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From Feedback to Artificial Intelligence: A Bibliometric Mapping Analysis of the Thematic Evolution of EFL Writing Assessment Research Trends (2014–2024)

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Abstract. This study presents a comprehensive bibliometric analysis of research trends in English as a Foreign Language (EFL) writing assessment from 2014 to 2024. Using data exclusively sourced from the Scopus database, this review mapped the growth, intellectual structure, and thematic evolution of the field over the past decade. The analysis included 697 peer-reviewed articles and conference papers, following systematic screening and exclusion criteria. Advanced bibliometric tools such as Bibliometrix, VOSviewer, and Biblioshiny were employed for their complementary strengths: Bibliometrix for statistical analysis, VOSviewer for visualising network relationships (co-authorship, co-citation, keyword co-occurrence), and Biblioshiny for thematic and temporal analyses through an accessible interface. The findings revealed a marked increase in research output, particularly after 2018, with Asia – especially China, Indonesia, and Iran – emerging as primary centres of productivity and collaboration. Core topics remained focused on formative assessment, feedback, and writing performance, while new themes such as automated writing evaluation, artificial intelligence, and digital technology integration have rapidly gained prominence. The study highlights the dynamic interplay between enduring foundational issues and emerging directions, reflecting the field's adaptability to technological and pedagogical change. This bibliometric mapping provides critical insights for scholars, educators, and policymakers, supporting evidence-based innovation and guiding future research agendas in EFL writing assessment.

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1. Introduction

Writing assessment occupies a central role within the field of English as a Foreign Language (EFL) instruction, acting as both a diagnostic and developmental tool to enhance learners' writing competencies and to inform pedagogical decision making. Language assessment is an evolving process that is shaped by the specific context in which it occurs (Ketskumbonk & Sukying, 2024). Therefore, over the past decade, there has been a marked increase in scholarly attention devoted to the domain of EFL writing assessment, which is reflected in significant growth in publication output and in the diversification of research foci. This expansion can be attributed to the evolving complexity of writing assessment itself, including the emergence of new assessment paradigms, the integration of technological advancements, and the continuous re-evaluation of best practices within linguistically and culturally diverse EFL contexts.

Studies have highlighted that recent years have seen an enhanced emphasis on formative assessment and the use of technology in writing evaluation, which are pivotal for fostering students' academic success and communicative competence (Chen et al., 2023; Tian, 2024; Zou et al., 2021). As a result, the field has witnessed ongoing dialogue between theoretical advancements and classroom-based innovations, underscoring the importance of robust assessment practices.

The increasing significance of writing assessment is further evidenced by the rising number of peer-reviewed publications addressing various aspects of EFL writing evaluation, feedback mechanisms, and learner engagement. This maturation of research is corroborated by the proliferation of interdisciplinary collaborations among scholars from linguistics, education, psychology, and computer science (Mali & Salsbury, 2021; Takrouni & Assalahi, 2022; Zhang, 2024).

Moreover, the use of automated tools for feedback and assessment in EFL writing has highlighted a broader shift towards learner-centred and technology-supported assessment approaches, fostering not only literacy but also autonomy among learners (Armanda et al., 2022; Kiasi & Rezaie, 2021; Tayyebi et al., 2022). Recent literature emphasises not just the implementation of these methodologies but also the necessity for continuous bibliometric mapping to identify persistent research challenges and trends, highlighting the relevance of systematic reviews within this emergent research landscape (Gonzalez-Torres & Sarango, 2023; Omarkaly, 2021).

Despite the burgeoning body of literature on EFL writing assessment, there remains a lack of systematic and comprehensive mapping of the research landscape over an extended period. This gap is particularly salient given the rapid pace of innovation and the growing heterogeneity of research methodologies, theoretical frameworks, and assessment instruments employed in the field (Awla et al., 2023; Sohrabi et al., 2022). Consequently, stakeholders – including

researchers, educators, and policymakers – face challenges in accessing up-to-date insights regarding the trajectory, productivity, and intellectual structure of EFL writing assessment research. For instance, recent inquiries into the effectiveness of peer assessment and collaborative evaluation highlight the integral role these methodologies play in enhancing learner engagement and writing skills (Al-Rashidi et al., 2022; Kiasi & Rezaie, 2021). The absence of a synthesised overview constrains the development of informed practices and may impede the identification of both productive avenues and research gaps.

To address these challenges, the application of bibliometric mapping techniques offers a robust and evidence-based approach for synthesising large volumes of scholarly output. Bibliometric analysis provides a quantitative and visual representation of research trends, influential sources, leading authors, and evolving thematic clusters within a specified domain. This methodology enables the systematic examination of research output, citation patterns, collaboration networks, and keyword co-occurrences, thereby facilitating a holistic understanding of the intellectual and social structure underpinning EFL writing assessment (Fajri et al., 2024; Li & Chen, 2024). In doing so, bibliometric studies serve as a foundation for critical reflection and informed decision making within the research community.

A review of the literature reveals a growing consensus on the utility of bibliometric tools and science mapping in elucidating the dynamics of specialised research fields, highlighting the efficacy of Bibliometrix, an R-package designed for comprehensive science mapping analysis, as a means to aggregate, visualise, and interpret bibliographic data in a reproducible and systematic manner (Joseph et al., 2024). This tool has since been widely adopted for bibliometric reviews across a range of disciplines, offering valuable insights into publication growth, citation analysis, and thematic evolution (Calderón-Fajardo et al., 2024).

In a subsequent development, Aria et al. (2024) and Nurfadilah et al. (2025) expanded on the conceptual structure analysis enabled by metadata, emphasising the value of comparative science mapping for capturing the interplay between research themes and scholarly networks (Fauzi et al., 2025). These advancements underscore the capacity of bibliometric techniques to move beyond descriptive statistics toward the identification of research frontiers and the evolution of scholarly discourse.

The scientific literature also documents the advantages of using multiple software tools for data visualisation and network analysis (Madzík et al., 2023; Susetyo et al., 2024). For instance, VOSviewer is frequently cited for its user-friendly interface and its capacity to generate co-authorship, co-citation, and keyword co-occurrence networks (Beskaravainaya, 2024; Verlaque et al., 2025). These functionalities allow for the exploration of collaborative linkages, intellectual clusters, and the relative positioning of core research topics within a field. Biblioshiny, the web-based interface of Bibliometrix, further enhances analytic capabilities by integrating descriptive and inferential statistics, thematic mapping, and temporal trend analysis (Das, 2022).

Empirical applications of these tools in related domains have yielded important precedents for the present study. Nanda et al. (2025) conducted a bibliometric analysis on rainfall-runoff modelling techniques, demonstrating the power of science mapping in revealing the intellectual landscape and guiding future research directions (Melicherová et al., 2021). Bancong (2024) similarly used bibliometric approaches to examine the development and current state of thought experiments, providing a model for rigorous methodological transparency and reproducibility in bibliometric research (Pereira et al., 2025). Visser et al. (2021) offered a comparative evaluation of major bibliographic data sources, reinforcing the reliability and comprehensiveness of Scopus for bibliometric investigations (Solorzano et al., 2024). These studies collectively support the adoption of a multifaceted bibliometric approach to assess the trajectory and intellectual structure of EFL writing assessment research.

Recent bibliometric studies have underscored the significance of systematic mapping for advancing domain-specific knowledge. While the literature on EFL writing assessment is expanding, previous reviews have often focused narrowly on individual subthemes – such as feedback practices, technology-mediated assessment, or specific learner populations – without providing a comprehensive synthesis of the broader research landscape over time (Taufiqulloh et al., 2024; Wijaya, 2022; Yuza et al., 2024). Moreover, despite the effectiveness of automated writing evaluation, peer assessment, and self-regulatory strategies in EFL writing, there is limited evidence regarding how these topics have evolved in relation to one another and their distribution across different countries, sources, and scholarly networks (Kumalasari, 2023; Sun et al., 2024; Syamdianita & Hati, 2025).

An additional gap exists in the insufficient integration of advanced visualisation tools and analytical methods for tracking the thematic evolution and collaborative dynamics of EFL writing assessment research. Existing studies frequently rely on descriptive statistics or static summaries, which may obscure underlying patterns and interrelationships among research themes, key authors, and influential journals (Chhorn & Wang, 2025; Xiong, 2024; Zhang & Zhang, 2022). As a result, the field lacks a longitudinal, multi-dimensional mapping that can inform both retrospective and prospective analyses.

In response to the identified gaps, the present study aimed to conduct a comprehensive bibliometric analysis of trends in EFL writing assessment research, focusing on the decade spanning 2014 to 2024. The objectives of this study included: (1) examining the growth of research output; (2) identifying the most influential sources; (3) pinpointing the most prominent authors; (4) mapping the geographical distribution of research productivity; (5) analysing the most relevant keywords; and (6) characterising the current research landscape and its thematic evolution. By systematically mapping these dimensions, the study aimed to provide an integrative overview that advances both scholarly understanding and practical development within the field.

The novelty of this research lies in its holistic and data-driven approach, which uses advanced bibliometric tools (including Bibliometrix, VOSviewer, and

Biblioshiny) to offer a nuanced and dynamic perspective on the intellectual structure of EFL writing assessment research. This approach facilitates the identification of emergent trends, collaborative networks, and thematic shifts that may not be apparent through conventional literature reviews (Hedayati & Khoorsand, 2024; Zhang et al., 2022a). Furthermore, the emphasis on a decade-long window provides a longitudinal context for interpreting the field's evolution.

