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## Two Decades of Academic Writing Assessment in Higher Education: A Bibliometric and Technological Trend Analysis of Scopus (2000-2025)

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**Abstract.** Academic Writing Assessment (AWA) in higher education is essential for students, educators, and institutional stakeholders, as it not only evaluates students' writing proficiency but also informs pedagogical practices and supports ongoing curriculum development. Despite an expanding body of literature in this domain, comprehensive bibliometric studies that systematically map the publication landscape, identify influential contributors, and trace the evolution of research themes remain scarce. This study addresses this gap by conducting a systematic bibliometric analysis of AWA research in higher education, examining publication trends, thematic development, and key authorship from 2000 to 2025. A total of 545 Scopus-indexed journal articles were analyzed using VOSviewer, Biblioshiny-R, Microsoft Excel, and OpenRefine. The results indicate a consistent growth in publications, particularly after 2010, with a marked surge since 2018. Teng M.F was identified as the most prolific author, offering future researchers clear reference points for seminal works in the field. The most cited publication, Strobl with 212 citations, examined the integration of digital technologies in academic writing. Geographically, the United Kingdom accounted for the highest publication output. Thematic analysis revealed central topics including "academic writing," "higher education," and "assessment," alongside emerging themes such as "collaborative learning," "ChatGPT," "artificial intelligence," and "academic integrity." Current trends suggest that technological integration is reshaping AWA, frequently prioritizing efficiency and measurable outcomes over students' metacognitive,

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literacy, critical thinking, and analytical development. These findings highlight the need for more holistic assessment approaches that consider both the processes and outcomes of academic writing. Future research should integrate evaluations of writing processes, learning outcomes, and technological applications to foster a comprehensive understanding of AWA in higher education.

**Keywords:** Academic Writing Assessment; Bibliometric Analysis; Digital Technology; Research Trends; Higher Education

## 1. Introduction

Academic writing skills constitute a fundamental aspect of higher education, as they are closely linked to students' overall academic performance and success. The capacity of students to clearly and coherently express their ideas in written form is a critical determinant of academic achievement, enabling learners to communicate knowledge effectively, construct arguments, and demonstrate analytical reasoning (Al-Hammadi & Sidek, 2015). From an instructional standpoint, structured evaluation mechanisms, such as Academic Writing Assessment (AWA), play a crucial role in fostering the development of these competencies by providing systematic feedback and targeted developmental opportunities. Such assessments not only allow students to refine their writing skills iteratively but also help educators identify areas of difficulty and implement tailored instructional interventions.

Many students, however, experience significant challenges in mastering academic writing, including organizing ideas, employing appropriate academic conventions, and developing critical thinking skills within their texts. Therefore, the implementation of well-designed and systematic AWA is essential to support students in overcoming these challenges, enhancing their writing proficiency, and promoting successful academic outcomes. Moreover, AWA contributes to broader educational objectives by informing curriculum design, guiding teaching practices, and supporting institutional quality assurance, ensuring that students achieve both competence and academic integrity in their scholarly work (Barreda-Parra et al., 2023).

Despite its importance, research on AWA still faces several pressing challenges. First, there is a lack of consensus on reliable and valid assessment frameworks, as institutions often adopt diverse rubrics and criteria that limit comparability across contexts. Second, the rapid integration of digital and AI-based assessment tools raises questions about fairness, transparency, and ethical implications in evaluating student writing. Third, many existing studies are fragmented, focusing on narrow populations or contexts, which hinders the development of a holistic understanding of AWA practices.

Finally, there is an urgent need to address issues of scalability and sustainability, particularly in resource-limited institutions where implementing comprehensive writing assessments remains difficult. These challenges highlight the necessity of

mapping existing research and identifying gaps that can guide the formulation of more effective, equitable, and evidence-based AWA practices in higher education. The outcomes generated through AWA offer valuable insights that can inform instructional design, teaching methodologies, and evidence-based decision-making. Specifically, these assessments provide data that can guide curriculum development, pedagogical strategies, and policy reform in higher education. Kusmanto et al. (2024) emphasize that the results of AWA enable educators to adopt more effective instructional approaches. Strategies such as portfolio assessment and project-based learning allow students to develop writing skills through iterative practice, while feedback mechanisms—including self-assessment toolkits and peer review—further enhance writing proficiency.

Khojasteh et al. (2025) highlight the effectiveness of AI-based self-assessment tools in delivering personalized feedback and supporting students in monitoring their own progress, thereby contributing to the advancement of quality education initiatives. Furthermore, AWA plays a crucial role in upholding academic standards by ensuring that student learning outcomes align with institutional expectations. According to Sadler (2012), assessment constitutes a central component of quality assurance systems in higher education, safeguarding academic standards and maintaining the integrity of student achievement.

This study employed a bibliometric analysis, which provides quantitative insights into scholarly trends, publication patterns, and research dynamics. Such an approach facilitates the identification of leading researchers, principal areas of focus, and the temporal evolution of research themes (Dong et al., 2024). Bibliometric studies specifically addressing AWA in higher education remain limited. While prior studies, such as Jaja (2024), predominantly examined general student writing skills, Crosthwaite et al. (2022) and Sun & Lan (2023) focused on specialized contexts, including written corrective feedback for second language (L2) learners.

By contrast, this study addresses a notable gap in the literature by conducting a comprehensive examination of academic writing assessment in higher education, without restricting the analysis to specific assessment types or language contexts. Consequently, the findings provide a valuable reference for lecturers and institutions aiming to design assessments that enhance students' writing proficiency, support curriculum development, and inform policy decisions.

The primary objectives of this study are to map the publication landscape, identify thematic trends, and trace the evolution of research topics related to AWA in higher education. Additionally, the study elucidates implications for quality education, policy reform, and curriculum design, thereby offering actionable insights for educators, administrators, and other stakeholders. This article further identifies potential future research directions within AWA in higher education.

Accordingly, the study addresses the following research questions:

1. What is the publication landscape of AWA in higher education based on Scopus data from 2000 to 2025?

2. What is the thematic map and evolution of AWA research in higher education?
3. What are potential themes that can be developed in future within AWA in higher education?

## **2. Literature Review**

### **2.1. Definition of Academic Writing**

The ability to write effectively for academic purposes is an essential competency for both students and professionals in higher education. Academic writing is often described in general terms as formal writing for scholarly contexts; however, such a broad description does not fully capture its complexity. A more precise and comprehensive definition conceptualizes academic writing as a rhetorical, process-oriented, and genre-bound practice that facilitates the construction and dissemination of knowledge within a discourse community through structured, evidence-based, and critical communication. From a rhetorical perspective, academic writing is not merely the demonstration of knowledge but a purposeful act of persuasion, requiring writers to carefully negotiate the rhetorical situation by considering their audience, purpose, and context in order to communicate effectively (Hyland, 2015).

