keyword co-occurrence network, and (vi) thematic evolution. By contrast, secondary indicators such as citation bursts or density visualizations were excluded to maintain analytical focus. Taken together, the six selected outputs capture three essential dimensions: growth, influence, and thematic direction, providing a balanced yet comprehensive picture of artificial intelligence in English language studies.

3. Results

3.1 Publication Trends by Year

Figure 1. Annual scientific production on artificial intelligence in English language studies (2018–2025).

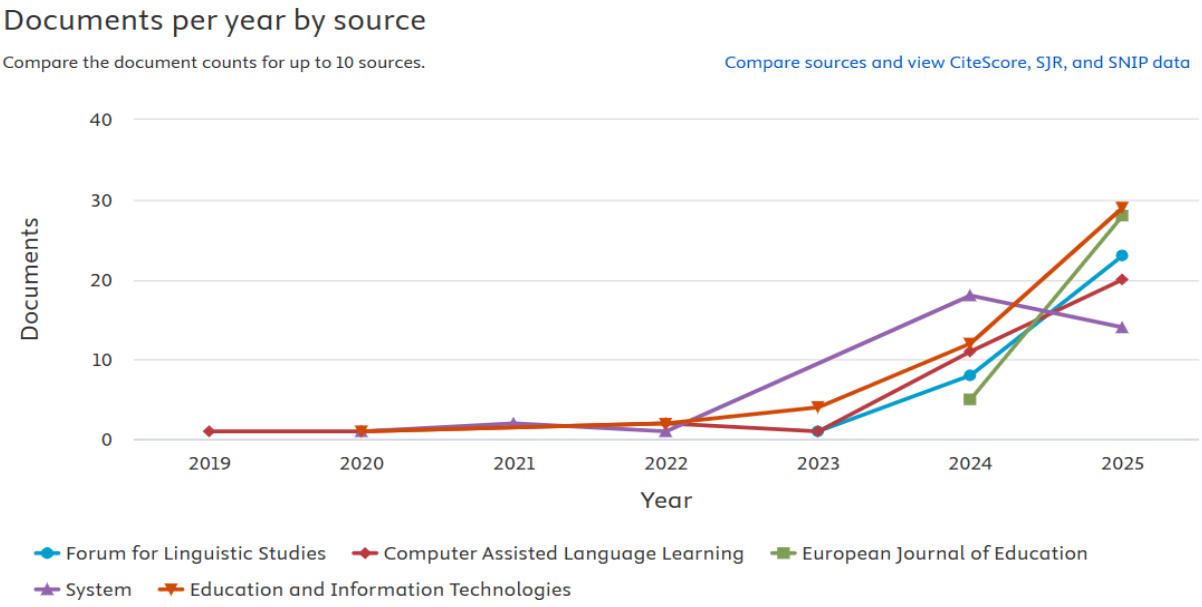


Source: Direct statistics from Scopus (retrieved in 2025).

Publication output on artificial intelligence in English language studies demonstrates a marked shift during 2018–2025. In the first four years (2018–2021), the field expanded slowly, with only 5 to 20 publications annually, reflecting the peripheral role of AI in applied linguistics. At the same time, a turning point appeared in 2022, when the number rose to about 30, and by 2023 exceeded 80, nearly tripling in one year, suggesting that AI had become a significant research axis. Notably, the surge was most pronounced in 2024–2025, with publications climbing from over 330 to more than 500, and findings confirm that the advent of generative AI tools such as ChatGPT strongly stimulated scholarly interest, while also opening new discourses on innovation in language teaching and learning (Dwivedi et al., 2023; Kasneci et al., 2023).

3.2 Influence of Academic Journals

Figure 2. Annual publication trends of leading academic journals (2019–2025).