The scope of this study was defined by its focus on peer-reviewed research articles, conference papers, and reviews published in English and indexed in the Scopus database. By excluding non-peer-reviewed publications and concentrating on EFL writing assessment, the study ensured the relevance, reliability, and comparability of the analysed literature. Through this systematic and transparent approach, the research is poised to make a significant contribution to both the theory and practice of writing assessment in EFL contexts and provide a foundation for future inquiry and innovation.

2. Method

This study employed a bibliometric mapping approach to comprehensively analyse trends in EFL writing assessment research spanning the years 2014 to 2024. All bibliographic data used in this study were sourced exclusively from the Scopus database (<https://www.scopus.com>), which is recognised for its extensive and multidisciplinary coverage of peer-reviewed literature and conference proceedings (Visser et al., 2021). The scope of the search included several document types: articles, conference papers, book chapters, and reviews, ensuring the inclusion of a broad range of scholarly outputs related to EFL writing assessment. The search was further refined to include only documents published in the English language, thereby enhancing the consistency and comparability of the analysed literature.

The core dataset for this study was initially comprised of 1,015 documents retrieved from the Scopus database, using the Boolean search string 'EFL writing AND assessment OR evaluation' in titles, abstracts, and keywords. This search covered a broad range of document types, including articles, conference papers, book chapters, and reviews, published between 2014 and 2024. After applying specific inclusion and exclusion criteria, the dataset was refined. The inclusion criteria limited the documents to peer-reviewed articles and conference papers published in English. Exclusion criteria removed non-English documents, as well as book chapters and other non-article formats. This rigorous screening process resulted in a final dataset of 697 documents, which form a robust and focused sample of relevant research on EFL writing assessment over the past decade.

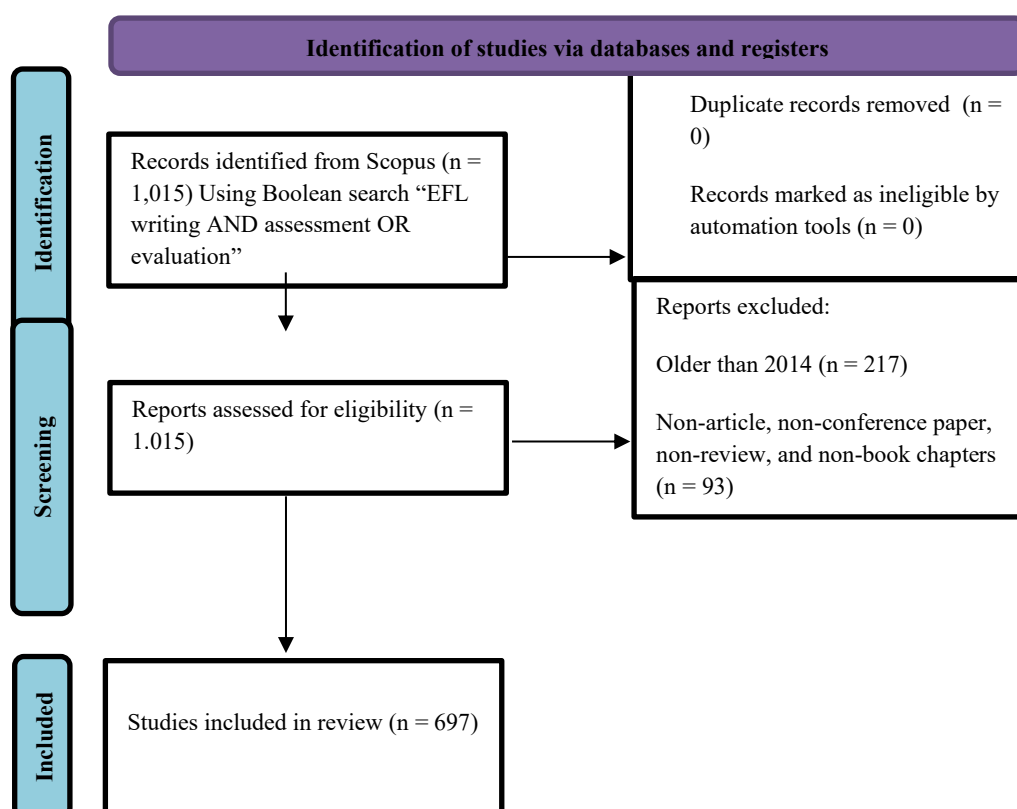


Figure 1: The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram detailing the screening and selection process of the literature

2.1 Sample Preparation

The preparation of bibliometric data for analysis began with the formulation of an effective search strategy. The search was conducted electronically on 22 June 2025, using the TITLE-ABS-KEY function to target occurrences of the term “EFL writing assessment or evaluation” within the titles, abstracts, and keywords of indexed publications (Bancong, 2024). This approach maximised retrieval relevance by capturing documents with a central thematic focus on EFL writing assessment, as recommended in established bibliometric methodology (Aria et al., 2024; Nanda et al., 2025). Following the search, raw bibliographic records were exported from Scopus in both comma-separated value and research information system file formats to ensure compatibility with various bibliometric and visualisation tools. These exported datasets included essential metadata such as publication year, document type, authorship, source title, affiliations, keywords, and citation counts.

To refine the sample, exclusion criteria were systematically applied. Only documents categorised as “article” or “conference paper” were retained ($n = 705$). Subsequently, the language filter was set to English, resulting in a total of 697 documents for further analysis. This stepwise screening and selection process is detailed in the PRISMA flow diagram (Figure 1), which outlines the systematic approach employed to ensure transparency and reproducibility in the literature selection process (Bancong, 2024).

2.2 Experimental Set-Up

The analytical workflow for this bibliometric study was structured to allow for comprehensive mapping and visualisation of the research landscape. The data analysis process commenced with data cleaning and normalisation using Microsoft Excel. Duplicates, incomplete records, and inconsistencies in author names, affiliations, and keywords were systematically identified and resolved to ensure data integrity. The primary software tools employed for bibliometric analysis and science mapping were VOSviewer (van Eck & Waltman, 2017) and Biblioshiny, a web-based application of the Bibliometrix R-package (Aria et al., 2024).

VOSviewer was used to generate co-authorship, co-citation, and keyword co-occurrence networks and to visualise country collaboration patterns and thematic clusters. Biblioshiny, in conjunction with the Bibliometrix R-tool, facilitated comprehensive descriptive and inferential analyses, including annual publication trends, citation analysis, source and author productivity, and thematic evolution (Aria et al., 2024).

The analyses conducted in this study encompassed several advanced bibliometric approaches to provide a comprehensive understanding of the research trends within the field of EFL writing assessment. A temporal analysis was performed to examine the patterns of publication and citation trends over the past decade, identifying significant periods of growth and evaluating the overall scholarly impact within the domain.

In addition, the most prolific journals, authors, institutions, and countries contributing to EFL writing assessment research were identified, offering insights into the key players shaping the field and their respective roles in advancing knowledge. To further elucidate the collaborative nature of the research landscape, visualisations of co-authorship, co-country, and co-institutional linkages were constructed, shedding light on the networks of collaboration that drive scholarly output in this area.

The thematic analysis, grounded in keyword co-occurrence and thematic mapping techniques, enabled the identification of core and emergent research topics, providing a detailed overview of the intellectual structure of the field. Finally, the evolution of these themes was systematically evaluated, revealing how core topics have evolved and how new research directions have emerged in response to technological advancements and pedagogical shifts.

These multifaceted analyses contribute to a nuanced understanding of the intellectual development of EFL writing assessment research and offer valuable insights for future scholarly inquiry. Standard bibliometric indicators such as publication frequency, total citations, and h-index values were calculated for journals, authors, and countries. Network visualisations were generated to depict relationships and trends within the data, using default parameters in VOSviewer for clustering and mapping (van Eck & Waltman, 2017).

2.3 Parameters

The main parameters measured in this study were defined by bibliometric standards. These parameters were selected based on their relevance and capacity to reveal the structure, dynamics, and intellectual development of the EFL writing assessment research domain (Nanda et al., 2025). These included:

- Annual scientific production: Number of publications per year, indicating the growth and research activity in EFL writing assessment
- Citation analysis: Total citations and average citations per document, reflecting the scholarly impact and dissemination of research outputs
- Source and author productivity: Quantified by the number of documents published and citation counts for each source title and author
- Keyword frequency and co-occurrence: Analysis of the most frequently used and co-occurring keywords to identify prevalent and emerging research themes
- Collaboration metrics: Analysis of single-country and multiple-country publications to assess the extent of international collaboration. (Visser et al., 2021)

2.4 Statistical Analysis

The quantitative data derived from the bibliometric mapping process were subjected to descriptive and inferential statistical analyses, following best practices in science mapping research (Ninkov et al., 2021). Descriptive statistics, such as publication counts, citation frequencies, and collaboration ratios, were computed using Microsoft Excel and R. Network analysis metrics, including node size (representing publication or citation counts) and link strength (indicating the frequency of collaboration or co-occurrence), were calculated using VOSviewer and Biblioshiny (Ninkov et al., 2021). For thematic analysis, the Louvain clustering algorithm implemented in VOSviewer was applied to identify significant thematic clusters and research trends. The evolution of research themes over time was mapped using the thematic evolution analysis in Biblioshiny.