In addition, academic writing is inherently process-oriented, as it involves a recursive and non-linear cycle of drafting, revising, editing, and proofreading that emphasizes the progressive development of ideas and clarity of expression rather than a single act of composition (Kumar et al., 2020). It is also genre-bound, demanding adherence to established conventions, structures, and styles – such as research articles, essays, and reports – that are recognized and valued by specific academic disciplines, thereby enabling writers to meaningfully participate in their scholarly communities (Therova, 2023).

Moreover, academic writing serves as a medium for knowledge construction and dissemination, allowing writers to contribute to ongoing scholarly conversations by presenting original research, synthesizing existing knowledge, critiquing arguments, and advancing disciplinary understanding (Badley, 2009; Bezus et al., 2021). Finally, it is inherently evidence-based and critical, requiring writers to move beyond description to engage in analysis, synthesis, and evaluation, with all claims supported by credible evidence and sound reasoning (Al-Hammadi & Sidek, 2015). Taken together, these dimensions illustrate that academic writing extends beyond the simple adherence to linguistic and structural norms; rather, it is a cognitively demanding practice that requires the integration of complex skills to critically engage in and contribute to academic discourse.

### **2.2 Assessment of Academic Writing Strategies**

A wide range of strategies has been employed in higher education to assess academic writing and provide constructive feedback, each distinguished by its mode of implementation, demonstrated effectiveness, and inherent limitations. One of the most widely recognized approaches is the application of metacognitive strategies, which focus on the explicit instruction of planning, monitoring, and evaluating skills. Students are encouraged to engage in preparatory activities such as brainstorming and outlining prior to drafting, to monitor coherence and

argumentative strength during composition, and to conduct post-draft self-evaluations through structured checklists. Instructors play a pivotal role in facilitating these processes by modeling their own cognitive strategies and providing opportunities for scaffolded practice. Empirical research confirms the effectiveness of metacognitive training. For example, Riwayatningsih et al. (2025) found that it significantly enhanced students' clarity, coherence, and grammatical accuracy by fostering greater self-awareness and regulatory control over the writing process. However, the success of this strategy is contingent upon learners' levels of motivation and self-regulatory capacity, both of which vary considerably among students. Furthermore, implementing metacognitive instruction can be time-intensive, particularly in large classes, and requires substantial preparation and training for instructors as well as students.

A second approach is the use of integrated writing tasks, which require students to synthesize information from multiple sources, such as combining insights from reading passages and lecture materials into a single written response. These tasks foster discourse synthesis by encouraging learners to compare, contrast, and integrate diverse perspectives while simultaneously developing higher-order skills such as critical thinking and advanced self-regulation. Evidence suggests that integrated writing tasks exert a positive impact on students' academic writing performance, as they closely replicate authentic academic demands. Nonetheless, their application presents several challenges. The design of valid and reliable integrated assessments is complex, and evaluating student performance fairly can be difficult, as outcomes may reflect not only students' writing proficiency but also their reading and listening comprehension abilities.

The expansion of digital learning technologies has further contributed to the rise of technology-enhanced assessment methods. In this context, teachers play a crucial role by creating a supportive classroom environment that encourages open discussions and reflective thinking, fostering collaboration and teamwork that is essential for holistic development (Yanti et al., 2025). Teachers occupy a central position in the educational landscape, significantly influencing classroom processes, instructional practices, and learning outcomes (Tohirin et al., 2025). Given this pivotal role, their contributions extend beyond academic instruction to shaping students' character and personality, as education itself serves not only to develop cognitive abilities but also to instill moral and spiritual values (Maksum et al. 2025).

Furthermore, automated Writing Evaluation (AWE) systems—such as Grammarly or Turnitin's Revision Assistant—offer immediate feedback on grammar, syntax, style, and text organization, and are increasingly embedded within Learning Management Systems to facilitate drafting and revision. Empirical studies highlight their effectiveness in accelerating assessment and fostering student autonomy by providing instant and unlimited feedback (Parker et al., 2023; Wolf & Oh, 2024). Complementary digital tools, such as electronic note-taking platforms in both individual and collaborative formats, have also been shown to increase idea variety and promote interactive learning (Gao et al., 2025). Despite these benefits, AWE systems remain limited, as they tend to focus

primarily on surface-level features while lacking the capacity to evaluate deeper aspects such as argument quality, originality, or rhetorical persuasiveness. Over-reliance on these tools' risks encouraging superficial revisions and cannot replace the nuanced, context-sensitive feedback offered by human instructors.

Another widely practiced method is collaborative assessment through peer feedback. In this strategy, students participate in structured peer review sessions in which they evaluate one another's drafts using instructor-provided rubrics or guidelines. The effectiveness of this approach depends heavily on scaffolding, as instructors must establish clear evaluative criteria and model constructive feedback practices. Research has demonstrated that peer review not only supports the development of students' writing skills but also enhances critical thinking, as the act of evaluating others' work allows students to identify strengths and weaknesses that can be applied to their own writing (Zou et al., 2022). However, challenges remain in ensuring consistency and reliability. Feedback quality may vary when peers lack sufficient writing proficiency or training, and some students may hesitate to critique their classmates due to social or cultural norms. Likewise, learners may question the credibility of feedback provided by non-experts, limiting its perceived value.

The implementation of analytical rubrics and self-assessment toolkits has proven to be effective in increasing transparency and learner autonomy in writing assessment. Analytical rubrics provide explicit evaluative criteria across dimensions such as thesis clarity, organization, evidence integration, and language use, thereby ensuring objectivity and consistency in assessment. When paired with self-assessment toolkits, rubrics also guide students in independently evaluating their own work, fostering reflection and greater ownership of the learning process.

Empirical research indicates that rubrics enhance transparency and consistency, directly supporting the production of well-organized academic writing (Hernández et al., 2023), while self-assessment toolkits encourage personalized learning and progress monitoring (Khojasteh et al., 2025). Nonetheless, potential drawbacks must be acknowledged. Poorly constructed rubrics may reduce writing to a mechanistic exercise, where students simply attempt to meet checklist requirements rather than developing a holistic understanding of writing quality. Moreover, the reliability of self-assessment varies depending on learners' maturity and metacognitive ability, which can affect the accuracy of their evaluations.

These strategies underscore the multifaceted nature of academic writing assessment in higher education. Approaches such as metacognitive training, integrated tasks, technology-enhanced tools, peer feedback, and rubric-based self-assessment each contribute distinct advantages to the enhancement of student writing. At the same time, each method is accompanied by specific limitations, emphasizing the need for context-sensitive and balanced applications. Effective assessment of academic writing, therefore, requires an integrative approach that

combines cognitive, technological, and collaborative dimensions to best support diverse learners and promote sustainable writing development.