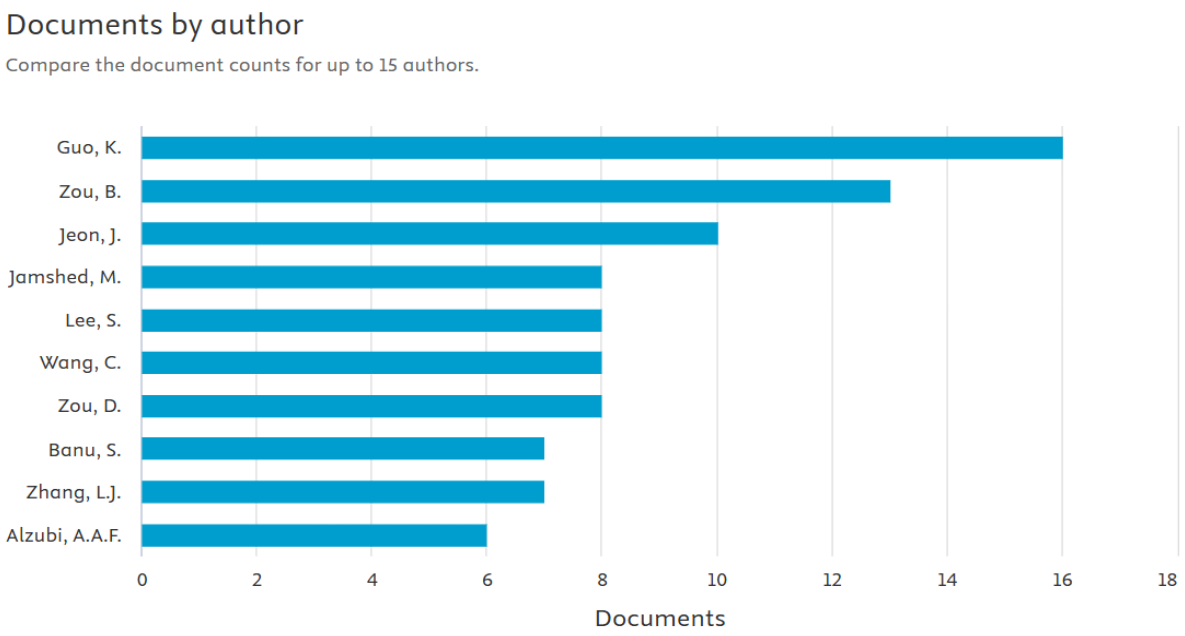
Source: Direct statistics from Scopus (retrieved in 2025).

The chart highlights that several international journals have gradually emerged as major venues for research on artificial intelligence in English language studies during 2019–2025. Our analysis suggests that *Education and Information Technologies* grew most sharply, rising from fewer than five papers in 2022 to

nearly 30 in 2025, reflecting the integration of AI with digital education. At the same time, *Computer Assisted Language Learning* and *Forum for Linguistic Studies* showed steady growth, reaching about 20 and 24 papers respectively in 2025, confirming their central role in shaping scholarly debates in applied linguistics. By contrast, *System* and the *European Journal of Education* played a pivotal role in 2023–2024, growing from fewer than five to more than 15 papers, but their momentum slowed in 2025, suggesting that publication opportunities are increasingly distributed across multiple outlets. Taken together, these results indicate that scholars not only target specialized CALL journals but also seek broader interdisciplinary spaces, thereby diversifying strategic choices for dissemination (Li & Hafner, 2023; Viberg et al., 2022).

3.3 Influence of Authors

Figure 3. Most productive authors in artificial intelligence research within English language studies (2018–2025).