This quantitative approach allowed for a rigorous assessment of publication and citation patterns, intellectual structure, and collaborative networks within the EFL writing assessment field, ensuring the validity and reliability of the findings (Liu, 2021). The study employed the PRISMA flow diagram to clearly outline the procedures followed during the study selection process. The PRISMA diagram was instrumental in providing a systematic and comprehensive overview of the screening process, from the initial database search, through the removal of duplicates and ineligible records, to the final selection of eligible studies. The diagram visually represents the stages of the review, highlighting the number of records screened, excluded, and included at each step. This detailed documentation ensures reproducibility and transparency in the methodology, allowing readers to trace the study's data inclusion process and verify the robustness of the final dataset.

3. Results

3.1 Yearly Trend of Publications and Citations

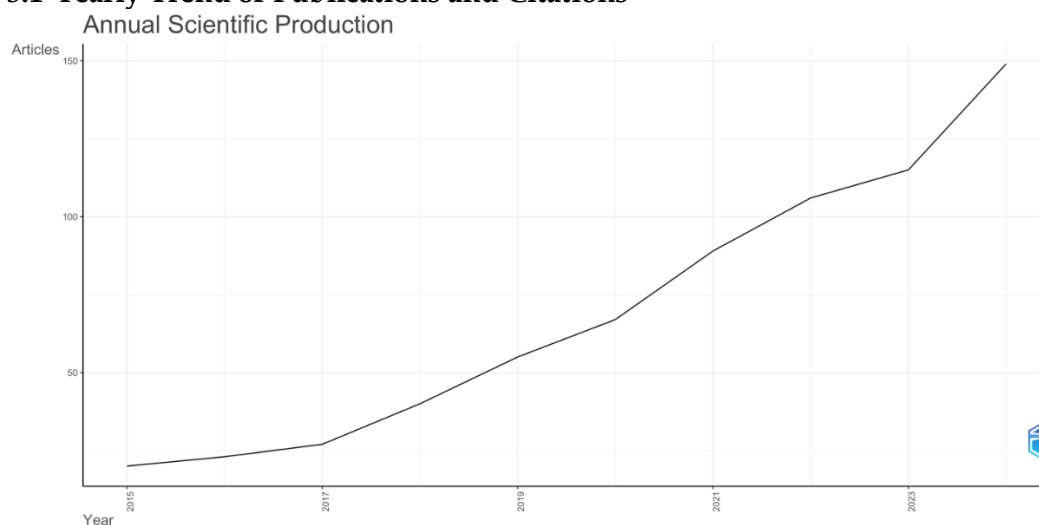


Figure 2: Number of articles published each year from 2014 to 2024

Figure 2 presents the annual scientific production on EFL writing assessment research from 2014 to 2024, as indexed in the Scopus database. The analysis encompassed 1,015 documents, including articles, conference papers, book chapters, and reviews. The data revealed a consistent and significant upward trend in the number of publications over the observed decade. In 2014, fewer than 20 articles were published, but this number increased steadily each year, surpassing 150 articles in 2024. Notably, there was a marked acceleration in publication output beginning in 2018, with the number of published works doubling over the subsequent five years.

Table 1: Highly cited EFL writing assessment research

Rank	Title	Year	Source Title	Cited by	Authors
1	Understanding university students' peer feedback practices in EFL writing: insights from a case study	2017	Assessing Writing	81	Yu, S. & Hu, G.
2	Mediating EFL learners' academic writing skills in online dynamic assessment	2019	Computer-Assisted Language Learning	73	Ebadi, S. & Rahimi, M.

Rank	Title	Year	Source Title	Cited by	Authors
	using Google Docs				
3	Assessing self-regulatory writing strategies and their predictive effects on young EFL learners' writing performance	2022	Assessing Writing	70	Teng et al.
4	Student attitudes that predict participation in peer assessment	2018	Assessment And Evaluation in Higher Education	58	Zou et al.
5	Chinese EFL teachers' writing assessment feedback literacy: a scale development and validation study	2023	Assessing Writing	55	Wang et al.
6	Learning from giving peer feedback on postgraduate theses: voices from master's students in the Macau EFL context	2019	Assessing Writing	55	Yu, S.
7	"I even feel annoyed and angry": teacher emotional experiences in giving feedback on student writing	2021	Assessing Writing	46	Yu et al.
8	An exploration into EFL learners' writing skills via mobile-	2021	Education and Information Technologies	36	Ebadi, S. & Bashir, S.

Rank	Title	Year	Source Title	Cited by	Authors
	based dynamic assessment				
9	What works may hurt: the negative side of feedback in second language writing	2021	Journal of Second Language Writing	33	Yu et al.
10	Diagnostic and developmental potentials of dynamic assessment for L2 writing	2015	Language And Sociocultural Theory	31	Rahimi et al.

The consistent growth in scholarly output reflects the rising research interest and academic engagement in EFL writing assessment. The trend is indicative of both the maturation of the field and the expanding recognition of writing assessment as a critical component of EFL pedagogy and research. This increase in publication activity is paralleled by a growth in scholarly citations, as demonstrated by the presence of highly cited articles within the dataset.

Table 1 lists the 10 most highly cited works, led by Yu and Hu's (2017) study on university students' peer feedback practices (81 citations), followed by Ebadi and Rahimi's (2019) research on online dynamic assessment using Google Docs (73 citations), and Teng et al.'s (2022) work on self-regulatory writing strategies (70 citations). These highly cited articles exemplify key areas of interest and innovation within the field, particularly the integration of technology, feedback mechanisms, and self-regulation strategies in EFL writing assessment.

3.2 Most Relevant Sources

Figure 3 illustrates the cumulative occurrences of publications across the most prolific source titles in EFL writing assessment from 2014 to 2024. The graph demonstrates that several journals have exhibited sustained and accelerating growth in their contributions over time, reflecting both the diversification and specialisation within the field. Notably, *Assessing Writing* leads with the highest cumulative output, showing a marked increase in published works, especially after 2020, ultimately reaching a total of 40 documents by 2024. Other sources, such as *Language Testing in Asia*, *System*, *Computer-Assisted Language Learning*, and *Education and Information Technologies*, also display consistent upward trajectories, indicating their significant roles as outlets for EFL writing assessment research.

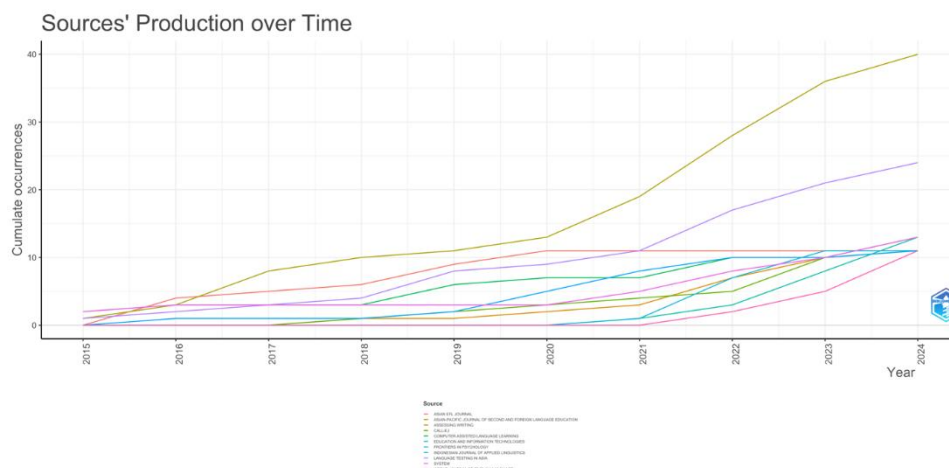


Figure 3: Sources' production over time

Table 2 further quantifies the influence of these sources by documenting the number of articles, citations, and total link strength for each journal. *Assessing Writing* stands out as the most influential journal, not only in terms of the number of published documents but also through its high citation count (991) and substantial link strength (21). Following *Assessing Writing*, the journals *Language Testing in Asia* and *System* emerge as significant contributors, each demonstrating substantial citation impact and fostering strong inter-journal connections, reflecting their central role in shaping research dialogue and advancing scholarship within the field of EFL writing assessment.

Furthermore, journals such as *Computer-Assisted Language Learning* (635 citations) and *Education and Information Technologies* (319 citations) highlight the growing relevance of technology-mediated assessment approaches in the EFL context. The remaining sources, including *Frontiers in Psychology*, *Call-EJ*, *Asia-Pacific Journal of Second and Foreign Language Education*, *Sage Open*, and *Cogent Education*, contribute to the field's interdisciplinary and international scope by publishing impactful research and fostering scholarly exchange across diverse educational and linguistic domains.