### **2.3. Aspects Influencing Academic Assessment**

Academic and professional achievement is closely tied to the development of advanced academic writing competencies. Among the most fundamental elements of effective academic writing are coherence and clarity. Coherence entails the logical structuring and organization of ideas, enabling readers to follow an argument seamlessly, while clarity ensures that meaning is communicated precisely and without ambiguity (Badley, 2009). Equally critical is genre awareness, which allows writers to adjust their rhetorical strategies and organizational choices in accordance with the conventions of specific academic tasks and disciplinary expectations (Therova, 2023).

The accurate and consistent use of academic language further contributes to writing quality by reinforcing precision, formality, and credibility in scholarly communication. Beyond linguistic mastery, academic writing requires the application of higher-order cognitive skills, particularly critical thinking, which encompasses the ability to analyze, evaluate, and synthesize information in order to construct well-reasoned and evidence-based arguments (Kumar et al., 2020). Another significant dimension is writing self-efficacy—students' belief in their own ability to write effectively—which influences their confidence, persistence, and capacity to identify both strengths and areas in need of improvement (Doenyas et al., 2023).

Given this complexity, the assessment of academic writing must extend beyond surface-level features to account for multiple dimensions of proficiency. Coherence and clarity serve as core indicators of writing performance, reflecting the writer's capacity to present logical and well-structured arguments that guide the reader effectively (Badley, 2009). Genre awareness likewise represents a crucial dimension, as it governs the use of conventions, structural patterns, and rhetorical strategies appropriate to specific academic contexts (Therova, 2023).

The accurate application of academic language and adherence to disciplinary norms ensure both the precision and the scholarly legitimacy of written texts. Critical thinking underpins these aspects, enabling students to transcend descriptive writing and engage in deeper forms of reasoning, such as analysis, synthesis, and the integration of evidence (Kumar et al., 2020). Finally, writing self-efficacy exerts a significant influence on performance, as it shapes students' motivation, receptiveness to feedback, and resilience in addressing cognitively demanding writing tasks (Doenyas et al., 2023). Collectively, these dimensions highlight the importance of assessment frameworks that capture the multifaceted nature of academic writing competence. Such frameworks should not only evaluate textual accuracy and linguistic form but also foster the broader cognitive and affective capacities necessary for sustained academic success.

### 3. Methods

#### 3.1. Research Design

A clear and well-defined research design is fundamental to ensuring methodological rigor and the validity of findings in addressing the research objectives (García-Gorrostieta et al., 2018). In this study, a systematic literature mapping (SLM) design was adopted, complemented by bibliometric analysis, to comprehensively examine the state of the art, prevailing trends, and potential future directions of Academic Writing Assessment (AWA) research in higher education. The SLM design provides a structured framework for systematically identifying, categorizing, and analyzing existing literature, while bibliometric techniques enable a quantitative exploration of publication patterns, citation networks, co-authorship relations, and thematic evolution over time (Aria & Cuccurullo, 2017; Santoso et al., 2025; van Eck & Waltman, 2010).

#### 3.2 Data Source and Search Query

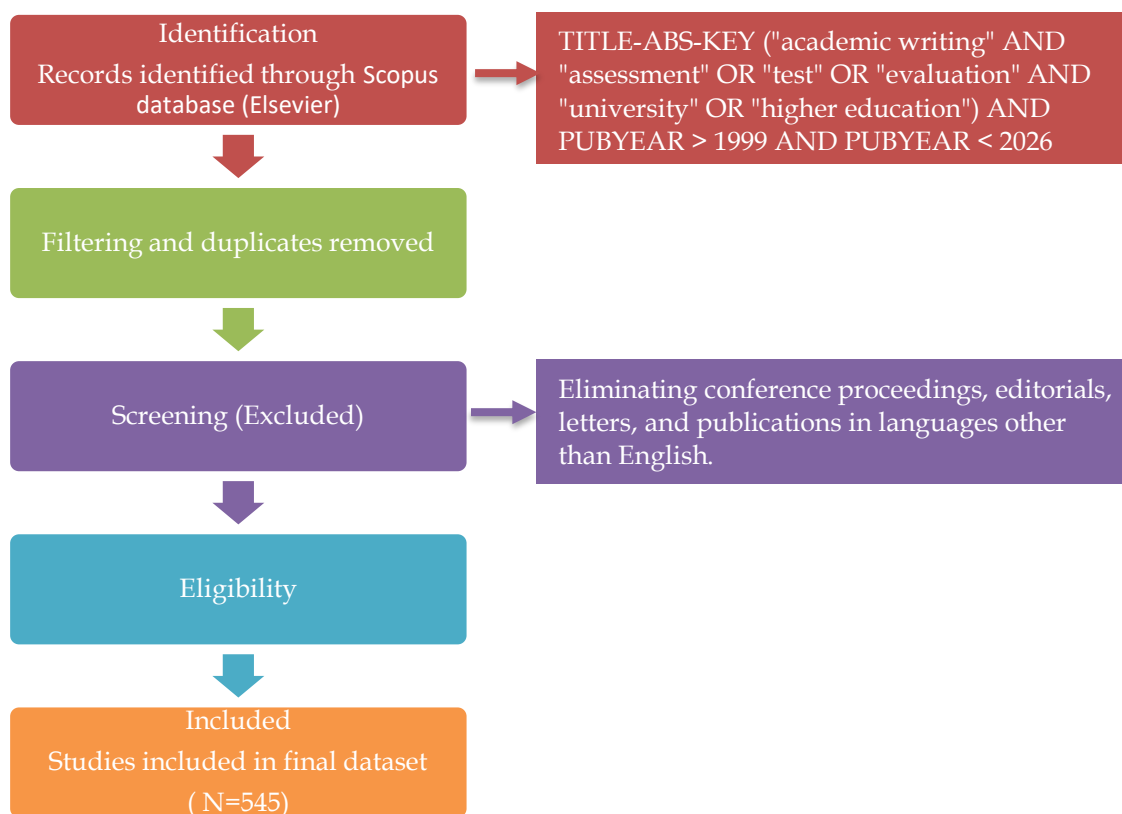
For the purposes of this study, data were retrieved from the Scopus database, a comprehensive bibliographic portal maintained by Elsevier, which indexes peer-reviewed journals, conference proceedings, and other scholarly publications across multiple disciplines. The data collection was conducted on July 31, 2025, with the objective of identifying journal articles published between 2000 and 2025. The inclusion criteria were defined based on the PRISMA framework, requiring that documents be written in English, published in their final form, and classified as peer-reviewed scholarly outputs, including articles, reviews, and short communications. The exclusion criteria eliminated conference proceedings, editorials, letters, and publications in languages other than English.

