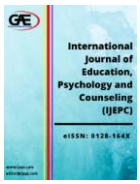
International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79



INTERNATIONAL JOURNAL OF EDUCATION, PSYCHOLOGY AND COUNSELLING (IJEPC)
https://gaexcellence.com/ijepc

MAPPING THE RISE OF GENERATIVE AI IN L2 WRITING FEEDBACK: A BIBLIOMETRIC ANALYSIS

Ezzan Amnie Azizan[1*,2], Ainol Madziah Zubairi[3], Tunku Badariah Tunku Ahmad[4]

[1]Kulliyah of Education, International Islamic University (IIUM), Kuala Lumpur, Malaysia
[2]Faculty of Education, Social Sciences and Humanities, Universiti Poly-Tech Malaysia (UPTM), Malaysia
ezzan@uptm.edu.my https://orcid.org/0009-0007-2813-8529
[3]Kulliyah of Education, International Islamic University (IIUM), Kuala Lumpur, Malaysia
ainol@iium.edu.my https://orcid.org/0000-0002-8237-2128
[4]Kulliyah of Education, International Islamic University (IIUM), Kuala Lumpur, Malaysia
tbadariah@iium.edu.my https://orcid.org/0009-0007-1635-0784
*Corresponding Author

Article Info:

Article history:
Received date: 28.09.2026
Revised date: 13.10.2026
Accepted date: 02.11.2026
Published date: 01.12.2026

To cite this document:

Azizan, E. A., Zubairi, A. M., & Ahmad, T. B. T. (2026). Mapping The Rise Of Generative AI In L2 Writing Feedback: A Bibliometric Analysis. *International Journal of Education, Psychology and Counselling, 11*(65), 59-79.

Abstract:

Generative Artificial Intelligence (GenAI) is transforming Second Language (L2) writing instruction by enabling new forms of automated and interactive feedback that are personalised to individual learners. Academic interest has increased rapidly. However, the development, intellectual structure and emerging directions of GenAI mediated L2 writing feedback are insufficiently synthesised at the bibliometric level. The study maps the evolution and research landscape of GenAI in L2 writing feedback by examining publication trends, citation impact, geographical contributions, research themes and international collaboration. A bibliometric analysis was carried out on Scopus using an advanced search strategy that combined two main concepts: GenAI and writing feedback. The bibliographic records were then cleaned and standardised using OpenRefine, the publication and citation patterns were examined using Scopus Analyser, and the keyword co-occurrence and country level co-authorship networks were visualised with VOSviewer. The final dataset included 1,307 publications from 2023 to August 2026. The findings show a fast-growing area, with GenAI, Artificial Intelligence (AI), ChatGPT, large language models, higher education and feedback being the most frequent keywords. Specific notions such as academic writing, L2 writing, writing feedback, feedback literacy and English as a Foreign Language (EFL) writing and AI generated feedback seem to indicate an increasingly focused trajectory around language learning and writing development. The United States and China are the output giants. The analysis at country

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

level shows an increasingly international landscape, with collaboration concentrated among major research hubs. Therefore, GenAI in L2 writing feedback has swiftly evolved from broad investigations of AI usage to more focused studies on feedback, writing development, learner engagement and pedagogical integration. This area is now an important and growing field of research in language education.

DOI: 10.35631/IJEPC.1165004

Keywords:

Artificial Intelligence, Generative AI, Writing Feedback

© The authors (2026). This is an Open Access article distributed under the terms of the Creative Commons Attribution (CC BY NC) (http://creativecommons.org/licenses/by-nc/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact ijepc@gaexcllence.com.

Introduction

Generative Artificial Intelligence (GenAI) has become an important development in Second Language (L2) writing research. Its growth is most visible in written feedback, where ChatGPT and related tools are currently being explored as sources of corrective and revision oriented support. Writing and feedback had already been recognised as core application areas in AI assisted language education in previous bibliometric overviews. The reviews reported a steady increase in publication volume, significant contributions from China and the United States, and a field with Natural Language Processing (NLP), intelligent tutoring systems and chatbot based instruction (Jaleniauskiene et al., 2023; Kartal & Yeşilyurt, 2024; Liang et al., 2021). More recent mappings show that the more general AI in language education literature is dramatically through 2023 and 2024. The focus of the research interest moved from general references to artificial intelligence to specific tools like ChatGPT and other recent NLP applications (Haristiani et al., 2025; Rahman et al., 2024). GenAI is a distinct break in that larger trajectory. Instead of scoring or flagging linguistic features, it produces interactive and text generating feedback that changes how feedback is delivered, revised and interpreted (Barrot & Bui, 2026; Crosthwaite & Sun, 2025; D. Yan & Zhang, 2024).

Pedagogically, it is an important shift. Written feedback has long been a cornerstone of L2 writing instruction. Traditional feedback remains challenging to individualise and to scale up in large classes. In both bibliometric and systematic studies, AI tools are repeatedly described as providing personalised learning, more efficient evaluation and stronger support for assessment. Chatbot based systems are increasingly proposed as smart assistants in language learning (Haristiani et al., 2025; Kartal & Yeşilyurt, 2024; Lubis et al., 2024; C.-W. Yang et al., 2025). The current reviews indicate that ChatGPT is the most investigated model, specifically when considering L2 writing assisted by GenAI. Research has focused on English learners in higher education. The most common aims relate to learners perceptions, academic writing practices and the impact of AI feedback on writing quality (Crosthwaite & Sun, 2025; C.-W.

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

Yang et al., 2025). The scoping review of 51 GenAI influenced L2 written feedback studies published since 2022 revealed that most of the revealed that most studies investigate enhancement of writing quality or students' and teachers' perceptions. Common methods include quantitative surveys, revision analysis, pre-test and post-test designs (Crosthwaite & Sun, 2025). These patterns suggest a field that is growing in size and in methodological density. A bibliometric analysis is thus timely to identify publication trajectories, collaborative structures, topical clusters and the emerging intellectual core of the area.

The growth of this research area is linked to the affordances often attributed to GenAI feedback. The value of AI generated feedback has been recognised in L2 writing contexts for its immediacy, accessibility, fluency and capacity to deliver individualised responses from planning through to editing. These features distinguish it from previous automated writing evaluation systems and help explain its swift implementation (Barrot & Bui, 2026; Crosthwaite & Sun, 2025; Hyland, 2026). There is empirical evidence that these tools can enhance some aspects of writing performance. For example, an experimental study found that learners receiving feedback from the AI that was enhanced outperformed a control group on post-test scores in a significant way. Higher rates of revision and better content, organization and cohesion were also positively correlated with AI use (Mekheimer, 2025). One comparative study found GenAI feedback improved grammar and sentence variety. Both teacher mediated and AI mediated corrective feedback resulted in significant gains in accuracy, particularly in conventions and overall scores (Tabari et al., 2025; Z. Zhang et al., 2025). Learners often describe AI assisted feedback as engaging because it reduces frustration and builds confidence. However, chatbot-based feedback environments can be competence demanding and time consuming (Mekheimer, 2025; T. Wu & Yu, 2024; D. Yan & Zhang, 2024). These findings help explain why GenAI has become so prominent in L2 writing feedback These findings contribute to the explanation of the prominence of GenAI in the research of L2 writing feedback. It promises scalable support for revision, while apparently improving at least some measurable dimensions of writing performance and learner engagement.