Table 2: 10 most sourced titles that contribute to the publication on EFL writing assessment

Rank	Relevant sources	Document	Citation	Total link strength
1	Assessing Writing	40	991	21
2	Language Testing in Asia	26	241	16
3	System	13	225	23
4	Computer-Assisted Language Testing	13	635	19
5	Education and Information Technologies	13	319	9
6	Frontiers in Psychology	12	107	13
7	Call-EJ	11	54	12
8	Asia-Pacific Journal of Second and Foreign Language Education	11	169	7
9	Sage Open	10	101	7
10	Cogent Education	10	87	4

3.3 Most Influential Authors

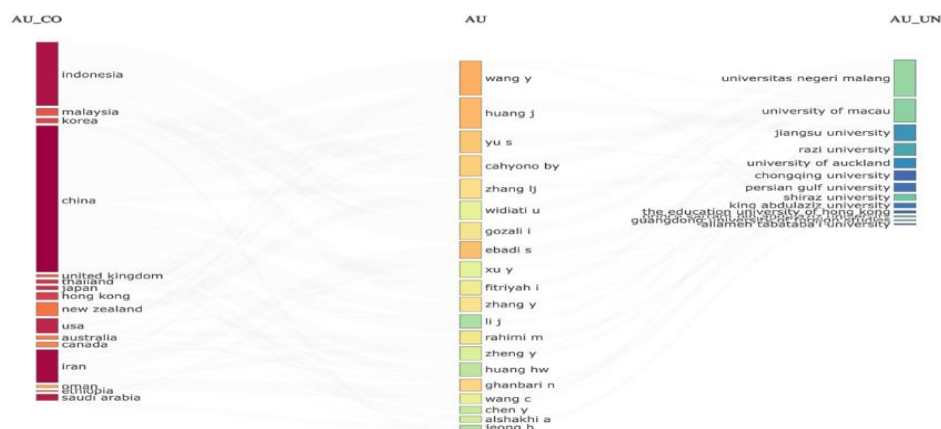


Figure 4: Three-field plot of authors, author country, and affiliation

Figure 4 displays a three-field plot that maps the relationships among the most productive authors, their countries, and institutional affiliations in EFL writing assessment research. The data indicates a substantial concentration of influential authors in Indonesia and China, with notable contributions from countries such as Malaysia, Iran, and the United Kingdom. Among the prominent authors, Wang, Y., Huang, J., Yu, S. and Ebadi, S. are recurrently linked to leading research output. The strongest institutional affiliations include Universitas Negeri Malang, University of Macau, and Jiangsu University, highlighting these universities as prominent options for EFL writing assessment scholarship.

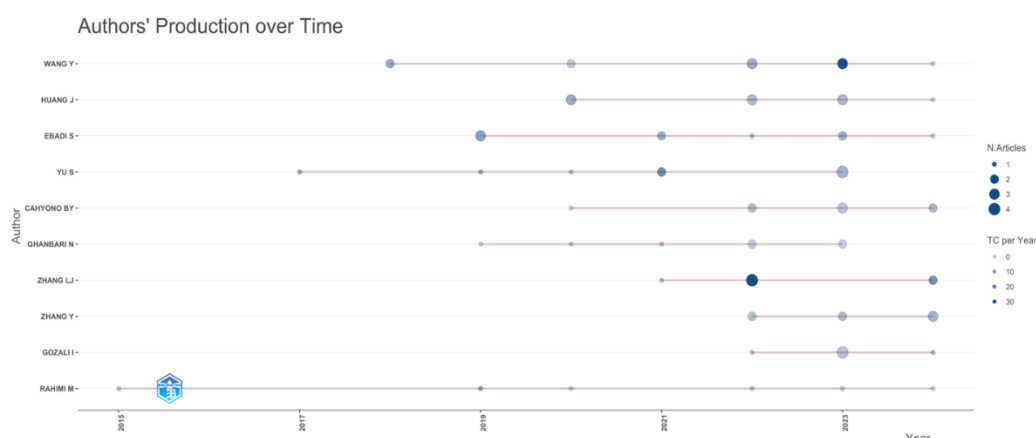


Figure 5: Authors' production over time

Figure 5 illustrates the production of leading authors over time, represented by both the number of articles and total citations per year. Wang, Y. and Huang, J. demonstrate consistent scholarly productivity across the observed decade, with Wang, Y. showing a notable surge in publication and citation activity post-2021. Yu, S. and Ebadi, S. also exhibit sustained impact, with their works consistently cited across multiple years. Zhang, L. J. is distinguished by a marked increase in highly cited publications, particularly in recent years, underscoring growing influence in the field.

Other contributors, such as Cahyono, B. Y., Gozali, I., and Rahimi, M., are characterised by focused periods of high productivity and citation impact, often aligned with institutional and national research priorities. Collectively, these visualisations underscore the pivotal roles played by a select group of prolific authors and institutions, particularly from Asia, in shaping current trends and directions in EFL writing assessment research. The data reveals not only individual productivity but also the importance of sustained institutional support and international collaboration in advancing the field.

3.4 Most Influential Country

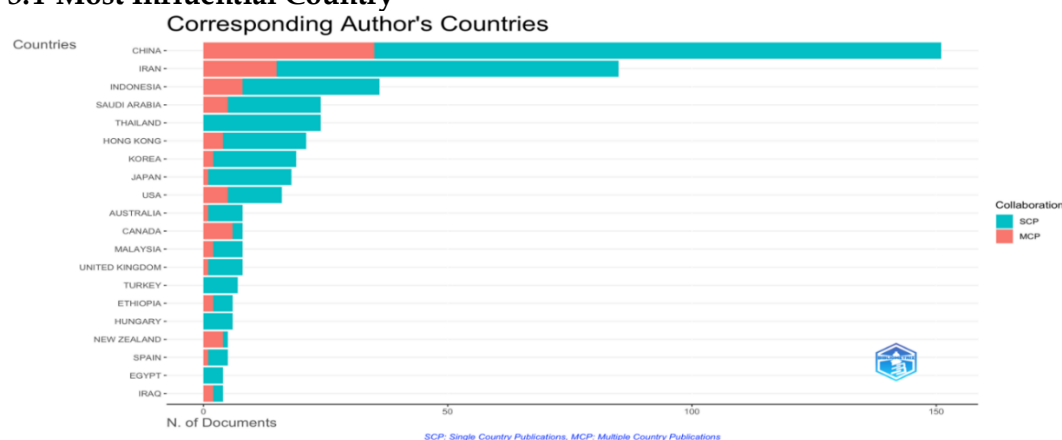


Figure 6: Corresponding author's counties: Geographical collaboration: single-country and multiple-country publications

Figure 6 and Figure 7 present the geographical distribution and collaboration patterns among countries contributing to EFL writing assessment research. The bar chart in Figure 6 illustrates that China leads with the highest number of publications, followed by Iran, Indonesia, Saudi Arabia, and Thailand. China's dominance is evident not only in single-country publications but also in multiple-country publications, indicating both strong internal research capacity and robust international collaboration networks. Iran and Indonesia also demonstrate considerable output, with substantial engagement in international research partnerships.

Figure 6 visualises the bibliographic coupling of countries, highlighting the interconnections among global research communities. China appears as the central node, displaying extensive collaborative linkages with countries across Asia, North America, and Europe. Iran, Indonesia, and Saudi Arabia also occupy significant positions in the global network, forming strong regional clusters and frequent cross-border cooperation.

The presence of countries such as the United States, Japan, and several European nations within the collaboration network further underscores the international scope and growing interdisciplinarity of EFL writing assessment research. These findings emphasise that while Asia, particularly China, Iran, and Indonesia, serves as the primary engine of research productivity, the field is marked by increasing international engagement and collaboration. This broad-based participation enhances the diffusion of knowledge and methodological diversity.

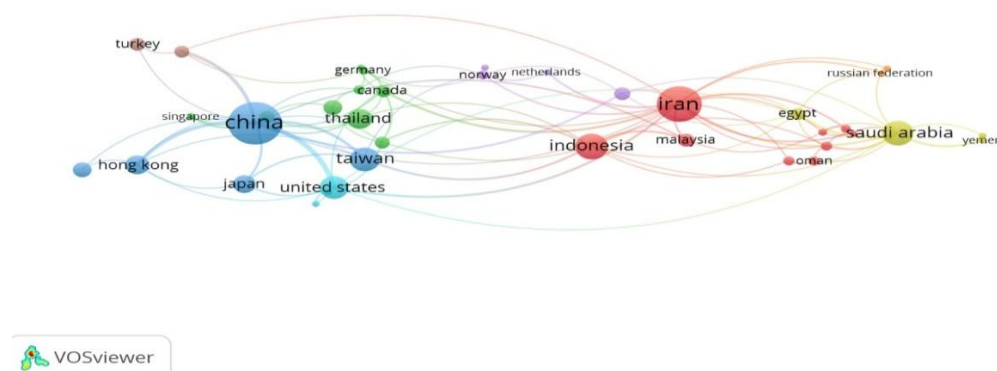


Figure 7: Bibliographic coupling of countries

interconnected with terms such as “assessment,” “self-assessment,” “formative assessment,” “peer feedback,” and “learning.” The visualisation also reveals emerging themes such as “dynamic assessment,” “artificial intelligence,” “automated writing evaluation,” and “ChatGPT,” indicating a growing scholarly interest in digital innovations and their pedagogical implications for EFL writing assessment. The density and connectivity among these keywords underscore the interdisciplinary nature of the research, bridging linguistics, education, psychology, and technology. Overall, the analysis of keywords demonstrates the continued relevance of core topics while highlighting the field’s dynamic evolution toward more diverse and technologically integrated research directions.