The search query applied was TITLE-ABS-KEY ("academic writing" AND "assessment" OR "test" OR "evaluation" AND "university" OR "higher education") AND PUBYEAR > 1999 AND PUBYEAR < 2026 AND (LIMIT-TO (PUBSTAGE, "final")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")). This query initially retrieved 545 documents, which were exported into a Comma-Separated Values (CSV) file for further processing. All records underwent a meticulous filtering process, including verification of publication type, removal of duplicates, and cross-checking against expert recommendations to ensure validity and relevance. Figure 1 presents the flowchart illustrating the methodology employed in this study.

#### 3.3 Data Cleaning, Analysis, and Tools

The dataset obtained for this study underwent a rigorous cleaning process using OpenRefine, which facilitated the correction of typographical errors, standardization of keyword variations, and removal of duplicate records, thereby minimizing potential sources of bias and ensuring data accuracy (Abdullah et al., 2023). Following the data cleaning phase, bibliometric analyses were performed using VOSviewer, Biblioshiny-R, and Microsoft Excel to explore publication patterns, thematic evolution, co-authorship networks, and citation impacts across the field of Academic Writing Assessment (AWA) in higher education. To quantify the scholarly influence of individual publications, the Average Citation (AC) metric was calculated using the formula  $AC = TC / TP$ , where TC represents the total number of citations and TP denotes the total number of publications (Qin

et al., 2022). To ensure the validity and reliability of the dataset, an expert review was conducted to verify the application of inclusion and exclusion criteria, confirming that only relevant, peer-reviewed scholarly outputs were retained for analysis.



**Figure 1: Flowchart illustrating the research methodology employed in this study**

## 4. Results

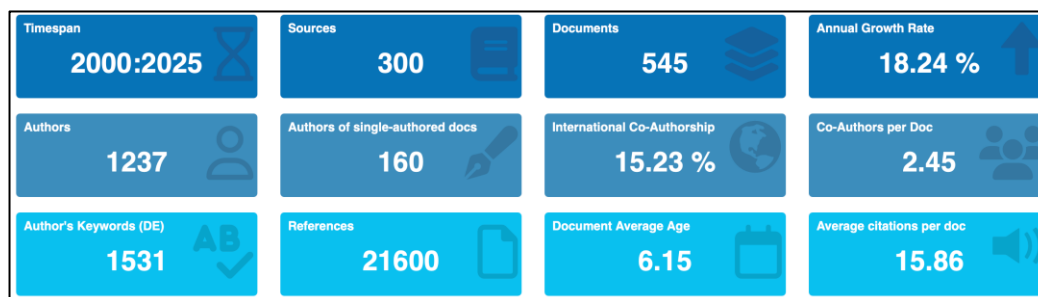
### 4.1 Publication Landscape of AWA in Higher Education

Over the past two decades, research in AWA has steadily expanded, reflecting the combined influence of technological innovation, pedagogical reform, and the internationalization of higher education. The bibliometric analysis of 545 publications on Academic Writing Assessment (AWA) in higher education offers a comprehensive perspective on the development of this scholarly field. The dataset compiled for this study captures original, peer-reviewed articles that document how academic communities have responded to challenges in assessing writing proficiency, constructing reliable frameworks, and incorporating digital tools into instructional practice.

Analysis of these publications reveals a notable shift from product-oriented models of assessment toward more dynamic approaches that emphasize formative feedback, process-based evaluation, and technology-enhanced methods. This transition illustrates how scholars have sought to align assessment practices with evolving conceptions of writing as a social, cognitive, and

communicative process. The international scope of the dataset further demonstrates the diverse ways in which educational systems worldwide have contributed to advancing knowledge in the field, particularly in addressing the demands of globalization and the digital learning environment. These collective contributions not only highlight established areas of inquiry but also point to the emergence of new research directions, including the integration of artificial intelligence, digital literacies, and culturally responsive assessment practices.

The visualization presented in Figure 2 synthesizes these findings by illustrating patterns across time, journals, and thematic categories, thereby offering an overview of how AWA research has evolved and where it is heading. Taken together, this analysis underscores the dynamic nature of AWA scholarship and provides a robust foundation for future exploration in higher education contexts.



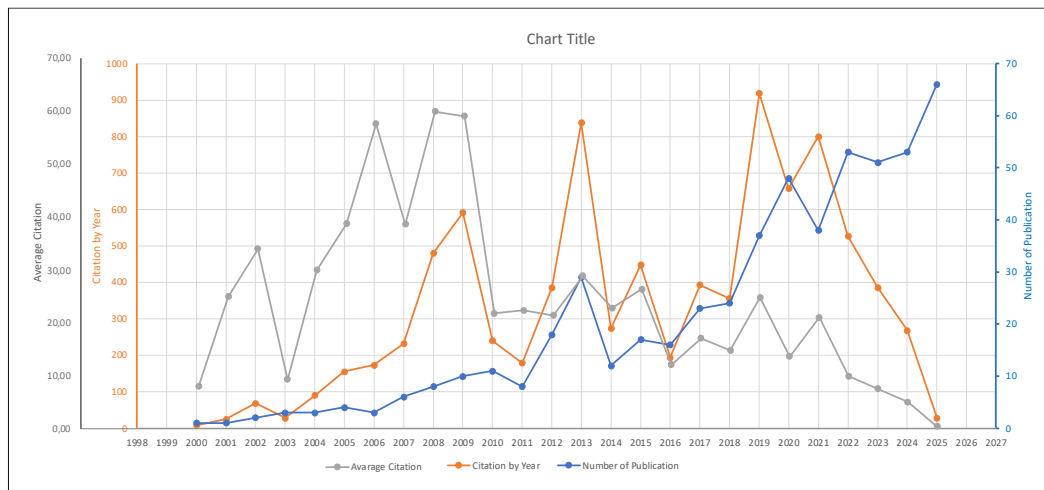
**Figure 2: General information of the overall research data**

The bibliometric analysis offers a comprehensive mapping of Academic Writing Assessment (AWA) research in higher education, encompassing 545 publications produced between 2000 and 2025 across 300 distinct scholarly sources. The field demonstrates sustained and substantial growth, as evidenced by an average annual increase of 18.24% in publication output, reflecting the expanding scholarly engagement with writing assessment over the past two decades. The corpus exhibits a mean document age of 6.15 years and collectively accounts for 21,600 references, averaging 15.86 citations per publication, thereby indicating both the intellectual vitality and the cumulative impact of research in this domain.