The literature does not support a simple narrative of replacement, and that tension is at the core of field's emergence. Comparative studies and reviews indicate that GenAI works better on surface level features such as grammar, vocabulary, clarity and sentence variety. It appears to be less effective on higher order concerns such as argumentation, organisation, disciplinary conventions, audience awareness and critical thinking (Hyland, 2026; Mekheimer, 2025; Z. Zhang et al., 2025). Hybrid models that combine GenAI with teacher or tutor input tend to yield stronger gains in complex academic writing. For example, a 12-week study found a hybrid feedback group outperforming a GenAI-only group in organization, critical thinking and motivation. A conceptual review also argued that AI feedback is most effective when combined with teacher guidance, rather than in place of human response (Hyland, 2026; Z. Zhang et al., 2025) Student perspectives point the same way. Learners appreciate AI feedback for revision support, yet it does not replace the depth, interaction and rhetorical sensitivity of teacher feedback (Crosthwaite & Sun, 2025; Hyland, 2026). Methodological concerns also haunt the evidence base. Critical syntheses indicate that most of the current literature is observational and that intervention research is still limited. Moreover, some comparison studies do not control the type and amount of feedback, which makes it difficult to draw causal conclusions (Li, 2025; Mekheimer, 2025). This mixed landscape strengthens the case for bibliometric inquiry, as the field is growing rapidly while still negotiating what counts as robust evidence and meaningful feedback quality.

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

Another reason to map this rise bibliometrically is that GenAI introduces variables that were less central in earlier AI feedback research. The quality of feedback depends heavily on how prompt instructions, criteria and examples are formulated , making prompting a methodological issue in its own right. Prompt engineering is characterised in terms of input, task and output dimensions in GenAI and L2 writing reviews. They recommend that future studies report prompts routinely, as prompt design affects basically all aspects of generated feedback (Crosthwaite & Sun, 2025; Li, 2025; C. Yang et al., 2025). Empirical evidence indicates that prompting strategy is important. The highest accuracy was achieved with few-shot prompting and the most elaborate feedback was obtained with chain-of-thought prompting, especially in terms of grammatical complexity (Barrot & Bui, 2026). The model version is important too. The results indicated that the model version had more influence than the language of the prompt in the accuracy and comprehensiveness of corrective feedback in L2 Chinese writing (C. Yang & Chen, 2025). The efficacy of learner engagement with GenAI feedback is partly contingent on language proficiency, technological competence, and metacognitive regulation. GenAI literacy has also been conceptualised to include knowledge of basic operations, effective use, output evaluation and ethics (Li, 2025; D. Yan & Zhang, 2024). These issues are also situated within wider bibliometric trends, suggesting that AI in language education research is interdisciplinary and increasingly organised around thematic clusters linking pedagogy, learner outcomes, emotional engagement and technological innovation (Rahman et al., 2024; C. Yang et al., 2025). They also explain why a bibliometric study of GenAI in L2 writing feedback should not only count the number of papers but also include the influence of concepts, tools and methodological preferences on the shaping of the field.

Given the rapid expansion and unsettled nature of the field, an extended bibliometric analysis of GenAI in L2 writing feedback is needed. In broader AI bibliometrics, scholars describe the field as nascent but rapidly growing. They report an increasing publication output, influential country clusters led by China, the United States and the United Kingdom, and a continuing convergence of education and AI research (Haristiani et al., 2025; Huiling et al., 2024; C.-W. Yang et al., 2025; X. Zhang & Umeanowai, 2024). The same studies show that academic integrity, authenticity, bias, privacy, infrastructure, teacher preparedness and inadequate regulatory responses remain unresolved concerns (Haristiani et al., 2025; Huiling et al., 2024). Reviews of GenAI assisted L2 writing reveal their own persistent challenges, such as learner over-reliance, inconsistent feedback, misinformation, limited work on languages other than English, and insufficient attention to authentic process data (Crosthwaite & Sun, 2025; C.-W. Yang et al., 2025). Bibliometric analysis can thus shed light on who produces this research, which journals and sources support it, which key words and citation networks characterise it, and where the most critical gaps are. Mapping of such is essential to understand the visibility of GenAI in L2 writing feedback, including its intellectual structure, methodological direction and pedagogical implications.

Research Questions

RQ1: What is the trend of scholarly publications on GenAI in L2 writing feedback during 2023 to August 2026?
RQ2: What are the most cited publications in research on GenAI in L2 writing feedback?
RQ3: Which countries are the top contributors to research on GenAI in L2 writing feedback in terms of publication output and citation performance?

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

RQ4: Based on keyword co-occurrence analysis, what are the dominant and emerging research themes in GenAI in L2 writing feedback?
RQ5: What are the patterns of international research collaboration in GenAI in L2 writing feedback, based on country-level co-authorship networks?

Methodology

Bibliometric analysis is the systematic collection, organization and analysis of bibliographic data from scholarly publications (Alves et al., 2021; Assyakur & Rosa, 2022; Verbeek et al., 2002). In addition to descriptive indicators such as publication venues, publication times and prominent authors (Y. C. J. Wu & Wu, 2017), bibliometrics includes more advanced analytical methods such as document co-citation analysis. The process of literature review is rigorous, iterative and systematic, including careful keyword selection, comprehensive database searches and detailed analytical assessment. This systematic approach helps to build a robust bibliography and helps to ensure reliable findings (Fahimnia et al., 2015). The present study therefore focused on high impact publications as these publications provide a great deal of insight into the theoretical frameworks shaping the research field. The primary database used for data retrieval was Scopus, a reliable and consistent source of data (Al-Khoury et al., 2022; di Stefano et al., 2010; Khiste & Paithankar, 2017). Only peer-reviewed journal articles were included, and books and lecture notes were deliberately excluded, so as to preserve scholarly quality (Gu et al., 2019). Elsevier's database Scopus is known for its extensive coverage. We extracted from it the relevant publications from 2023 to August 2026 for further analysis.

Data Search Strategy

Bibliometric data collection on the topic A Mapping of the Growth of Generative AI in L2 Writing The feedback used an advanced search strategy in the Scopus database ensuring a systematic coverage and relevance of the retrieved publications. The search was conducted on 8 August 2023, limiting the period of publication to the years 2023–August 2023 to include the recent emergence and rapid development of research in the selected domain. The search strategy was based on the following string. TITLE-ABS-KEY ("generative AI" OR "generative artificial intelligence" OR "ChatGPT") AND (writing OR "academic writing" OR "L2 writing") AND (feedback OR assessment) The search was restricted to publications in the English language and to the Social Sciences subject area, which ensures consistency in discipline and language. No restrictions were imposed on the source or the document type. The TITLE-ABS-KEY field was used to retrieve records with the specified terms appearing either in the titles, abstracts or author keywords. The predefined search parameters yielded 2,991 records which formed the preliminary dataset to be subjected to screening and bibliometric analysis.

The identified records were then systematically cleaned and screened for relevance, thus resulting in a reliable bibliometric corpus. A total of 1,685 records were excluded because they were either duplicates or irrelevant to the scope of research. Duplicate records were removed so that the same publications were not counted multiple times. Records that were not relevant were excluded so that the final dataset was aligned with the focus of the investigation. After these exclusions, the final dataset for bibliometric analysis comprised 1,306 publications, i.e. about 43.7% of the initially identified records. The resulting corpus offers a solid basis to investigate the evolution and intellectual structure of the research field through publication trends, citation patterns, key authors and sources, collaboration networks and thematic

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

developments. The stepwise transition from data retrieval over data cleaning to the final inclusion also strengthens the transparency and reproducibility of the analysis.