3.6 The Current Research Landscape in EFL Writing Assessment

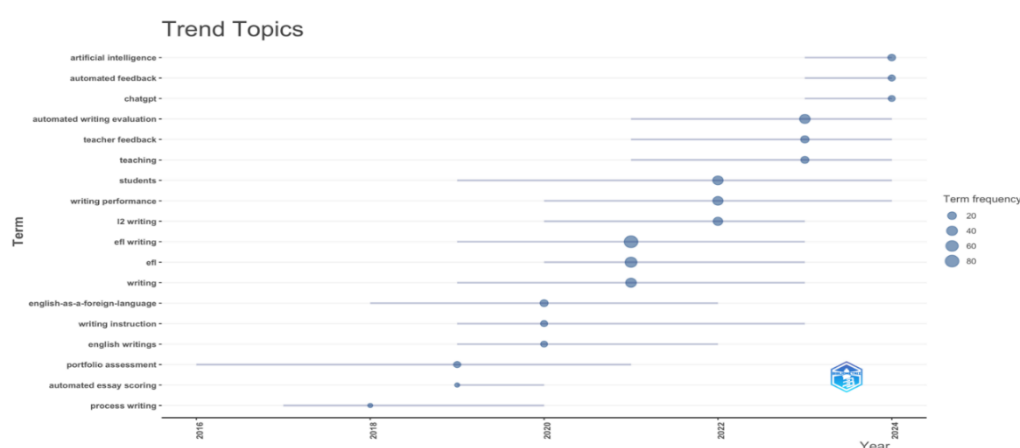


Figure 10: Trend topics of EFL writing assessment

Figure 10 presents the trend topics in EFL writing assessment from 2014 to 2024, indicating the evolution and frequency of key research terms over time. Foundational topics such as “EFL writing,” “writing,” “students,” and “writing performance” remained consistently prominent throughout the period, underscoring their central role in the field. Notably, emerging topics such as “artificial intelligence,” “automated feedback,” and “ChatGPT” have seen rapid increases in frequency since 2022, reflecting the growing integration of technological advancements and digital tools in EFL writing assessment practices.

Figure 11, the thematic map, positions core research themes according to their relevance (centrality) and development (density). “EFL writing,” “EFL,” and “automated writing evaluation” are situated as motor themes – both highly developed and central – highlighting their pivotal function in driving scholarly inquiry and pedagogical innovation. Other themes such as “writing,” “learning,” and “motivation” are similarly robust, while niche topics (e.g. “diagnostic assessment,” “discourse competence”) exhibit specialised but less widespread development. Several basic themes, including “corrective feedback,” “self-assessment,” and “collaborative writing,” demonstrate strong relevance but lower density, signifying ongoing importance and potential for further exploration.

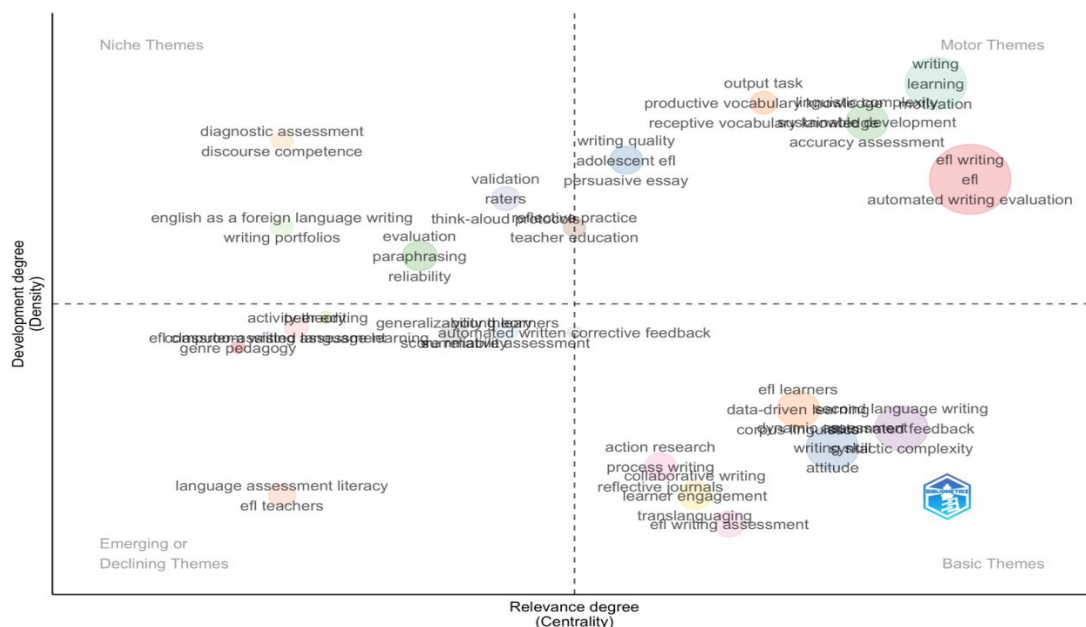


Figure 11: Thematic map of EFL writing assessment

Figure 11 visualises the thematic evolution of EFL writing assessment research across three periods: 2015–2019, 2020–2021, and 2022–2024. Core themes such as “EFL writing,” “writing assessment,” and “students” persist across all periods, indicating their continued centrality. However, the field has notably expanded to incorporate themes such as “action research,” “alternative assessment,” “language assessment,” “learner engagement,” and “teacher professional development” in the most recent years. This thematic diversification points to a broader, more interdisciplinary research landscape, with increased emphasis on technology, pedagogy, and learner-centred approaches.

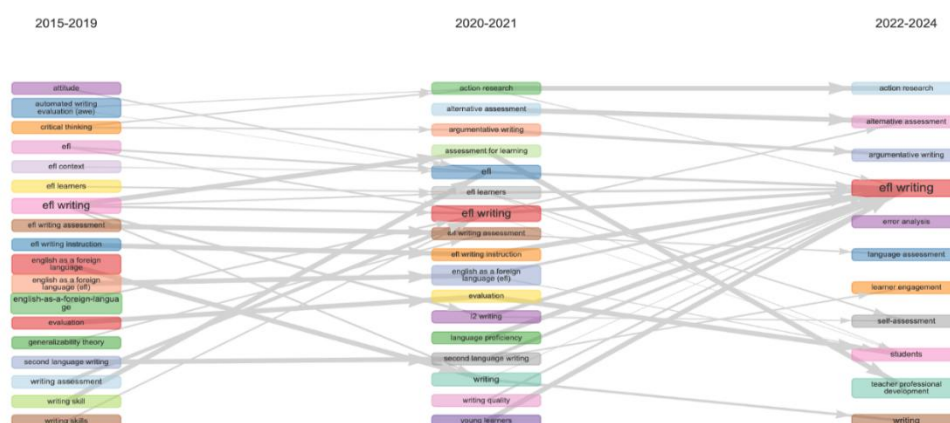


Figure 12: Thematic evolution of EFL writing assessment

Collectively, these analyses demonstrate that the current research landscape in EFL writing assessment is characterised by a balance between enduring foundational topics and dynamic, emerging themes, particularly those driven by technological innovation and evolving pedagogical priorities.

4. Discussion

The present bibliometric analysis of EFL writing assessment research from 2014 to 2024 offered several critical insights into the growth, intellectual structure, and emerging trends within the field. This discussion elaborates on the significance and implications of these findings, situating them in relation to the study's objectives, prior literature, and future prospects for scholarship and practice.

The consistent and accelerating growth in the number of EFL writing assessment publications observed over the past decade underscores the escalating importance attributed to writing assessment in EFL contexts worldwide (Zhang et al., 2022). This expansion mirrors global educational shifts toward enhanced writing instruction, increased emphasis on formative and summative assessment practices, and the recognition of writing as an essential communicative competence for EFL learners. The steady increase in both publication output and citation frequency, particularly after 2018, suggests a maturation of the research field and a proliferation of new research avenues, including technology-mediated assessment, feedback literacy, and learner autonomy (Djeki et al., 2022).

This trend is aligned with previous bibliometric and science mapping studies in other education and linguistics domains, where periods of rapid publication growth have marked shifts in theoretical paradigms, methodological approaches, and the diffusion of innovation across geographic regions (Aria et al., 2024). The surge in EFL writing assessment research, especially in the last five years, may be attributed in part to the global shift to online and blended learning environments, which has necessitated a re-evaluation of assessment tools and frameworks. The pandemic era's impact, with increased adoption of digital technologies in education, has likely accelerated these research trends, reflecting new practical realities and challenges faced by EFL educators and learners worldwide (Zhang et al., 2022b).

The identification of leading sources such as *Assessing Writing*, *Language Testing in Asia*, and *Computer-Assisted Language Learning* illustrates the establishment of core publication venues that serve as intellectual hubs within the field. These journals not only concentrate scholarly output but also foster interdisciplinary dialogue, facilitating the exchange of ideas between assessment theory, applied linguistics, and educational technology (Zou et al., 2021). The prominence of journals like *Computer-Assisted Language Learning* signifies a clear orientation toward digital and technology-supported assessment, a trend that resonates with the increasing integration of automated writing evaluation in EFL assessment research (Zhang & Xi, 2023).

The dynamic growth of source titles reflects both diversification and specialisation in research outputs. The expansion of publication venues enhances the visibility of niche research topics while sustaining robust discussion around foundational issues in EFL writing assessment (Awla et al., 2023). This diversification supports the ongoing renewal and adaptability of the research field, allowing it to remain responsive to changes in pedagogical priorities and technological advancements.

The bibliometric mapping of influential authors and their institutional affiliations highlights the emergence of leading research clusters, particularly in Asia, with China, Indonesia, and Iran as significant contributors to the global research landscape (Ebrahimi et al., 2021). The concentrated output from authors such as Wang, Y., Huang, J., Yu, S., and Ebadi, S., and from institutions like Universitas Negeri Malang and Jiangsu University, indicates the formation of academic communities with sustained research agendas in EFL writing assessment. This regional concentration of productivity aligns with broader patterns observed in applied linguistics, where rapid educational expansion and investment in research infrastructure in Asia have positioned these countries as key players in the international academic arena (Sohrabi et al., 2022).