The breadth of thematic coverage is underscored by the presence of 1,531 author-provided keywords and 462 Keywords Plus, which collectively serve as a foundation for tracing the evolution of research foci and conceptual developments. Patterns of authorship further highlight the collaborative orientation of the field, with 1,237 contributing scholars, an average of 2.45 co-authors per publication, and 15.23% of documents involving international collaboration—demonstrating the global relevance and cross-border exchange of expertise in AWA research. Beyond measures of productivity, comparative analyses of total publications, total citations, and average citations provide insights into scholarly influence, disciplinary productivity, and emergent thematic trajectories.

These findings suggest that the growth of AWA research has been shaped by global imperatives to enhance higher education outcomes, persistent challenges

in assessing student writing at scale, and the increasing integration of digital technologies into pedagogical practice. The diverse range of keywords reflects the inherently multidisciplinary character of the field, drawing contributions from linguistics, education, psychology, and computer science, and positioning AWA as a site of intellectual convergence that continues to adapt to the evolving demands of higher education.



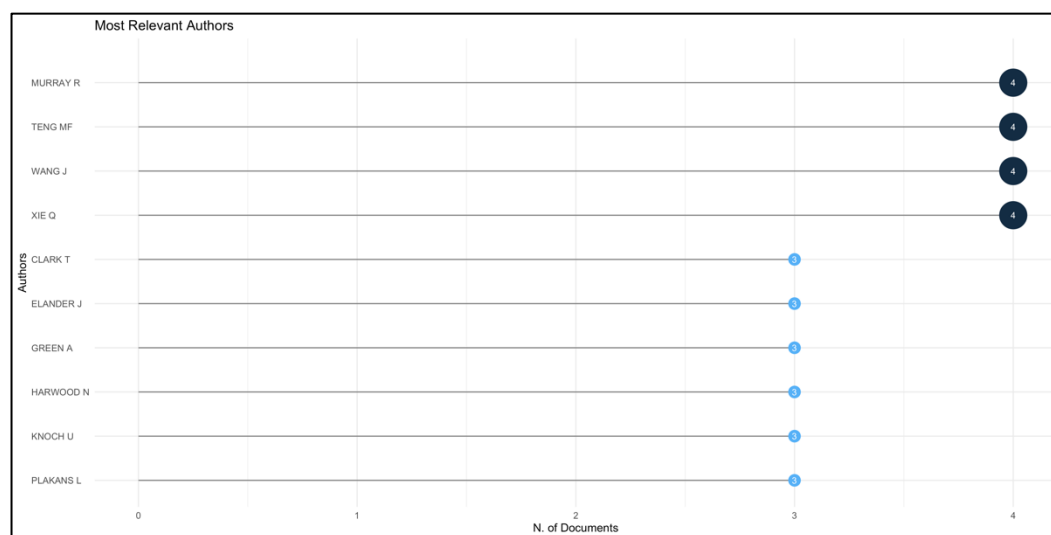
**Figure 3: Landscape of TP, TC, and AC of AWA publications in higher education**

Figure 3 presents the longitudinal patterns of total publications (TP), total citations (TC), and average citations (AC) in Academic Writing Assessment (AWA) research within higher education from 2000 to 2025, thereby providing an overview of the field's development and evolving research priorities. The data indicate a consistent increase in TP, particularly after 2010, with a pronounced surge following 2018. This trend reflects the growing scholarly engagement with AWA, coinciding with broader transformations in higher education, most notably the digitalization of teaching and learning.

The widespread adoption of Learning Management Systems (LMS), the emergence of Automated Writing Evaluation (AWE) tools such as Turnitin and Grammarly, and the increasing demand for technology-mediated feedback mechanisms have substantially influenced this growth. Additionally, the internationalization of higher education has intensified the urgency of effective AWA practices to support diverse student cohorts, especially non-native English speakers.

In contrast, TC peaked between 2012 and 2014, a period during which seminal studies on peer feedback, self-regulation, and integrated assessment tasks exerted significant influence and laid the foundation for subsequent research. The gradual decline in TC and the notable reduction in AC after 2015 should not be construed as a deterioration in research quality. Rather, these patterns can be attributed to the expansion of the field, whereby a greater volume of publications has resulted in the dispersion of citations across a wider body of work. This shift also signals a diversification of scholarly focus, with research moving from broad theoretical perspectives toward more specialized inquiries, including AI-driven assessment

technologies, discipline-specific writing evaluation, and culturally responsive pedagogical approaches. Authorship analysis further highlights the collaborative and distributed nature of AWA scholarship. No single researcher dominates the field; instead, contributions are shared among several leading scholars such as Teng and Zhang (2020), with four publications. Collectively, the findings suggest that AWA research in higher education is undergoing both expansion and diversification, driven by technological advancements, global educational imperatives, and a progressively nuanced understanding of writing assessment practices.

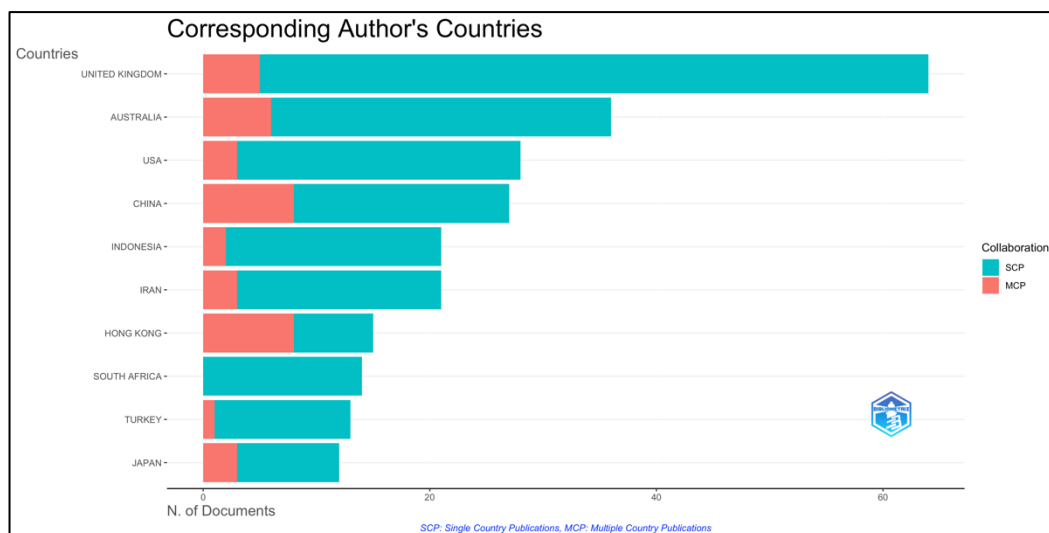


**Figure 4: Ten most productive authors on AWA in higher education**

According to Figure 4, the geographic distribution of author affiliations in Academic Writing Assessment (AWA) research reveals notable disparities in the degree of international collaboration, as reflected in the balance between Single-Country Publications (SCP) and Multiple-Country Publications (MCP). The United Kingdom stands as the leading contributor with 64 publications, although only 7.81% of these involved international collaboration, indicating a predominantly domestic research orientation. Australia, with 36 publications and an MCP rate of 16.67%, demonstrates a comparatively higher level of cross-border engagement, while the United States produced 28 publications, 10.71% of which were internationally co-authored.