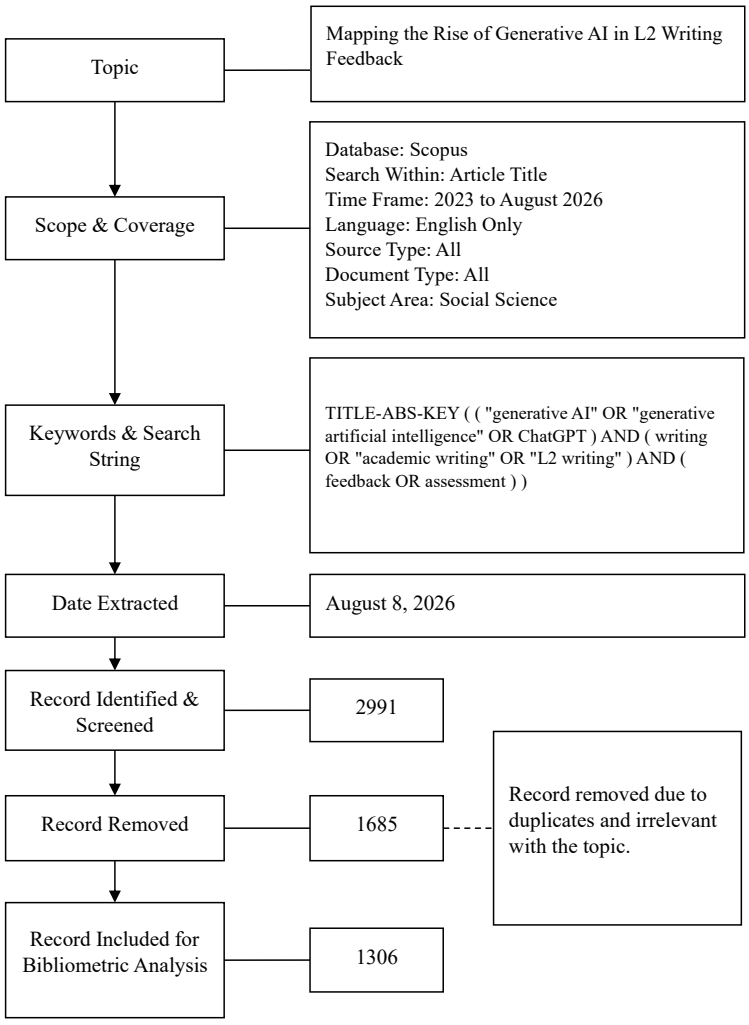


Figure 1: Workflow of the Bibliometric Data Collection and Screening Process

Commented [H1]: Please ensure all figures and tables are mentioned and referenced properly in body content.

Data Analysis

As shown in Figure 1, the bibliometric analysis was performed using Scopus Analyzer, OpenRefine and VOSviewer (version 1.6.21), which together help in the accurate and reliable treatment of the retrieved bibliographic records. First, descriptive bibliometric statistics including publication trends, citation performance, source distribution, document types and

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

country productivity were generated using Scopus Analyser. Such indicators provide a general overview of the development of the research domain. The bibliographic dataset was subsequently cleaned and standardised in OpenRefine before visualisation, which can improve data quality. Variations in author names, institutional affiliations, country names, source titles and author keywords were identified and merged appropriately to eliminate inconsistencies and duplicate entries. This pre-processing step is fundamental in bibliometric studies, because the inconsistencies in the metadata can influence the accuracy of the network construction and subsequent interpretation.

VOSviewer is a commonly utilised package for bibliometric analysis that was developed by Nees Jan van Eck and Ludo Waltman of Leiden University, Netherlands (van Eck & Waltman, 2010a, 2017). The software visualises and analyses scientific literature and incorporates capabilities in building network visualisations, clustering related entities and generating density maps. Its flexibility allows the analysis of different bibliometric relationships including co-authorship, co-citation, bibliographic coupling and keyword co-occurrence network, supporting the comprehensive analysis of the research landscapes. The interactive interface and the regular updates allow VOSviewer to handle large bibliometric datasets efficiently. It also has the capacity to generate bibliometric indicators, to create personalised visual outputs, to incorporate data from different sources, which increases its analytical potential.

The main strength of VOSviewer is its capacity to translate complex bibliometric data into comprehensible visual maps. The software performs well in network based analyses, clusters related items, identifies key word co-occurrence patterns, constructs collaboration networks and generates density visualisations that show areas of research concentration. Its interface enables researchers to more clearly see the intellectual, conceptual and collaborative structures of a field. The ongoing development guarantees that VOSviewer remains one of the most used platforms for bibliometric visualisation across scientific disciplines.

Scopus bibliographic records were exported as a Microsoft Excel file, covering publication year, article title, author names, source titles, citation counts and author keywords from 2023 to August 2026. The data were cleaned using OpenRefine and the cleaned dataset was analysed using Scopus Analyser and VOSviewer version 1.6.21. VOSviewer was utilised to construct keyword co-occurrence and country level co-authorship networks that enable visualisation of thematic relationships and international collaboration patterns. The software uses the Visualisation of Similarities (VOS) mapping technique to map bibliographic items into a low-dimensional space, where the distance between two items represents the degree of relatedness between them (van Eck & Waltman, 2010b). Conceptually similar to Multidimensional Scaling (MDS), VOSviewer uses the association strength normalisation method. The association strength between items i and j is calculated as follows (Van Eck & Waltman, 2007):

$$AS_{ij} = \frac{C_{ij}}{w_i w_j},$$

where C_ij represents the observed number of co-occurrences between items i and j, while ww_i and w_j denote the total occurrence frequencies of the respective items. The association strength is therefore proportional to the ratio between the observed number of co-occurrences and the expected number of co-occurrences under the assumption that the occurrences of the two items are statistically independent (Van Eck & Waltman, 2007). This normalization

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

approach enables VOSviewer to produce reliable, meaningful bibliometric visualizations that help identify influential research themes, collaboration patterns, and the intellectual structure of research on GenAI in L2 writing feedback.

Result and Discussion

RQ1: What Is The Trend Of Scholarly Publications On GenAI In L2 Writing Feedback During 2023 To August 2026?