The analysis of author production over time, coupled with citation impact, demonstrates that sustained scholarly activity, supported by institutional and cross-national collaboration, is central to advancing research frontiers. The increasing number of multi-country publications also points to a trend towards internationalisation and methodological pluralism, which not only broadens the knowledge base but also enriches the field's cultural and contextual diversity (Al-Rashidi et al., 2022; Weng, 2023; Yang et al., 2023). Such trends are crucial for ensuring that EFL writing assessment research is globally relevant and adaptable to a wide range of educational settings.

One of the most striking findings from the geographical analysis is the dominant role played by China, followed by Iran, Indonesia, Saudi Arabia, and Thailand, in driving research productivity (Awla et al., 2023; Ebrahimi et al., 2021; Sohrabi et al., 2022). China's preeminence is evident in both single-country and multiple-country publications, underlining its dual capacity for domestic research leadership and international collaboration. The bibliographic coupling of countries reveals an increasingly interconnected global research network, with active knowledge exchange between Asian countries and partners in North America, Europe, and the Middle East.

This expanding collaboration network facilitates the diffusion of innovative methodologies, assessment tools, and pedagogical practices across diverse educational systems. It also underscores the growing interdisciplinarity of EFL writing assessment, where linguists, educators, psychologists, and technologists jointly contribute to research and practice. These findings echo those of prior bibliometric studies that have emphasised the role of international collaboration in accelerating scientific progress and fostering the development of globally informed educational policy (Al-Rashidi et al., 2022; Chen & Huang, 2023).

The keyword co-occurrence and thematic mapping analyses reveal both stability and change within the conceptual structure of EFL writing assessment research. Foundational topics such as “EFL writing,” “writing assessment,” “students,” and “writing performance” have remained at the core of research interests throughout the last decade, signifying enduring priorities in the field (Dai et al., 2023; Sohrabi et al., 2022). At the same time, the emergence of themes like “automated writing evaluation,” “artificial intelligence,” “dynamic assessment,” and “ChatGPT” signals a paradigm shift toward technologically enhanced assessment and data-driven approaches.

The increasing prominence of keywords related to digital assessment methods reflects the field's responsiveness to global trends in educational technology. As automated writing evaluation tools and artificial intelligence become more integrated into classroom practice and research, new opportunities arise for scalable, individualised, and formative assessment (Nejad et al., 2022). The growing attention to peer feedback, self-assessment, and collaborative writing in keyword trends also illustrates a pedagogical shift towards learner agency and metacognitive development. This aligns with calls in the literature for more interactive, formative, and student-centred approaches to writing assessment (Dewi et al., 2023; Zou et al., 2021).

The current research landscape, as depicted in Figures 9–11, is characterised by a balance between well-established themes and rapidly evolving topics driven by digital innovation and changing educational needs. The persistence of “EFL writing,” “writing assessment,” and “students” as motor themes indicates the field's stability, while the expansion into “action research,” “alternative assessment,” “learner engagement,” and “teacher professional development” demonstrates the growing interdisciplinarity and methodological sophistication of the field (Fitria, 2022). The thematic evolution analysis provides evidence of an increasingly nuanced and multifaceted domain, where core topics continue to be revisited and enriched by new theoretical and practical perspectives.

This thematic diversification mirrors broader educational and technological shifts, where the integration of digital tools and emphasis on formative assessment have become central to EFL pedagogy (Caleffi, 2023; Fitria, 2021). The presence of cutting-edge topics such as “artificial intelligence” reflects the field's engagement with contemporary technological developments, positioning EFL writing assessment research at the intersection of language education, data science, and educational psychology. The evolution of themes also points to an expanding research agenda that accommodates both established assessment concerns and emergent issues linked to technological, cultural, and policy changes.

The findings of this study are consistent with previous research that has underscored the value of bibliometric mapping for elucidating research trends, identifying influential actors, and tracking thematic evolution (Fitriati & Gayatri, 2021; Sun & Zhang, 2022). By employing advanced bibliometric tools such as Bibliometrix, VOSviewer, and Biblioshiny, this analysis has offered a data-driven and transparent account of the intellectual structure of EFL writing assessment,

complementing prior narrative reviews and meta-analyses. The study has advanced the field's understanding by integrating a decade-long perspective and by providing granular detail on author networks, international collaborations, and thematic trajectories.

A notable contribution of the current research is its capacity to bridge the gap between theory and practice, offering actionable insights for educators, researchers, and policymakers. The identification of emerging trends and influential clusters enables stakeholders to recognise areas of rapid development and to allocate resources more strategically (Shoryaditya, 2023). For instance, the growing emphasis on automated and formative assessment suggests avenues for professional development and curricular innovation in teacher education. Likewise, the mapping of international collaborations can inform institutional strategies for research partnerships and knowledge exchange.

The implications of these findings for future research are multifaceted. First, the documented growth and diversification of EFL writing assessment research highlight the need for continued monitoring of emerging trends, particularly those related to technological innovation (Munagandla et al., 2024). Researchers should prioritise longitudinal studies and experimental designs that evaluate the impact of digital assessment tools, artificial intelligence, and new feedback modalities on learner outcomes. The proliferation of automated writing evaluation and formative assessment technologies calls for rigorous validation studies and for the development of contextually sensitive frameworks that address ethical, cultural, and pedagogical considerations (Biu et al., 2024; Eyieyien et al., 2024).

Second, the prominence of Asian countries in research productivity and collaboration networks suggests opportunities for comparative studies that explore the transferability and adaptation of best practices across diverse educational systems. Such research could illuminate the contextual factors that facilitate or constrain the adoption of innovative assessment approaches, supporting the development of more inclusive and globally relevant assessment frameworks.

Third, the continued centrality of formative assessment, peer and self-assessment, and feedback literacy in the thematic structure of the field indicates a sustained demand for pedagogical research that explores how these practices can be optimised for diverse learner populations (Ebrahimi, 2021; Kumar et al., 2023). Future studies should also investigate the interplay between technology, assessment literacy, and learner engagement to develop holistic and adaptive assessment ecosystems.

In conclusion, this bibliometric analysis has contributed a comprehensive, longitudinal, and data-driven account of the EFL writing assessment research landscape from 2014 to 2024. By systematically mapping publication trends, influential sources and authors, international collaboration networks, and evolving research themes, the study has provided a nuanced understanding of the

field's intellectual structure and its ongoing evolution (Fitriady et al., 2022; Kiasi & Rezaie, 2021).

The findings highlight the increasing prominence of technology-mediated and formative assessment approaches, the emergence of influential research clusters in Asia, and the diversification of research themes towards interdisciplinary and global concerns. These contributions have both scholarly and practical significance, informing future research agendas, policy formulation, and classroom practice in EFL writing assessment. The integration of bibliometric tools has set a methodological benchmark for future reviews, ensuring transparency, reproducibility, and analytical rigour. As the field continues to evolve in response to technological, pedagogical, and societal changes, ongoing bibliometric mapping will be essential for sustaining the relevance and impact of EFL writing assessment research worldwide (Partanen et al., 2024).

5. Conclusion

This bibliometric analysis provides a comprehensive and systematic overview of the trends and developments in EFL writing assessment research from 2014 to 2024. The findings reveal a decade marked by steady and significant growth in scholarly output, reflecting heightened global interest and the recognition of writing assessment as a critical pillar of EFL education. The study identifies the emergence of core publication venues, influential authors – particularly from Asia – and expanding international collaboration networks, all of which have contributed to the intellectual vitality and diversification of the field. The thematic evolution captured in this study demonstrated a sustained focus on foundational issues such as formative assessment, feedback, and writing performance, alongside the rapid incorporation of new themes, including automated writing evaluation, artificial intelligence, and digital technologies.

The integration of advanced bibliometric tools and mapping methodologies has enabled a nuanced understanding of both established and emerging topics, providing actionable insights for researchers, educators, and policymakers. Notably, the field's increased engagement with technology-enhanced assessment and learner-centred approaches highlighted its adaptability and responsiveness to evolving educational landscapes. This study contributes significantly to the field by bridging theory and practice and by setting a methodological benchmark for future bibliometric inquiries. Going forward, ongoing bibliometric monitoring will be essential to capture new directions, support evidence-based innovation, and ensure that EFL writing assessment remains aligned with global educational and technological advances.