Indonesia, despite contributing 21 publications, displays limited international collaboration (9.52% MCP), though its presence reflects growing regional involvement in AWA scholarship. In contrast, Hong Kong illustrates a highly collaborative profile, with 53.33% of its 15 publications co-authored across national boundaries, underscoring its role as a hub for international partnership. Other significant contributors include China (27 publications, 9.52% MCP), Turkey (13 publications, 7.69% MCP), and Japan (12 publications, 25% MCP). Conversely, South Africa's 14 publications were exclusively domestic, highlighting the absence of international engagement. These geographic patterns underscore the extent to which institutional capacity, national research agendas,

and policy frameworks shape collaborative practices in AWA scholarship. This decentralized structure suggests that the advancement of AWA research is driven by collective global efforts rather than by a small group of pioneers. Moreover, Teng and Zhang's (2020) focus on self-regulated learning within EFL contexts highlights two central currents in the field: the institutionalization of academic writing in higher education and the strategies designed to address the challenges encountered by second-language writers. Collectively, these patterns portray AWA as a globally relevant and collaboratively constructed area of inquiry that continues to evolve through the integration of diverse scholarly perspectives and research traditions.

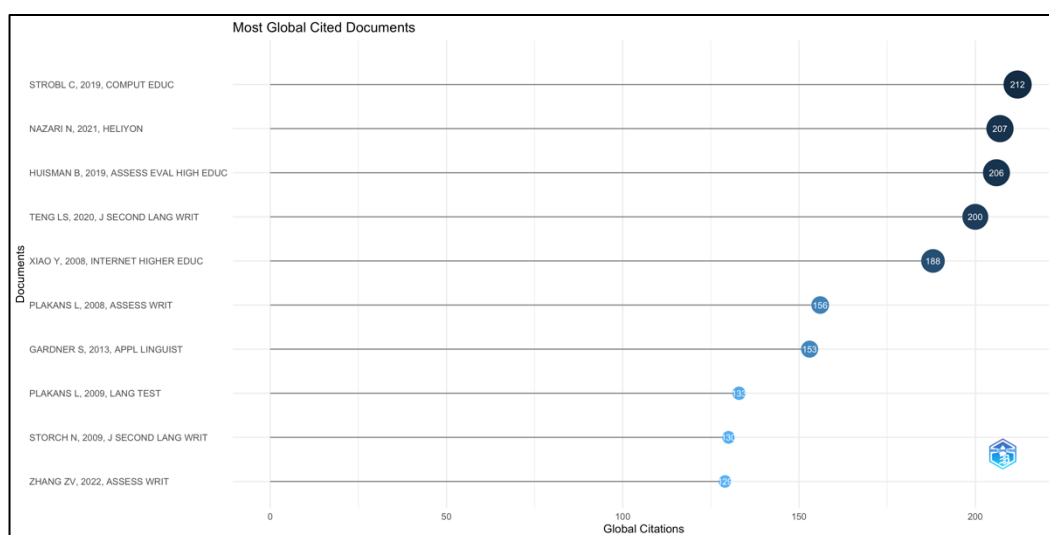


**Figure 5: Top ten countries of corresponding authors**

In addition to assessing author productivity and geographic distribution, it is crucial to examine the publications that have exerted the greatest influence on the development of Academic Writing Assessment (AWA) research in higher education. As illustrated in Figure 6, citation analysis functions as a key indicator of scholarly impact by identifying seminal works that have shaped research trajectories, introduced methodological innovations, and informed emerging themes within the field. These influential studies constitute the intellectual foundation upon which subsequent scholarship builds, offering researchers critical points of reference for advancing knowledge in AWA. When interpreted alongside geographic patterns, clear regional and national dynamics emerge.

The United Kingdom, Australia, and the United States exemplify Anglophone dominance, with consistently high publication output and notable levels of international collaboration. This reflects their long-standing investment in higher education research and their status as central hubs in the global academic network. In contrast, East and Southeast Asian countries – including China, Hong Kong, Indonesia, and Japan – display a rapidly expanding presence, largely driven by the growth of higher education systems and the increasing demands of English-medium instruction, which necessitate rigorous approaches to assessing academic writing for large populations of EFL learners. Hong Kong's exceptionally high MCP rate (53.33%) underscores its pivotal role as a bridge

between Eastern and Western scholarly communities, facilitating sustained knowledge exchange across regions. Conversely, South Africa's exclusively domestic research profile (100% SCP) highlights the localized orientation of its scholarship, likely shaped by distinctive linguistic and educational contexts that require tailored, context-specific solutions rather than international collaboration. These findings demonstrate how influential publications, national research agendas, and collaborative networks intersect to define the intellectual and geographic contours of AWA research. They underscore the field's position as both globally relevant and regionally differentiated, reflecting diverse academic traditions, institutional priorities, and pedagogical challenges.



**Figure 6: Top ten documents with the most citations**

Publications on Academic Writing Assessment (AWA) in higher education address a wide range of research variables, with several works emerging as particularly influential due to their high citation counts. As presented in Table 1, the most cited study is Strobl et al. (2019), which provides a comprehensive review of digital technologies in supporting academic writing and has received 212 citations, underscoring the central role of technology in reshaping assessment practices. Similarly, Nazari et al. (2021), with 207 citations, examines the application of artificial intelligence in digital writing assistants, reflecting the field's increasing emphasis on technologically mediated feedback and evaluation.

Other pivotal contributions include Huisman et al. (2019), which investigates peer feedback processes (206 citations), Teng and Zhang (2020), which analyzes self-regulated learning in second-language contexts (200 citations), and Xiao and Lucking (2008), which focuses on peer assessment (188 citations). Collectively, these highly cited publications extend beyond their status as widely read studies; they constitute foundational scholarship that has defined core research trajectories in AWA. Their influence lies in addressing persistent challenges such as integrating technology to enhance scalability and efficiency in assessment, embedding pedagogical strategies that cultivate learner autonomy and critical thinking, and developing genre- and task-based frameworks that capture the complexities of authentic academic writing. Complementary work by Plakans

(2009) as well as Gardner and Nesi on integrated tasks and genre families further highlights the importance of designing assessments that evaluate students' ability to synthesize sources and conform to disciplinary conventions. These influential publications provide a robust intellectual foundation for ongoing inquiry while also signaling the evolving directions of AWA scholarship. They demonstrate how technological innovation, pedagogical frameworks, and genre-based approaches collectively inform both the theoretical development and the practical implementation of academic writing assessment in higher education.