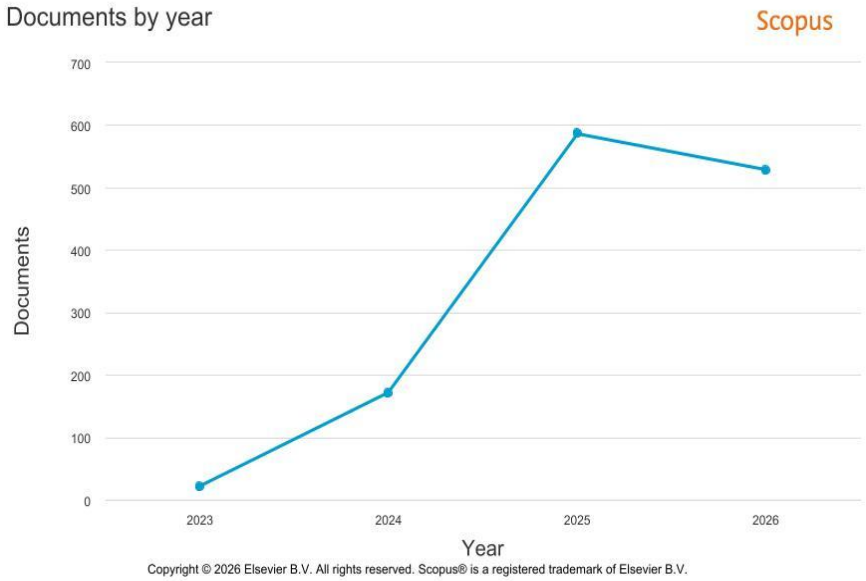


Figure 2: Annual Publication Trend in Research on Generative AI in L2 Writing Feedback

Table 1: Annual Publication Distribution on Generative AI in L2 Writing Feedback (2023–August 2026)

Year	Number of Publications	Percentage
2026	528	40.42
2025	586	44.86
2024	171	13.09
2023	21	1.61

The publication trend reveals an outstandingly rapid increase in scholarly research on GenAI in L2 writing feedback from 2023 to 2026. In 2023, there were only 21 publications (1.61%) which means that research in this area is in its emergent phase. The output then rose to 171 publications (13.09%) in 2024, more than an eightfold increase in a single year, and totalled at 586 publications (44.86%) in 2025. The rise in interest suggests an increasing academic

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

interest, driven by the increased accessibility of large language models, especially ChatGPT, which has opened up new opportunities for automated and personalised writing feedback. With the growing proliferation of GenAI tools, researchers were motivated to investigate their potential to aid in writing development, revision processes, feedback provision, and L2 learning. Concerns over the accuracy of feedback, academic integrity, learner dependency, and ethical use of AI in education have motivated more empirical and conceptual work. Thus, the big jump between 2024 and 2025 indicates the transition of GenAI-mediated L2 writing feedback from an emerging topic to a prominent area in technology enhanced language learning.

The dataset records 528 publications (40.42%) in 2026, a slight decrease from the 586 recorded in 2025, although the level of scholarly productivity remains remarkably high. This decrease should be treated with caution as the data were extracted in August 2026 and the publication records for this year are necessarily incomplete. Articles in early access or pending Scopus indexing might not be visible yet. The lower number for 2026, therefore, should not be taken as an indication of reduced research interest. Instead, the consistently high volume in the entire 2025 and the existing 2026 records suggest a period of sustained momentum in research on GenAI in L2 writing feedback. The research focus also seems to be widening beyond the initial question of whether GenAI is able to provide writing feedback, to more complex considerations of feedback effectiveness. That expansion includes learner engagement, feedback literacy, writing quality, human AI collaboration, ethical use and pedagogical integration. The ongoing high output in 2026 suggests that GenAI mediated L2 writing feedback has turned into a well-established and fast-growing research agenda with a growing space for theoretically-informed and empirically-grounded research on its role in L2 writing development.

RQ2: What Are The Most Cited Publications In Research on GenAI in L2 Writing Feedback?

Table 2: Top 10 Most Cited Publications on Generative AI in L2 Writing Feedback

No	Authors	Title	Year	Source title	Cited by
1	Yan L.; Sha L.; Zhao L.; Li Y.; Martinez-Maldonado R.; Chen G.; Li X.; Jin Y.; Gašević D. (L. Yan et al., 2024)	Practical and ethical challenges of large language models in education: A systematic scoping review	2024	British Journal of Educational Technology	727
2	Qadir J. (Qadir, 2023)	Engineering Education in the Era of ChatGPT: Promise and Pitfalls of Generative AI for Education	2023	IEEE Global Engineering Education Conference, EDUCON	674

3	Su J.; Yang W. (Su & Yang, 2023)	Unlocking the Power of ChatGPT: A Framework for Applying Generative AI in Education	2023	ECNU Review of Education	576
4	Rasul T.; Nair S.; Kalendra D.; Robin M.; Santini F.O.; Ladeira W.J.; Sun M.; Day I.; Rather R.A.; Heathcote L. (Rasul et al., 2023)	The role of ChatGPT in higher education: Benefits, challenges, and future research directions	2023	Journal of Applied Learning and Teaching	574
5	Escalante J.; Pack A.; Barrett A. (Escalante et al., 2023)	AI-generated feedback on writing: insights into efficacy and ENL student preference	2023	International Journal of Educational Technology in Higher Education	513
6	Steiss J.; Tate T.; Graham S.; Cruz J.; Hebert M.; Wang J.; Moon Y.; Tseng W.; Warschauer M.; Olson C.B. (Steiss et al., 2024)	Comparing the quality of human and ChatGPT feedback of students' writing	2024	Learning and Instruction	428
7	Fan Y.; Tang L.; Le H.; Shen K.; Tan S.; Zhao Y.; Shen Y.; Li X.; Gašević D. (Fan et al., 2025)	Beware of metacognitive laziness: Effects of generative artificial intelligence on learning motivation, processes, and performance	2025	British Journal of Educational Technology	395
8	Giannakos M.; Azevedo R.; Brusilovsky P.; Cukurova M.; Dimitriadis Y.; Hernandez-Leo D.; Järvelä S.; Mavrikis M.; Rienties B. (Giannakos et al., 2025)	The promise and challenges of generative AI in education	2025	Behaviour and Information Technology	385
9	Chang D.H.; Lin M.P.-C.; Hajian S.; Wang Q.Q. (Chang et al., 2023)	Educational Design Principles of Using AI Chatbot That Supports Self-Regulated Learning in Education: Goal Setting, Feedback, and Personalization	2023	Sustainability (Switzerland)	336
10	Ng D.T.K.; Tan C.W.; Leung J.K.L. (Ng et al., 2024)	Empowering student self-regulated learning and science education through ChatGPT: A pioneering pilot study	2024	British Journal of Educational Technology	294

Table 2 presents the 10 most influential publications on GenAI in L2 writing feedback by citation performance. The results indicate that the intellectual foundation of this research area was largely established by publications released during the early emergence of GenAI in education between 2023 and 2025. The most cited publication is Practical and Ethical Challenges of Large Language Models in Education, A Systematic Scoping Review by Yan et al. (2024), with 727 citations. Qadir (2023) follows with 674 citations and Su and Yang (2023)

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

with 576, while Rasul et al. (2023) had a similar total of 574 citations. Many early conceptual and review orientated studies have attracted clearly substantial scholarly attention. Their high citation performance has been attributed to their comprehensive review on the educational potential, ethical considerations, implementation challenges, and future directions of GenAI and large language models. Instead of being set in a particular educational context, these studies laid general theoretical frameworks that were cited widely throughout educational technology, language education, learning sciences and higher education research. These were seminal references that informed subsequent studies on AI supported learning, including studies on L2 writing feedback.

The citation pattern also reflects a gradual movement from general conceptual discussion to empirical studies of GenAI use in writing instruction and feedback. Escalante et al. (2023), received 513 citations for their study of AI generated writing feedback and learner preferences. Steiss et al. (2024) accumulated 428 in their direct comparison of human and ChatGPT generated writing feedback. The visibility of these studies shows a growing scholarly interest in assessing the effectiveness, quality and educational value of AI assisted feedback in real learning environments. Despite their recent publication, publications from 2025, such as Fan et al. (2025) (395 citations) and Giannakos et al. (2025) (385 citations), have already obtained a significant citation impact, indicating an exceptionally rapid rate of knowledge diffusion. Their emphasis on learning motivation, metacognition, self-regulated learning and human AI interaction is an example of the broadening of the research scope from technological capability to pedagogical effectiveness and responsible implementation. Thus, the citation analysis shows that research on GenAI in L2 writing feedback has moved from building conceptual and ethical foundations to providing empirical evidence to inform instructional design, feedback practices, and learner support.