6. References

- Al-Rashidi, A. H., Asif, M., Vanani, M. G., & Aberash, A. (2022). Learner-oriented assessment (LOA) practice: The comparative study of self-assessment, peer assessment, and teacher assessment on EFL learners' writing complicity, accuracy, and fluency (CAF), speaking CAF, and attitude. *Language Testing in Asia*, 12(1). <https://doi.org/10.1186/s40468-022-00209-x>
- Aria, M., Cuccurullo, C., D'Aniello, L., Misuraca, M., & Spano, M. (2024). Comparative science mapping: a novel conceptual structure analysis with

- metadata. *Scientometrics*, 129(11), 7055–7081. <https://doi.org/10.1007/s11192-024-05161-6>
- Aria, M., Le, T., Cuccurullo, C., Belfiore, A., & Choe, J. (2024). OpenalexR: an R-tool for collecting bibliometric data from OpenAlex. *The R Journal*, 15(4), 167–180. <https://doi.org/10.32614/RJ-2023-089>
- Armanda, M. L., Nugraheni, A. F., Wulansari, A., & Imron, A. (2022). “Grammarly” as English writing assistant from EFL students’ perspective. *English Education Journal of English Teaching and Research*, 7(2), 128–137. <https://doi.org/10.29407/jetar.v7i2.17988>
- Awla, F. G., Safar, S. R., Ade, J. H., & Abdullah, S. A. (2023). Investigation of the Impact of technology on the written production of EFL learners in Iraqi Kurdistan. *JLS*, 6(4, 2), 95–104. <https://doi.org/10.25130/jls.6.4.2.7>
- Bancong, H. (2024). The past and present of thought experiments’ research at Glancy: Bibliometric review and analysis. *Discover Education*, 3(1), 142. <https://doi.org/10.1007/s44217-024-00246-z>
- Beskaravainaya, E. V. (2024). Not to throw the baby out with the bath water ... on the approach to assessing research output. *Scientific and Technical Libraries*, 4, 68–85. <https://doi.org/10.33186/1027-3689-2024-4-68-85>
- Biu, P. W., Oliha, J. S., & Chimezie, O. (2024). The evolving role of geospatial intelligence in enhancing urban security: a review of applications and outcomes. *Engineering Science & Technology Journal*, 5(2), 483–495. <https://doi.org/10.51594/estj.v5i2.826>
- Calderón-Fajardo, V., Molinillo, S., Anaya-Sánchez, R., & Jiménez-Barreto, J. (2024). Navigating the future of brand experience: Insights from bibliometric analysis. *Spanish Journal of Marketing - Esic*. <https://doi.org/10.1108/sjme-05-2024-0137>
- Caleffi, P.-M. (2023). A comparison between EFL writing Errors in computer-based and paper-based assignments. *Languages Cultures Mediation*, 10(1), 17–46. <https://doi.org/10.7358/lcm-2023-001-calp>
- Chen, B., & Huang, J. (2023). A Chinese perspective on writing English abstracts: Challenges, errors, improvement tips, and critical reflections. *SAGE Open*, 13(3). <https://doi.org/10.1177/21582440231194188>
- Chen, B., Bao, L., Zhang, R., Zhang, J., Liu, F., Wang, S., & Li, M. (2023). A multi-strategy computer-assisted EFL writing learning system with deep learning incorporated and its effects on learning: a writing feedback perspective. *Journal of Educational Computing Research*, 61(8), 1596–1638. <https://doi.org/10.1177/07356331231189294>
- Chhorn, T., & Wang, J. (2025). A study of teacher feedback impact on Cambodian EFL students’ L2 writing: Perception, performance, and attribution. *Journal.JEILT*, 1–318. <https://doi.org/10.63381/jeilt.vi.14>
- Das, R. (2022). Keeping time: A taxonomy of temporal effects on employees at the workplace. *Journal of Management History*, 29(2), 252–275. <https://doi.org/10.1108/jmh-02-2022-0005>
- Dewi, G. P. R., Santosa, M. H., Dewi, N. L. P. E. S., & Nitiasih, P. K. (2023). Assessing students’ writing skills in virtual classroom: Strategies and challenges in EFL context. *Journal on English as a Foreign Language*, 13(1), 147–170. <https://doi.org/10.23971/jevl.v13i1.5288>
- Djeki, E., Dégila, J., Bondiombouy, C., & Alhassan, M. H. (2022). E-learning bibliometric analysis from 2015 to 2020. *Journal of Computers in Education*, 9(4), 727–754. <https://doi.org/10.1007/s40692-021-00218-4>
- Ebadi, S., & Rahimi, M. (2019). Mediating EFL learners’ academic writing skills in online dynamic assessment using Google Docs. *Computer Assisted Language Learning*, 32(5–6), 527–555. <https://doi.org/10.1080/09588221.2018.1527362>

- Ebrahimi, A. B. (2021). Measuring productive derivational knowledge of the most frequent words. *International Journal of English Studies*, 21(1), 55–74. <https://doi.org/10.6018/IJES.412191>
- Ebrahimi, M., Izadpanah, S., & Namaziandost, E. (2021). The impact of writing self-assessment and peer assessment on Iranian EFL learners' autonomy and metacognitive awareness. *Education Research International*, 2021, 1–12. <https://doi.org/10.1155/2021/9307474>
- Eyieyien, O. G., Idemudia, C., Paul, P. O., & Ijomah, T. I. (2024). Advancements in project management methodologies: integrating agile and waterfall approaches for optimal outcomes. *Engineering Science & Technology Journal*, 5(7), 2216–2231. <https://doi.org/10.51594/estj.v5i7.1312>
- Fajri, N., Sriyati, S., & Rochintaniawati, D. (2024). Global research trends of digital learning media in science education: a bibliometric analysis. *Jurnal Penelitian Pendidikan Ipa*, 10(1), 1–11. <https://jppipa.unram.ac.id/index.php/jppipa/article/view/6248>
- Fauzi, M. A., Saad, Z. A., Aripin, M. A., & Sapuan, N. M. (2025). Let's play and learn: a state-of-the-art review on gamification-based learning with a bibliometric analysis in the higher education institutions. *Journal of Computer Assisted Learning*, 41(3). <https://doi.org/10.1111/jcal.70029>
- Fitria, T. N. (2021). "Grammarly" as a teacher's alternative in evaluating non-EFL students' writings. *Leksema Jurnal Bahasa Dan Sastra*, 6(2), 141–152.
- Fitria, T. N. (2022). Identifying grammatical and mechanical errors of students' writing: using "grammarly" as an online assessment. *Lingua Didaktika Jurnal Bahasa Dan Pembelajaran Bahasa*, 16(2), 169. <https://doi.org/10.24036/ld.v16i2.116824>
- Fitriady, G., Alfarizi, M. A. M., & Saputra, S. A. (2022). Optimization of movement skills assessment in physical education learning using online self and peer assessment. *Journal of Science and Education (JSE)*, 3(2), 159–164. <https://doi.org/10.56003/jse.v3i2.168>
- Fitriati, S. W., & Gayatri, N. M. (2021). Thematic progression in EFL learners' writing: a literature review. *Lingua Cultura*, 15(2), 257–262. <https://doi.org/10.21512/lc.v15i2.7645>
- Gonzalez-Torres, P., & Sarango, C. (2023). Effectiveness of teacher and peer feedback in efl writing: a case of high school students. *International Journal of Learning Teaching and Educational Research*, 22(4), 73–86. <https://doi.org/10.26803/ijlter.22.4.5>
- Hedayati, N., & Khoorsand, M. (2024). Tapping into assessment literacy: unfolding assessment as learning strategies and EFL learners' writing development. *Reila Journal of Research and Innovation in Language*, 6(1), 21–37. <https://doi.org/10.31849/reila.v6i1.15894>
- Dai, J., Wang, L., & He, Y. (2023). Exploring the effect of wiki-based writing instruction on writing skills and writing self-efficacy of Chinese English-as-a-foreign-language learners. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.1069832>
- Joseph, J., Jose, J., Jose, A. S., Ettaniyil, G. G., Cyriac, J., Sebastian, S. A., & Joseph, A. P. (2024). Quantitative insights into outcome-based education: A bibliometric exploration. *International Journal of Evaluation and Research in Education (IJERE)*, 13(6), 4030. <https://doi.org/10.11591/ijere.v13i6.29272>
- Ketkumbonk, A., & Sukying, A. (2024). Assessing the assessors: language assessment knowledge and beliefs in Thai preservice English teachers. *International Journal of Learning, Teaching and Educational Research*, 23(12), 38–61. <https://doi.org/10.26803/ijlter.23.12.3>

- Kiasi, G. A., & Rezaie, S. (2021). The effect of peer assessment and collaborative assessment on Iranian intermediate EFL learners' writing ability. *Journal of English Language Teaching and Applied Linguistics*, 3(13), 8–16. <https://doi.org/10.32996/jeltal.2021.3.13.2>
- Kumalasari, D. (2023). EFL female students' perceptions in doing collaborative writing in an online writing class. *Elt Forum Journal of English Language Teaching*, 12(1), 16–26. <https://doi.org/10.15294/elt.v12i1.64952>
- Kumar, T., Soozandehfar, S. M. A., Hashemifardnia, A., & Mombeini, R. (2023). Self vs. peer assessment activities in EFL-speaking classes: Impacts on students' self-regulated learning, critical thinking, and problem-solving skills. *Language Testing in Asia*, 13(1). <https://doi.org/10.1186/s40468-023-00251-3>
- Li, X., & Chen, J. (2024). Survive and thrive in the time of changes: a bibliometric review of teacher resilience, 1998–2023. *Review of Educational Research*. <https://doi.org/10.3102/00346543241293786>
- Liu, W. (2021). Caveats for the use of Web of Science Core Collection in old literature retrieval and historical bibliometric analysis. *Technological Forecasting and Social Change*, 172, 121023. <https://doi.org/10.1016/j.techfore.2021.121023>
- Madzík, P., Falát, L., Copuš, L., & Valeri, M. (2023). Digital transformation in tourism: bibliometric literature review based on machine learning approach. *European Journal of Innovation Management*, 26(7), 177–205. <https://doi.org/10.1108/ejim-09-2022-0531>
- Mali, Y. C. G., & Salsbury, T. L. (2021). Technology integration in an Indonesian EFL writing classroom. *Teflin Journal - A Publication on the Teaching and Learning of English*, 32(2), 243. <https://doi.org/10.15639/http://teflinjournal.v32i2/243-266>
- Melicherová, M., Ondrišová, M., & Šušol, J. (2021). Bibliometrics versus altmetrics: researchers' attitudes in Slovakia. *Iberoamerican Journal of Science Measurement and Communication*, 1(1), 002. <https://doi.org/10.47909/ijsmc.11>
- Munagandla, V. B., Pochu, S., Nersu, S. R. K., & Kathram, S. R. (2024). Real-time data integration for emergency response in healthcare systems. *Japmi*, 3(1), 25–38. <https://doi.org/10.60087/japmi.vol.03.issue.01.id.002>
- Nanda, A. R., Nurnawaty, Mansida, A., & Bancong, H. (2025). A bibliometric analysis of trends in rainfall-runoff modelling techniques for urban flood mitigation (2005–2024). *Results in Engineering*, 26, 104927. <https://doi.org/10.1016/j.rineng.2025.104927>
- Nejad, M. E., Izadpanah, S., Namaziandost, E., & Rahbar, B. (2022). The mediating role of critical thinking abilities in the relationship between English as a foreign language learners' writing performance and their language learning strategies. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.746445>
- Ninkov, A., Frank, J. R., & Maggio, L. A. (2021). Bibliometrics: methods for studying academic publishing. *Perspectives on Medical Education*, 11(3), 173–176. <https://doi.org/10.1007/s40037-021-00695-4>
- Nurfadilah, N., Bancong, H., Saad, R., & Fiskawarni, T. H. (2025). Direction of gamification in science education: Literature review and indexed bibliography. *International Journal of Learning, Teaching and Educational Research*, 24(4), 568–591. <https://doi.org/10.26803/ijlter.24.4.26>
- Omarkaly, E. (2021). The impact of portfolio assessment on the Moroccan EFL students' writing skills. *International Journal of Social Science and Human Research*, 4(10). <https://doi.org/10.47191/ijsshr/v4-i10-23>
- Partanen, L., Myyry, L., & Asikainen, H. (2024). Physical chemistry students' learning profiles and their relation to study-related burnout and perceptions