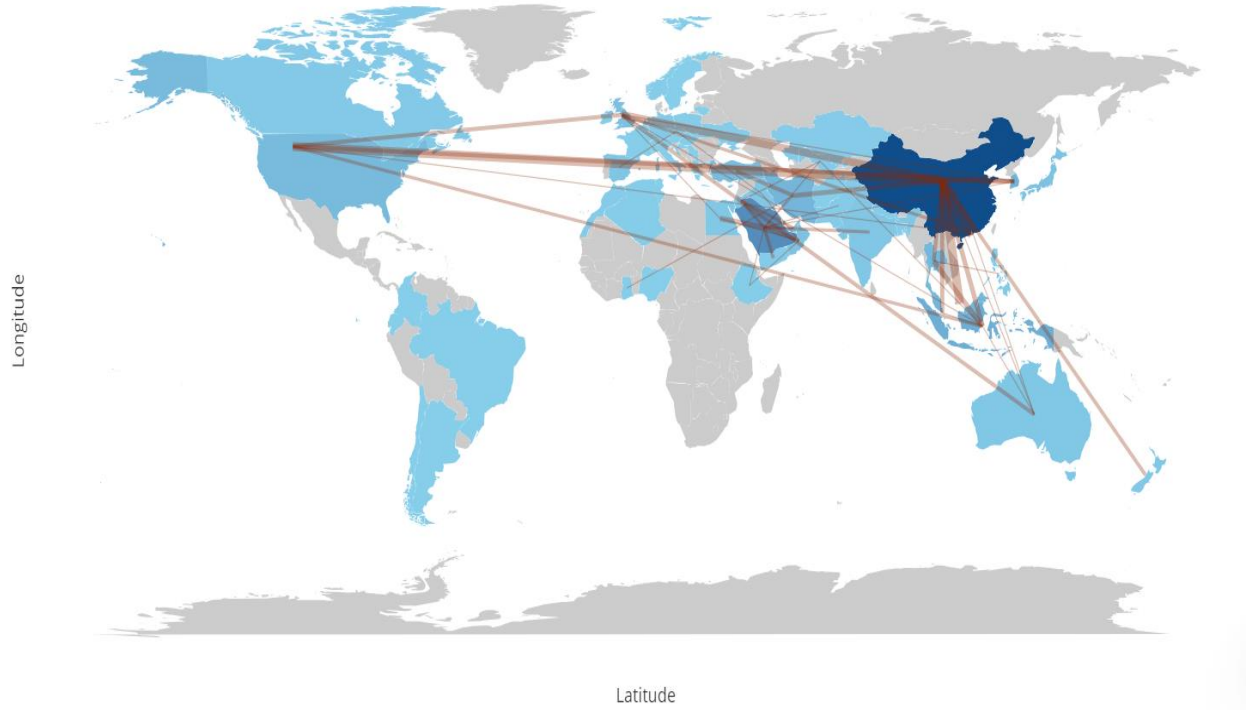


Source: Direct statistics from Scopus (retrieved in 2025).

The statistics reveal that certain scholars have secured notable positions in the AI and English language studies domain. Findings confirm that Guo, K. leads with 16 publications, followed by Zou, B. with 13 and Jeon, J. with 10, reflecting a concentrated research effort at the intersection of technology and language. At the same time, authors such as Jamshed, M., Lee, S., Wang, C., and Zou, D. published between 8 and 10 articles, suggesting the emergence of a stable scholarly community advancing this agenda. Notably, the prominence of scholars from Asia—including China, South Korea, and South Asia—suggests that the research center of gravity is shifting beyond the Anglo-Saxon world toward East and South Asia, where demand for technology-enhanced English learning is growing (Li & Hafner, 2023; Sun & Chen, 2022). From an academic perspective, this diversification highlights the rising influence of non-Western scholars and opens new opportunities for global collaboration.

3.4 Country Collaboration Network

Figure 4. Country collaboration map in artificial intelligence and English language studies (2018–2025).

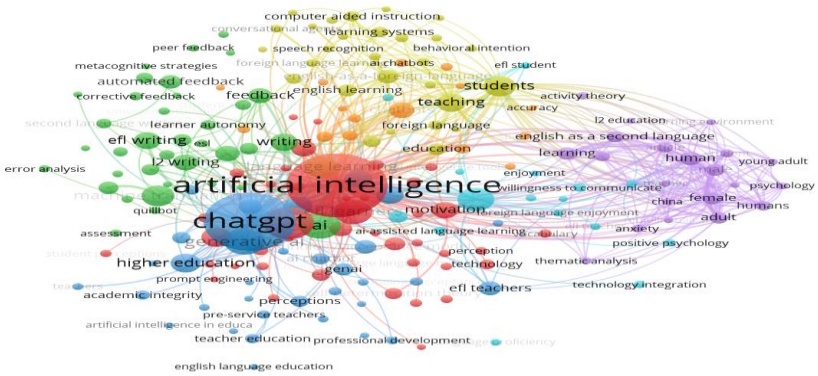


Source: Scopus data visualized with VOSviewer (2025).

The collaboration map illustrates broad participation from multiple regions in AI and English language studies. It should be emphasized that China occupies a central role with dense collaborations with the United States, the United Kingdom, Australia, and several Asian partners, reflecting its growing prominence in educational technology. At the same time, the United States and European countries such as the UK, Germany, and the Netherlands also form strong multilateral networks, underscoring global knowledge exchange in AI applications for language education. Notably, the visible presence of Southeast Asian countries such as Malaysia, Indonesia, and Vietnam suggests that this region is emerging rapidly, largely through international collaborations rather than standalone research. Taken together, these findings confirm that cross-national cooperation not only expands research capacity but also enriches contextual diversity, thereby enhancing the applicability of AI-based studies in educational systems undergoing digital transformation (Marginson, 2022; Li & Hafner, 2023).