RQ3: Which Countries Are The Top Contributors To Research on GenAI in L2 Writing Feedback In Terms Of Publication Output And Citation Performance?

The country distribution of publications (see Figure 3) reveals a clear concentration of research activity in a few major research producing countries. The United States is ranked first with 272 publications, followed by China with 261, which shows that the two countries are the main contributors to research on GenAI in L2 writing feedback. The difference of 11 publications is small and suggests similar research productivity. Their prominence is a reflection of the sizeable research capacity, large higher education systems and strong institutional investment in AI and educational technology. The United Kingdom ranked third with 110 publications followed by Australia with 106 and Hong Kong with 84. The large difference between the first two countries and the other contributors indicates that the production of research is not evenly spread across the world. Instead, it is concentrated in established academic systems with strong capabilities in educational technology, language education and AI research. The concentration parallels the rapid growth in GenAI research following the widespread release of ChatGPT and other large language models, which led universities and researchers to examine their implications for teaching, learning and writing support.

The growing internationalisation of the field is reflected in the other countries in the top 10, although their volume of publications is still significantly lower than that of the leading contributors. India occupied the sixth place with 53 publications, followed by Taiwan (48), Germany (46) and Spain (39) and Canada (34). The presence of countries from Asia, Europe, North America and Oceania indicates that GenAI in L2 writing feedback is being developed as

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

an internationally relevant research agenda rather than a localised one. However, the large publication gap between the leading countries and the lower ranked countries indicates that research capacity and institutional engagement are still uneven. The strong representation from China, Hong Kong, India and Taiwan highlights the particularly active contribution from Asian research communities, which may reflect increasing investment in AI enabled education and the importance of English language learning within higher education. Thus, the distribution describes a field with a small number of highly productive hubs and a larger group of emerging contributors. Future development might be more cross-national collaboration and more contribution from currently under-represented research contexts.

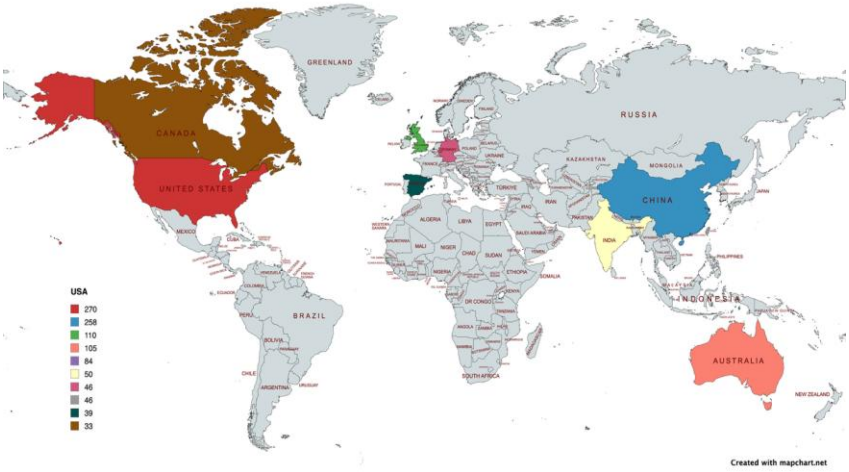


Figure 3: Global Publication Distribution by Country

RQ4: Based On Keyword Co-Occurrence Analysis, What Are The Dominant And Emerging Research Themes In GenAI in L2 Writing Feedback?

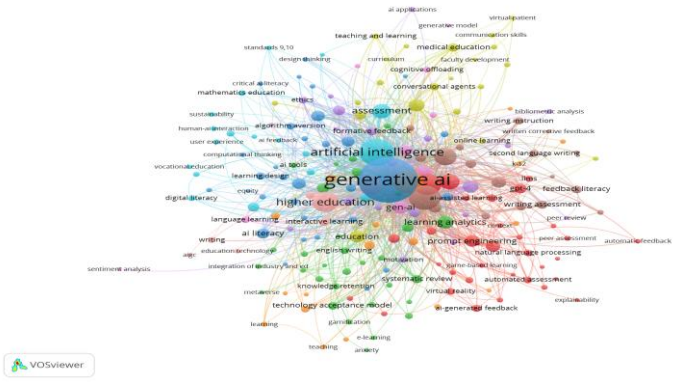


Figure 4: Network Visualization Map Of Keywords' Co-Occurrence

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

As Figure 4 indicates, the research on generative AI in education is characterised by broad technological and pedagogical themes. The most prominent concepts in the network are generative AI (576, TLS = 1554), artificial intelligence (205, TLS = 659), ChatGPT (164, TLS = 559), generative artificial intelligence (149, TLS = 376), and large language models (125, TLS = 401). There is also a strong presence of a second tier of terms. It contains higher education (119, TLS = 418), educational technology (88, TLS = 303), feedback (82, TLS = 276), personalised learning (67, TLS = 215), assessment (61, TLS = 195), learning analytics (48, TLS = 151), self-regulated learning (42, TLS = 143), prompt engineering (38, TLS = 123), automated writing evaluation (35, TLS = 111), intelligent tutoring systems (33, TLS = 104), adaptive learning (30, TLS = 110), human-AI collaboration (30, TLS = 82), AI literacy (28, TLS = 99) and student engagement (27, TLS = 96). Current research therefore extends beyond the development of technology to pedagogical innovation, assessment practices, learner support and responsible AI integration. Writing specific keywords is less frequent than the dominant GenAI terms. Academic writing, writing feedback, L2 writing, writing assessment, feedback literacy, EFL writing, generative AI feedback, AI-generated feedback and second language writing nevertheless validate the emergence of a distinct research stream around AI mediated writing instruction. These writing related keywords are also found with concepts such as student engagement, self-regulated learning and human-AI collaboration. There seems to be a shift in scholarly focus from the capabilities of generative AI to how learners engage with AI generated feedback, and to how such technologies can be effectively integrated to enhance L2 writing development.

Table 3: Most Frequently Occurring Author Keywords and Total Link Strength in Research on Generative AI in L2 Writing Feedback (2023-August 2026)

Keyword	Occurrences	Total strength
generative ai	576	1554
artificial intelligence	205	659
chatgpt	164	559
generative artificial intelligence	149	376
large language models	125	401
higher education	119	418
educational technology	88	303
feedback	82	276
personalized learning	67	215
assessment	61	195
learning analytics	48	151
ai	44	161
chatbot	44	170
gen-ai	44	136
self-regulated learning	42	143
education	40	126
prompt engineering	38	123
programming education	37	110
automated writing evaluation	35	111

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

intelligent tutoring systems	33	104
generative ai in education	31	82
adaptive learning	30	110
human-ai collaboration	30	82
ai literacy	28	99
student engagement	27	96