- of peer and self-assessment. *Chemistry Education Research and Practice*, 25(2), 474–490. <https://doi.org/10.1039/d3rp00172e>
- Pereira, J. M., Almeida, P., & Almeida, G. G. F. de. (2025). Bibliometric analysis of key variables in tourism: destination, competitiveness, image, quality, and tourist satisfaction (2000–2023). *Administrative Sciences*, 15(2), 69. <https://doi.org/10.3390/admsci15020069>
- Shoryaditya, S. (2023). An analysis of CSR and its expenditure in India in the terms of trends, impact and challenges. *TJJPT*, 44(4), 4173–4189. <https://doi.org/10.52783/tjjpt.v44.i4.1639>
- Sohrabi, Z., Ghanbari, N., & Abbasi, A. (2022). Iranian EFL teachers' perceptions of writing assessment literacy: A countrywide study. *Language Testing in Asia*, 12(1). <https://doi.org/10.1186/s40468-022-00172-7>
- Solorzano, V., Garzozzi-Pincay, R. F., Garcia, T., Lainez-Villao, M. D., Alcivar-Ponce, J. L., Guandinango-Vinueza, Y. A., & Neira-Quinteros, V. P. (2024). The fourth educational revolution and the impact of AI on pedagogy. *Evolutionary Studies in Imaginative Culture*, 1116–1131. <https://doi.org/10.70082/esiculture.vi.1315>
- Sun, J., Motevalli, S., Chan, N. N., & Khodi, A. (2024). Implementation of self-regulated learning writing module: amplifying motivation and mitigating anxiety among EFL learners. *Forum for Linguistic Studies*, 6(3), 89–109. <https://doi.org/10.30564/fls.v6i3.6600>
- Sun, Q., & Zhang, L. J. (2022). Understanding learners' metacognitive experiences in learning to write in English as a foreign language: A structural equation modelling approach. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.986301>
- Susetyo, P. T., Handayani, S. D., & Widowati, R. (2024). The impact of customer experience on customer satisfaction: a bibliometric approach. *International Journal Management and Economic*, 3(3), 108–112. <https://doi.org/10.56127/ijme.v3i3.1705>
- Syamdianita, S., & Hati, G. M. (2025). Collaborative online writing: students' perspectives and their actual writing performance. *Script Journal of Linguistic and English Teaching*, 10(1), 174–189. <https://doi.org/10.24903/sj.v10i1.1902>
- Takrouni, A., & Assalahi, H. (2022). An inquiry into EFL teachers' perceptions of integrating student self-assessment into teaching academic writing at a Saudi University. *Theory and Practice in Language Studies*, 12(3), 471–481. <https://doi.org/10.17507/tpls.1203.06>
- Taufiqulloh, T., Fadhly, F. Z., & Rosdiana, I. (2024). Effects of collaborative assessment on undergraduate students' writing performance. *Studies in English Language and Education*, 11(3), 1574–1595. <https://doi.org/10.24815/siele.v11i3.37704>
- Tayyebi, M., Abbasabady, M. M., & Abbassian, G.-R. (2022). Examining classroom writing assessment literacy: A focus on in-service EFL teachers in Iran. *Language Testing in Asia*, 12(1). <https://doi.org/10.1186/s40468-022-00161-w>
- Teng, M. F., Wang, C., & Zhang, L. J. (2022). Assessing self-regulatory writing strategies and their predictive effects on young EFL learners' writing performance. *Assessing Writing*, 51. <https://doi.org/10.1016/j.asw.2021.100573>
- Tian, C. (2024). The influence of generative AI technologies on academic writing in EFL education. *Journal of Education Humanities and Social Sciences*, 28, 575–584. <https://doi.org/10.54097/xv0rbq11>

- 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>
- Verlaque, L., Jacob, B., Sharma, R., Juha, Y., Nordstrom, J., Kumar, L., McGlynn, S., Trower, R., Hamilton-West, K. E., Burns, H., & Redmond, P. (2025). Evaluating interventions to enhance public awareness of cancer symptoms: Protocol for a systematic review and network meta-analysis. *HRB Open Research*, 8, 2. <https://doi.org/10.12688/hrbopenres.13971.1>
- Visser, M., van Eck, N. J., & Waltman, L. (2021). Large-scale comparison of bibliographic data sources: Scopus, Web of Science, Dimensions, CrossRef, and Microsoft Academic. *Quantitative Science Studies*, 2(1), 20–41. https://doi.org/10.1162/qss_a_00112
- Weng, F. (2023). EFL teachers' writing assessment literacy: surveying teachers' knowledge, beliefs, and practises in China. *Porta Linguarum Revista Interuniversitaria De Didáctica De Las Lenguas Extranjeras*, 40, 57–74. <https://doi.org/10.30827/portalin.vi40.23812>
- Wijaya, K. F. (2022). Indonesian EFL teachers' perceptions on formative assessment in writing. *Jet (Journal of English Teaching)*, 8(1), 59–70. <https://doi.org/10.33541/jet.v8i1.3359>
- Xiong, Y. (2024). A review of the features and efficacy of ChatGPT AI writing assistant in influencing EFL learners' English writing skills. *Tssehr*, 11, 177–183. <https://doi.org/10.62051/bxz3th29>
- Yang, J., Zheng, M., & Liu, Y. (2023). Fusion weighted features and BiLSTM-attention model for argument mining of EFL writing. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1049266>
- Yu, S., & Hu, G. (2017). Understanding university students' peer feedback practices in EFL writing: Insights from a case study. *Assessing Writing*, 33, 25–35. <https://doi.org/10.1016/j.asw.2017.03.004>
- Yuza, S., Purnawarman, P., & Sukyadi, D. (2024). Portfolio assessment in EFL writing context in Indonesia: a systematic literature review. *Linguistic English Education and Art (Leea) Journal*, 7(2), 409–432. <https://doi.org/10.31539/leea.v7i2.8973>
- Zhang, L., Carter, R. A., Qian, X., Yang, S., Rujimora, J., & Wen, S. (2022). Academia's responses to crisis: A bibliometric analysis of literature on online learning in higher education during COVID-19. *British Journal of Educational Technology*, 53(3), 620–646. <https://doi.org/10.1111/bjet.13191>
- Zhang, X. S., & Zhang, L. J. (2022). Sustaining learners' writing development: effects of using self-assessment on their foreign language writing performance and rating accuracy. *Sustainability*, 14(22), 14686. <https://doi.org/10.3390/su142214686>
- Zhang, X. S., Zhang, L. J., Parr, J. M., & Biebricher, C. (2022a). Exploring teachers' attitudes and self-efficacy beliefs for implementing student self-assessment of English as a foreign language writing. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.956160>
- Zhang, X. S., Zhang, L. J., Parr, J. M., & Biebricher, C. (2022b). Exploring teachers' attitudes and self-efficacy beliefs for implementing student self-assessment of English as a foreign language writing. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.956160>
- Zhang, Y. (2024). A lesson study on a MOOC-based and AI-powered flipped teaching and assessment of EFL writing model: Teachers' and students' growth. *International Journal for Lesson and Learning Studies*, 13(1), 28–40. <https://doi.org/10.1108/ijlls-07-2023-0085>

- Zhang, Y., & Xi, J. (2023). Fostering self-regulated young writers: Dynamic assessment of metacognitive competence in secondary school EFL class. *Language Assessment Quarterly*, 20(1), 88–107. <https://doi.org/10.1080/15434303.2022.2103702>
- Zou, M., Kong, D., & Lee, I. (2021). Teacher engagement with online formative assessment in EFL writing during COVID-19 pandemic: The case of China. *The Asia-Pacific Education Researcher*, 30(6), 487–498. <https://doi.org/10.1007/s40299-021-00593-7>