**Table 1: Top ten documents with the most citations**

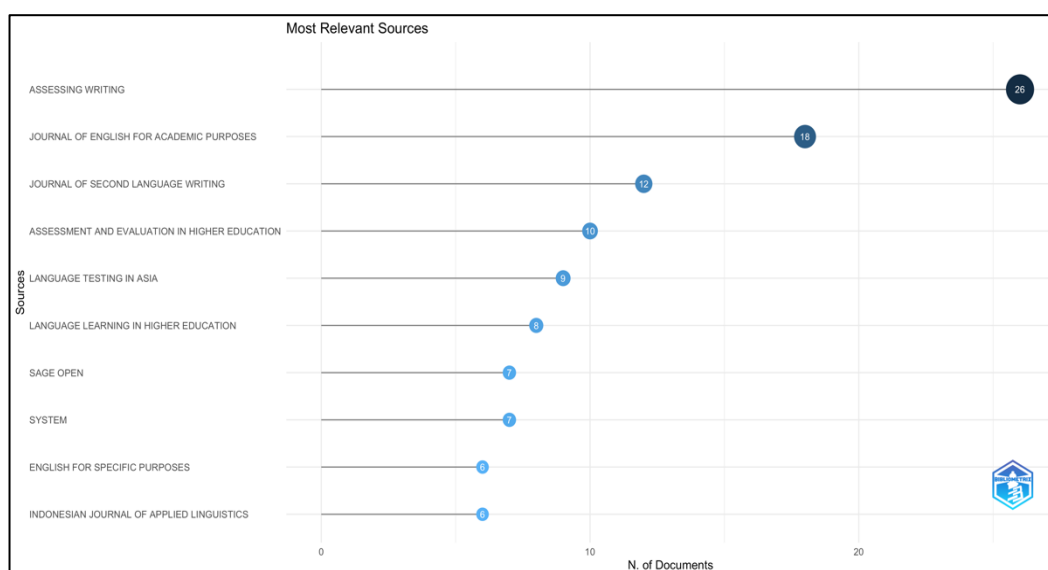
Author (Year)	Source/Quartile	Title	TC	TCY
Strobl et al. (2019)	Computers and Education/Q1	Digital support for academic writing: A review of technologies and pedagogies	212	30,29
Nazari et al. (2021)	Heliyon /Q1	Application of Artificial Intelligence powered digital writing assistant in higher education: randomized controlled trial	207	41,40
Huisman et al. (2019)	Assessment and Evaluation in Higher Education /Q1	The impact of formative peer feedback on higher education students' academic writing: a Meta-Analysis	206	29,43
Teng & Zhang (2020)	Journal of Second Language Writing/Q1	Empowering learners in the second/foreign language classroom: Can self-regulated learning strategies-based writing instruction make a difference?	200	33,33
Xiao & Lucking (2008)	The Internet and Higher Education/Q1	The impact of two types of peer assessment on students' performance and satisfaction within a Wiki environment	188	10,44
Plakans (2008)	Assessing Writing /Q1	Comparing composing processes in writing-only and reading-to-write test tasks	156	8,67
Gardner & Nesi (2013)	Applied Linguistics /Q1	A classification of genre families in university student writing	153	11,77
Plakans (2009)	Language Testing /Q1	Discourse synthesis in integrated second language writing assessment	133	7,82
Storch (2009)	Journal of Second Language Writing /Q1	The impact of studying in a second language (L2) medium university on the development of L2 writing	130	7,65
Zhang & Hyland (2022)	Assessing Writing /Q1	Fostering student engagement with feedback: An integrated approach	129	32,25

Figure 7 presents an analysis of the top ten journals most relevant to publications on Academic Writing Assessment (AWA) in higher education, revealing both concentration in specialized outlets and dissemination across broader educational platforms. Among these, *Assessing Writing* emerges as the most dominant journal, publishing 26 articles, thereby positioning itself as the central hub for advancing scholarly dialogue in this domain.

It is followed by the *Journal of English for Academic Purposes* with 18 articles and the *Journal of Second Language Writing* with 12 articles, both of which emphasize the intersection between writing pedagogy and assessment, particularly in contexts where English is used as a second or additional language. Other notable venues include *Assessment & Evaluation in Higher Education* (10 articles), *Language Testing in Asia* (9 articles), and *Language Learning in Higher Education* (8 articles), which reflect the field's expanding engagement with educational measurement, regional perspectives, and institutional practices.

Meanwhile, *SAGE Open* and *System* have contributed seven articles each, while *English for Specific Purposes* and the *Indonesian Journal of Applied Linguistics* account for six articles. The prominence of specialist journals such as *Assessing Writing* and *Journal of Second Language Writing* indicates a strong preference for venues dedicated to rigorous, discipline-specific inquiry, where methodological innovations and theoretical debates in AWA are most thoroughly examined.

At the same time, the presence of broader educational technology and assessment journals underscores the interdisciplinary relevance of AWA, situating it within wider discourses on pedagogy, evaluation, and the integration of digital tools. Collectively, these patterns highlight not only the consolidation of AWA scholarship within leading journals but also its diffusion across adjacent fields, ensuring that insights on writing assessment are both deepened within specialist circles and shared with broader academic audiences.



**Figure 7: Top ten journals publishing**

#### 4.2. Thematic Map and Evolution of AWA Research in Higher Education

Based on the thematic analysis conducted using Biblioshiny-R, the distribution of research themes was evaluated in terms of centrality and density. As shown in Figure 8, emerging and well-developed themes—such as collaborative learning, ChatGPT, artificial intelligence (AI), and academic integrity—are located in the upper-right quadrant, signifying both high relevance and substantial development within Academic Writing Assessment (AWA) research in higher education.

The prominence of AI-related themes, particularly AI and ChatGPT, underscores the rapid integration of technological innovations into educational contexts and highlights their transformative potential in reshaping pedagogical practices and supporting academic writing processes. Core themes—including academic writing, higher education, and assessment—are positioned in the lower-right quadrant, reflecting their centrality and enduring significance to the field, albeit with a comparatively slower developmental trajectory than technology-driven topics.

Themes indicating growth or decline, such as Grammarly, international students, and college students, appear in the lower-left quadrant, suggesting shifting or diminishing scholarly attention. In contrast, themes including nursing, university, and IELTS are situated in the upper-left quadrant, representing areas of notable development but with limited general relevance, as their contributions remain largely confined to specific subfields. The thematic map in Figure 8 provides a comprehensive visualization of the intellectual structure of AWA research in higher education. It demonstrates how emerging technological innovations intersect with enduring pedagogical concerns while also revealing the existence of specialized, context-specific lines of inquiry.