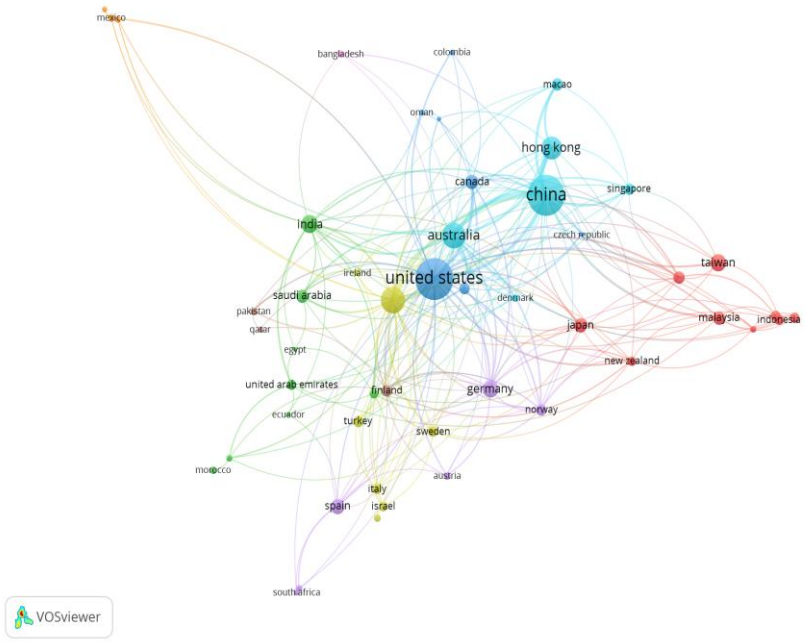


Figure 5: Country-Level Co-authorship Network in Generative AI Research

Figure 5 shows the country level co-authorship network generated in VOSviewer and displays a geographically diverse but uneven pattern of international research collaboration. The US is ranked first in terms of publication output with 272 documents and 4,414 citations. China is close behind with 261 documents and the highest Total Link Strength (TLS = 127) against 122 for the United States. While the US has produced a somewhat greater number of publications and a considerably higher citation impact, China shows a particularly strong international collaborative connectivity. The United Kingdom is third with 110 documents, 1,127 citations and a TLS of 99. Australia stands out for its relatively high citation impact with 2,881 citations from 106 documents. Hong Kong also shows a significant impact with 84 documents and 2,298 citations, which indicates that even smaller volumes of publications can still generate high citation visibility. The prominence of the United States, China, the United Kingdom, Australia

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

and Hong Kong is attributable to their well-developed research infrastructure, robust higher education systems, significant investment in educational technology and early involvement in GenAI research. These countries are the primary nodes of the international research network, implying that the field has been led mostly by well-established research ecosystems with high potential for cross-national collaboration.

The other countries have a broader but less intensive involvement. Research on GenAI and L2 writing feedback is increasingly international, but collaboration is still concentrated in a few major hubs. India is ranked sixth with 53 documents and 843 citations followed by Taiwan, Germany, Spain, Canada and Japan with widely varying TLS values. Malaysia accounts for 31 documents, 135 citations and a TLS of 19, ranking it as an emerging contributor but still far behind the dominant countries in terms of volume of publication and impact of citations. The moderate collaboration strength of some Asian countries such as Malaysia, Indonesia, Thailand and the Philippines might be a reflection of the relatively recent establishment of GenAI research infrastructures. Highly connected international research networks continue to be concentrated in North America, Europe, East Asia and Australia. However, participation across Asia, Europe, the Middle East, Africa and Latin America suggests that GenAI in education has become a globally distributed research agenda rather than a geographically confined field. Countries with relatively few publications have disproportionately high citation counts. For instance, Finland received 677 citations from 21 documents and Brazil 588 citations from 7. Thus, research impact is not only determined by publication volume. The co-authorship pattern reveals a core-periphery structure, with a small group of countries that are productive and internationally connected anchoring the field, and a growing group of emerging contributors extending the geographic reach.

RQ5: What Are The Patterns Of International Research Collaboration in GenAI in L2 Writing Feedback, Based On Country-Level Co-Authorship Networks?

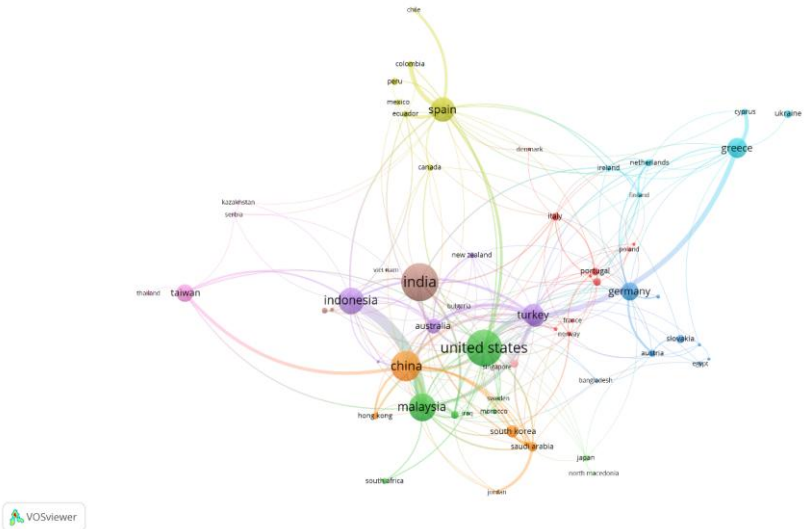


Figure 6: International Collaboration Network Based on Country Co-authorship

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

Figure 6 shows country-level co-authorship network of L2 writing feedback research on generative AI (GenAI). The network shows that the field has been built through extensive international collaboration among countries in Asia, Europe, North America and Oceania. Larger size nodes indicate countries with higher publication output while thicker links indicate stronger collaborative relationship. The strong ties between the major nodes suggest that knowledge production in this field is increasingly supported by cross-border research partnerships rather than isolated national efforts.

China, the United States and the United Kingdom are the main contributors in the collaboration network. China has the highest total link strength (TLS = 127), which means it is in a very central position and has the strongest collaborative ties with other countries. The United States produced the largest number of publications (272), but China produced a comparable number of publications (261) and had a higher TLS, suggesting that Chinese researchers are engaged in broader and more intensive international collaborations. The United Kingdom also shows strong collaborative influence, reflecting its continuing role as an important international research partner in educational technology and language education.

The network comprises several countries that are important regional connectors. Countries such as Australia, Malaysia, Hong Kong, India, Germany, Spain, Greece and Turkey have relatively large nodes and multiple collaborative links, suggesting their active participation in international research collaborations. Germany, Greece, Spain and Turkey are important collaborative hubs in Europe. Malaysia and Hong Kong seem to be very much tied up with China and other Asian countries. India's role as a bridge between Asian and European collaborators is indicative of its increasing role in facilitating international knowledge exchange. The fact that these clusters are linked together suggests the evolution of collaboration through regional partnerships, while at the same time being embedded in a wider global research network.

In sum, the collaboration network indicates a high level of internationalisation of research on GenAI in L2 writing feedback. The close links among the top countries in research output suggest that progress in this field is becoming more and more a matter of international cooperation, interdisciplinary knowledge and the pooling of research resources. Such collaborative relationships are likely to accelerate methodological innovation, facilitate dissemination of best practices, and support the development of AI-mediated writing feedback across various educational and linguistic contexts.

Conclusion

This present study mapped the evolution of GenAI research in L2 writing feedback in terms of publication trends, citation impact, country contributions, research themes, and international collaboration. A bibliometric approach was used to provide a systematic overview of the intellectual structure and evolution of this rapidly emerging field. Besides documenting publication patterns, the analysis contributes to the literature by identifying the conceptual foundations, influential publications, thematic development and collaborative networks that have shaped the research on GenAI assisted L2 writing feedback. Such insight provides a benchmark for understanding the field's evolution after widespread use of Gen AI technologies in education.