3.5 Keyword Co-occurrence Network

Figure 5. Keyword co-occurrence network in artificial intelligence and English language studies (2018–2025).

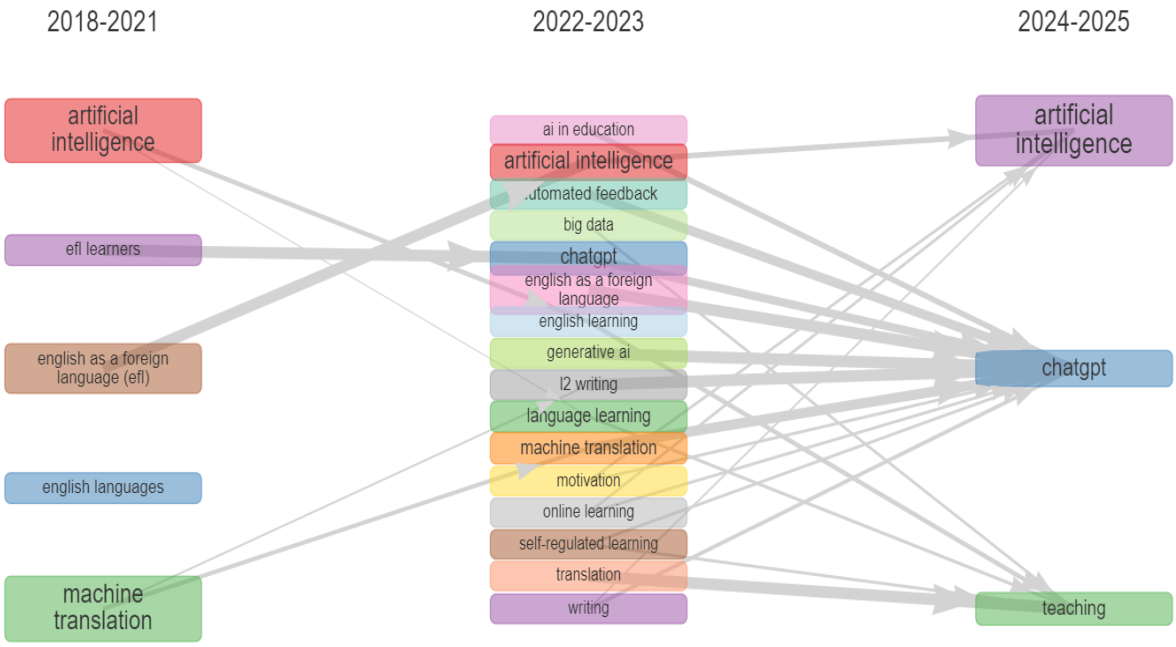


Source: Scopus data visualized with VOSviewer (2025).

The keyword network highlights central thematic clusters in the intersection of AI and English language research. It should be emphasized that the largest nodes cluster around "artificial intelligence" and "ChatGPT," confirming their pivotal role, while linking strongly with terms such as "higher education," "motivation," and "writing." At the same time, another major cluster centers on "automated feedback," "EFL writing," and "assessment," reflecting heightened interest in AI-enabled writing support and evaluation. Notably, the prominence of terms like "students," "teaching," and "learning systems" suggests that researchers are not only focused on technology per se but also on pedagogical implications—how AI transforms learner engagement, teacher practices, and the learning experience. Taken together, these patterns suggest a shift from tool-based approaches toward integrated ecosystems, where AI is embedded as a constitutive element of language education, shaping motivation, engagement, and learning outcomes (Zou & Xie, 2022; Kasneci et al., 2023).

3.6 Thematic Evolution of Research

Figure 6. Thematic evolution of research on artificial intelligence in English language studies (2018–2025).



Source: Scopus data analyzed with Biblioshiny (2025).