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

The results show a steep increase in scholarly publications from 2023 to August 2026. This implies that research on GenAI in L2 writing feedback is rapidly emerging from a nascent topic to an established area in educational technology and L2 education. Citation analysis indicates that the field's intellectual base is largely built on early conceptual and review based studies exploring the educational potential, ethical considerations and implementation challenges of ChatGPT and large language models. Later, empirical studies proliferated, assessing AI-generated writing feedback, learner preferences, writing quality, motivation and self-regulated learning. From the geographical analysis, the United States and China are the top contributors in publication output. The co-authorship network indicates the importance of international collaboration in the development of knowledge production and the global sharing of expertise in this area.

This further supports the account of conceptual evolution in the keyword co-occurrence analysis. The most important intellectual foundation is highly interconnected keywords including GenAI, AI, ChatGPT, large language models, higher education and educational technology. The growing use of terms such as L2 writing, writing feedback, writing assessment, feedback literacy, English as a Foreign Language (EFL) writing, and AI generated feedback, suggests a slow move toward more specialised study of language learning and writing development. Themes of learner engagement, metacognition, self-regulated learning, human AI collaboration and AI assisted writing suggest that current research has moved beyond technological capability. It now examines how learners and educators engage with AI generated feedback within authentic instructional contexts.

From a practical perspective, the results suggest that successful implementation of GenAI in L2 writing feedback depends on the advances in AI capability and on pedagogically informed practices that encourage meaningful learner engagement, effective feedback use, feedback literacy and responsible instructional integration. The bibliometric evidence points to a need to focus more on supporting learners to critically interpret AI generated feedback in future educational practice. Teachers also need help integrating GenAI as a supplementary instructional tool, not a replacement for human expertise. These findings also point to ways that research can be expanded to include understudied educational contexts, diverse learners, and multilingual learning environments, where AI supported writing instruction is constantly changing.

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

Acknowledgements: The authors would like to express their sincere gratitude to Kulliyyah of Education, International Islamic University Malaysia (IIUM) and the Faculty of Education, Social Sciences and Humanities, Universiti Poly-Tech Malaysia (UPTM) for providing the necessary resources and support throughout the course of this research. Special appreciation is extended to colleagues and peers who contributed valuable insights and constructive feedback, which greatly enhanced the quality of this paper.

Funding Statement: This research was self-funded and conducted in fulfilment of the requirements for the Doctor of Philosophy degree at the International Islamic University Malaysia

Conflict of Interest Statement: The authors declare that they have no conflicts of interest to report regarding the present study.

Ethics Statement: This study did not involve any human participants, animals, or sensitive data requiring ethical approval. The authors confirm that the research was conducted in accordance with accepted academic integrity and ethical publishing standards.

Author Contribution Statement: All authors contributed significantly to the development of this manuscript. Ezzan Azizan was responsible for the conceptualization of the study, methodology, data collection, data curation, formal analysis, visualization, interpretation of the findings, and preparation of the original manuscript. Ainol Madziah Zubairi contributed through academic supervision, critical review, and editorial feedback. Tunku Badariah Tunku Ahmad provided academic supervision and critically reviewed the manuscript. All authors read and approved the final version of the manuscript prior to submission.

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 65 (December 2026) PP. 59-79

References

Al-Khoury, A., Hussein, S. A., Abdulwhab, M., Aljuboori, Z. M., Haddad, H., Ali, M. A., Abed, I. A., & Flayyih, H. H. (2022). Intellectual Capital History and Trends: A Bibliometric Analysis Using Scopus Database. *Sustainability (Switzerland)*, *14*(18). https://doi.org/10.3390/su141811615

Alves, J. L., Borges, I. B., & De Nadae, J. (2021). Sustainability in complex projects of civil construction: Bibliometric and bibliographic review. *Gestao e Producao*, *28*(4). https://doi.org/10.1590/1806-9649-2020v28e5389

Appio, F. P., Cesaroni, F., & Di Minin, A. (2014). Visualizing the structure and bridges of the intellectual property management and strategy literature: a document co-citation analysis. Scientometrics, 101(1), 623–661. https://doi.org/10.1007/s11192-014-1329-0

Assyakur, D. S., & Rosa, E. M. (2022). Spiritual Leadership in Healthcare: A Bibliometric Analysis. *Jurnal Aisyah : Jurnal Ilmu Kesehatan*, *7*(2). https://doi.org/10.30604/jika.v7i2.914

Barrot, J., & Bui, H. (2026). Generative Artificial Intelligence for Automated Qualitative Feedback: A Cross-Comparison of Prompting Strategies. *RELC Journal*, *57*, 107–132. https://doi.org/10.1177/00336882251412561

Crosthwaite, P., & Sun, S. (2025). Generative AI and L2 Written Feedback Studies: A Scoping Review. *RELC Journal*, *57*, 207–219. https://doi.org/10.1177/00336882251386530

di Stefano, G., Peteraf, M., & Veronay, G. (2010). Dynamic capabilities deconstructed: A bibliographic investigation into the origins, development, and future directions of the research domain. *Industrial and Corporate Change*, *19*(4), 1187–1204. https://doi.org/10.1093/icc/dtq027

Escalante, J., Pack, A., & Barrett, A. (2023). AI-generated feedback on writing: insights into efficacy and ENL student preference. *International Journal of Educational Technology in Higher Education*, *20*(1). https://doi.org/10.1186/s41239-023-00425-2

Giannakos, M., Azevedo, R., Brusilovsky, P., Cukurova, M., Dimitriadis, Y., Hernandez-Leo, D., … Rienties, B. (2025). The promise and challenges of generative AI in education. Behaviour & Information Technology, 44(11), 2518–2544. https://doi.org/10.1080/0144929X.2024.2394886

Fahimnia, B., Sarkis, J., & Davarzani, H. (2015). Green supply chain management: A review and bibliometric analysis. In *International Journal of Production Economics* (Vol. 162, pp. 101–114). https://doi.org/10.1016/j.ijpe.2015.01.003

Fan, Y., Tang, L., Le, H., Shen, K., Tan, S., Zhao, Y., Shen, Y., Li, X., & Gašević, D. (2025). Beware of metacognitive laziness: Effects of generative artificial intelligence on learning motivation, processes, and performance. *British Journal of Educational Technology*, *56*(2), 489–530. https://doi.org/10.1111/bjet.13544

Gu, D., Li, T., Wang, X., Yang, X., & Yu, Z. (2019). Visualizing the intellectual structure and evolution of electronic health and telemedicine research. *International Journal of Medical Informatics*, *130*. https://doi.org/10.1016/j.ijmedinf.2019.08.007

Haristiani, N., Husaeni, D. N. Al, Herniwati, H., Sugihartono, S., & Abduh, A. (2025). Exploring trends, impact, and applications of artificial intelligence (AI) in language learning: From concept, definition, examples, to a comprehensive bibliometric analysis. *SciEnggJ*. https://doi.org/10.54645/202518supziv-58

Huiling, Ismail, L., & Han, W. (2024). A bibliometric analysis of artificial intelligence in language teaching and learning (1990–2023): evolution, trends and future directions. *Education and Information Technologies*, *29*, 25211–25235. https://doi.org/10.1007/s10639-024-12848-z

Hyland, K. (2026). AI Feedback to L2 Writers. *International Journal of TESOL Studies*. https://doi.org/10.58304/ijts.260420

Jaleniauskiene, E., Lisaitė, D., & Daniusevičiūtė-Brazaitė, L. (2023). Artificial Intelligence in Language Education: A Bibliometric Analysis. *Sustainable Multilingualism*, *23*, 159–194. https://doi.org/10.2478/sm-2023-0017

Kartal, G., & Yeşilyurt, Y. (2024). A bibliometric analysis of artificial intelligence in L2 teaching and applied linguistics between 1995 and 2022. *ReCALL*. https://doi.org/10.1017/s0958344024000077

Khiste, G. P., & Paithankar, R. R. (2017). Analysis of Bibliometric term in Scopus. *International Research Journal*, *01*(32), 78–83.

Li, S. (2025). Generative AI and Second Language Writing. *Digital Studies in Language and Literature*, *2*, 122–152. https://doi.org/10.1515/dsll-2025-0007

Liang, J., Hwang, G.-J., Chen, M.-R. A., & Darmawansah, D. (2021). Roles and research foci of artificial intelligence in language education: an integrated bibliographic analysis and systematic review approach. *Interactive Learning Environments*, *31*, 4270–4296. https://doi.org/10.1080/10494820.2021.1958348

Lubis, A. H., Samsudin, D., Triarisanti, R., Jerusalem, M. I., & Hwang, Y. (2024). A bibliometric mapping analysis of publications on the utilization of artificial intelligence technology in language learning. *Journal of Advanced Research in Applied Sciences and Engineering Technology*. https://doi.org/10.37934/araset.38.1.156176

Mekheimer, M. (2025). Generative AI-assisted feedback and EFL writing: a study on proficiency, revision frequency and writing quality. *Discover Education*, *4*. https://doi.org/10.1007/s44217-025-00602-7

Qadir, J. (2023). Engineering Education in the Era of ChatGPT: Promise and Pitfalls of Generative AI for Education. *IEEE Global Engineering Education Conference, EDUCON*, *2023-May*. https://doi.org/10.1109/EDUCON54358.2023.10125121

Rahman, A., Raj, A., Tomy, P., & Hameed, M. (2024). A comprehensive bibliometric and content analysis of artificial intelligence in language learning: tracing between the years 2017 and 2023. *Artificial Intelligence Review*, *57*. https://doi.org/10.1007/s10462-023-10643-9

Rasul, T., Nair, S., Kalendra, D., Robin, M., Santini, F. O., Ladeira, W. J., Sun, M., Day, I., Rather, R. A., & Heathcote, L. (2023). The role of ChatGPT in higher education: Benefits, challenges, and future research directions. *Journal of Applied Learning and Teaching*, *6*(1), 41–56. https://doi.org/10.37074/jalt.2023.6.1.29

Steiss, J., Tate, T., Graham, S., Cruz, J., Hebert, M., Wang, J., Moon, Y., Tseng, W., Warschauer, M., & Olson, C. B. (2024). Comparing the quality of human and ChatGPT feedback of students' writing. *Learning and Instruction*, *91*. https://doi.org/10.1016/j.learninstruc.2024.101894

Su, J., & Yang, W. (2023). Unlocking the Power of ChatGPT: A Framework for Applying Generative AI in Education. *ECNU Review of Education*, *6*(3), 355–366. https://doi.org/10.1177/20965311231168423

Tabari, M. A., Kushki, A., & Wang, Y. (2025). Comparing the effects of teacher- and AI-mediated corrective feedback on accuracy, complexity, and quality in L2 written narratives. *Computer Assisted Language Learning*. https://doi.org/10.1080/09588221.2025.2561608

Van Eck, N. J., & Waltman, L. (2007). Bibliometric mapping of the computational intelligence field. International Journal of Uncertainty, Fuzziness and Knowldege-Based Systems, 15(5), 625–645. https://doi.org/10.1142/S0218488507004911

Van Eck, N. J., & Waltman, L. (2010a). Software survey: VOSviewer, a computer program for bibliometric mapping. Scientometrics, 84(2), 523–538. https://doi.org/10.1007/s11192-009-0146-3

Van Eck, N. J., & Waltman, L. (2010b). Software survey: VOSviewer, a computer program for bibliometric mapping. Scientometrics, 84(2), 523–538. https://doi.org/10.1007/s11192-009-0146-3

Van Eck, N. J., & Waltman, L. (2017). Citation-based clustering of publications using CitNetExplorer and VOSviewer. Scientometrics, 111(2), 1053–1070. https://doi.org/10.1007/s11192-017-2300-7

Verbeek, A., Debackere, K., Luwel, M., & Zimmermann, E. (2002). Measuring progress and evolution in science and technology - I: The multiple uses of bibliometric indicators. *International Journal of Management Reviews*, *4*(2), 179–211. https://doi.org/10.1111/1468-2370.00083

Wu, T., & Yu, Z. (2024). Bibliometric and Systematic Analysis of Artificial Intelligence Chatbots' Use for Language Education. *Journal of University Teaching and Learning Practice*. https://doi.org/10.53761/6jmnst54

Wu, Y. C. J., & Wu, T. (2017). A decade of entrepreneurship education in the Asia Pacific for future directions in theory and practice. In *Management Decision* (Vol. 55, Number 7, pp. 1333–1350). https://doi.org/10.1108/MD-05-2017-0518

Yan, D., & Zhang, S. (2024). L2 writer engagement with automated written corrective feedback provided by ChatGPT: A mixed-method multiple case study. *Humanities and Social Sciences Communications*, *11*. https://doi.org/10.1057/s41599-024-03543-y

Yan, L., Sha, L., Zhao, L., Li, Y., Martinez-Maldonado, R., Chen, G., Li, X., Jin, Y., & Gašević, D. (2024). Practical and ethical challenges of large language models in education: A systematic scoping review. *British Journal of Educational Technology*, *55*(1), 90–112. https://doi.org/10.1111/bjet.13370

Yang, C., & Chen, H. H.-J. (2025). ChatGPT and L2 Chinese writing: evaluating the impact of model version and prompt language on automated corrective feedback. *Computer Assisted Language Learning*, *39*, 1119–1147. https://doi.org/10.1080/09588221.2025.2453205

Yang, C., Chen, J., Hou, S., Wider, W., & Yi, W. L. (2025). Charting the developmental landscape of artificial intelligence in language education using bibliometric methods. *Discover Artificial Intelligence*, *5*. https://doi.org/10.1007/s44163-025-00732-9

Yang, C.-W., Li, R., & Yang, L. (2025). Revisiting Trends in GenAI-Assisted Second Language Writing: Retrospect and Prospect. *Journal of Educational Computing Research*, *63*, 1819–1863. https://doi.org/10.1177/07356331251367309

Zhang, X., & Umeanowai, K. O. (2024). Exploring the transformative influence of artificial intelligence in EFL context: A comprehensive bibliometric analysis. *Education and Information Technologies*, *30*, 3183–3198. https://doi.org/10.1007/s10639-024-12937-z

Zhang, Z., Aubrey, S., Huang, X., & Chiu, T. (2025). The role of generative AI and hybrid feedback in improving L2 writing skills: a comparative study. *Innovation in Language Learning and Teaching*. https://doi.org/10.1080/17501229.2025.2503890