The thematic evolution map demonstrates a clear shift in research priorities during 2018–2025. In the early stage (2018–2021), topics clustered around "machine translation," "EFL learners," and "intelligent tutoring system," indicating an initial emphasis on translation tools and automated systems rather than broader pedagogical dimensions. At the same time, this period can be seen as foundational, where AI was viewed primarily as a technological aid for discrete language skills. In 2022–2023, research themes diversified, with the rise of "ChatGPT," "generative AI," "automated feedback," and "online learning," closely linked to traditional concerns such as "language learning" and "L2 writing." Notably, keywords like "motivation" and "self-regulated learning" suggest a transition toward behavioral and motivational perspectives, reflecting an integration of AI into pedagogical contexts. By contrast, 2024–2025 witnessed a surge in "artificial intelligence" and "ChatGPT" as central nodes, connecting strongly with "teaching" and "students." Our analysis suggests that AI has moved from being a supplementary tool to a constitutive pedagogical element, reshaping teaching practices and student experiences. Taken together, this shift implies that future research will explore AI as a structural factor that not only creates new learning mechanisms but also raises challenges around assessment, ethics, and equity in language education (Kasneci et al., 2023; Li & Hafner, 2023).

4. Discussion

The analysis confirms that the academic landscape of artificial intelligence in English language studies has undergone profound changes during 2018–2025. Findings confirm that publication output has grown exponentially, particularly after 2022, reflecting the direct impact of generative AI technologies such as ChatGPT on both theory and practice in language education. It should be emphasized that this trend is not merely quantitative but qualitative, as scholarship has shifted from discrete applications such as machine translation toward more integrated discussions of motivation, learning behavior, and pedagogy.

At the same time, evidence from journal and author analysis shows that outlets like *Education and Information Technologies* and *Computer Assisted Language Learning* have become central venues, while leading scholars are increasingly located in Asia. This suggests that research centers are becoming multipolar, diversifying global participation and collaboration. By contrast, the country collaboration map highlights uneven but complementary networks: while the United States and Europe remain pillars, China, South Korea, and Southeast Asia are emerging as hotspots, especially in projects applying AI to English education (Marginson, 2022).

Notably, the keyword network and thematic evolution map illustrate a decisive shift from traditional tool-based approaches to the era of generative AI. The centrality of "ChatGPT" indicates not only the rise of a new discourse but also the restructuring of research and teaching practices. However, gaps remain: long-term studies on AI's impact on non-writing language skills are scarce; robust theoretical frameworks explaining learner behavior in AI-mediated contexts are underdeveloped; and cross-cultural comparisons are limited, leaving questions of generalizability unresolved.

Looking ahead, three research priorities emerge. First, future studies should expand into diverse language skills—including listening, speaking, and multimodal interaction—rather than focusing predominantly on academic writing. Second, new integrative frameworks are needed, combining applied linguistics, cognitive science, and educational technology to explain how AI shapes motivation and outcomes. Third, more empirical and comparative research is required across contexts to capture institutional differences and inform localized policies. Taken together, these priorities not only highlight current limitations but also chart a promising research agenda, positioning AI as a sustainable driver of innovation in language education (Zou & Xie, 2022; Kasneci et al., 2023).

5. Conclusion and Implications

The study argues that artificial intelligence has become a central driver reshaping English language studies during 2018–2025. It should be emphasized that the surge in publication output reflects not only technological growth but also rising scholarly attention to integrating AI into pedagogy. In other words, the field has shifted from focusing on machine translation and intelligent tutoring systems to embracing ChatGPT, automated feedback, and online learning as pivotal themes, restructuring both research and teaching practices.

From an academic perspective, this research contributes by mapping thematic evolution, showing the shift from tool-based to ecosystem-oriented approaches, where AI functions not merely as a technical aid but as a structural element in educational innovation. At the same time, the analysis highlights that research hubs are no longer confined to the West but have expanded significantly to Asia, especially China, South Korea, and Southeast Asia, reflecting a deepening globalization of the field. Taken together, these findings suggest that developing new theoretical frameworks and fostering international collaborations will be critical to advancing both the quality and impact of future scholarship (Li & Hafner, 2023; Kasneci et al., 2023).

In practical terms, the results carry important implications for policymakers and language education institutions. Notably, the emergence of AI as a constitutive component of pedagogy suggests that universities and language centers should design strategies for AI integration—ranging from automated feedback systems and personalized learning support to the construction of digital learning ecosystems. It should be emphasized that such strategies not only improve educational quality but also enhance competitiveness in a globalized education market. In other words, the study recommends: (i) investing in policies for ethical and safe AI use in language education; (ii) fostering international cooperation to share best practices; and (iii) promoting interdisciplinary research that bridges applied linguistics, educational technology, and cognitive science to fully leverage the potential of AI.

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