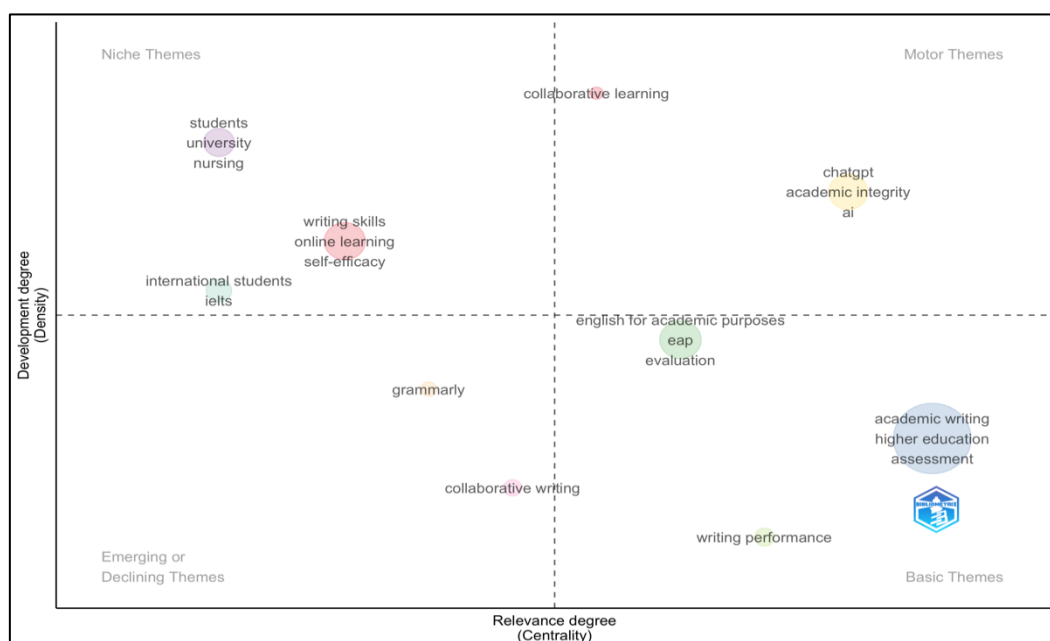
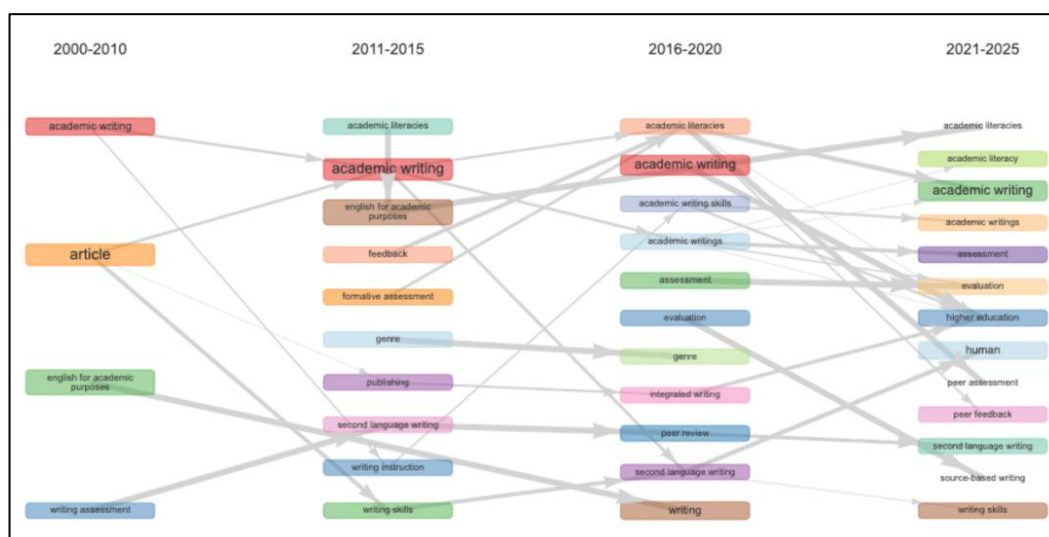


Figure 8: Thematic map of AWA in higher education

The following analysis traces the evolution of research themes in Academic Writing Assessment (AWA) within higher education over the period 2000 to 2025. The findings indicate significant shifts in both thematic focus and research approaches across successive phases. Between 2000 and 2010, scholarly work primarily concentrated on foundational themes such as academic writing, writing assessment, articles, and English for academic purposes. During the subsequent period (2011–2015), increasing attention was directed toward academic literacies, feedback, and formative assessment, accompanied by the growing prominence of topics such as publishing and second language writing.

From 2016 to 2020, research emphasis expanded toward broader concerns with assessment and evaluation, reflecting heightened interest in systematic approaches to measuring writing competence. In the most recent phase (2021–2025), source-based writing has emerged as a key theme, underscoring evolving scholarly discussions on the integration of evidence-based writing practices and their implications for academic skill development. This thematic progression highlights the dynamic and adaptive nature of AWA scholarship in higher education. A visual representation of this intellectual trajectory is presented in Figure 9.



**Figure 9: Thematic evolution of AWA in higher education**

#### 4.3. Potential Themes Related to AWA in Higher Education for Future Research

The analysis of potential research themes was conducted with reference to prevailing scholarly trends. Using VOSviewer, the study examined author-supplied keywords related to Academic Writing Assessment (AWA) in higher education, tracing their development from the earliest publications to the most recent contributions. This approach enables the identification of emerging topics, recurrent concepts, and shifts in the focus of scholarly inquiry within the field. The resulting visualization illustrates the distribution and frequency of author keywords, offering a comprehensive overview of thematic trends in AWA research in higher education.



## 5. Discussion

### 5.1 Landscape of AWA Publications in Higher Education

The notable increase in the number of publications related to Academic Writing Assessment (AWA) in higher education reflects the growing recognition of its significance across diverse higher education contexts. The scope of AWA extends beyond communication and linguistic proficiency; it also serves as a primary means of demonstrating critical thinking skills, scientific argumentation, and comprehension of course content (Kusmanto et al., 2024; Olivier, 2022).

AWA is closely associated with academic achievement in higher education (Al-Hammadi & Sidek, 2015; Callies et al., 2013), and the structure of curricula across disciplines necessitates proficiency in academic writing, not only within language-focused programs. For instance, Bolsunovskaya and Rymanova (2020) investigated the challenges faced by engineering students in academic writing, while Borglin and Fagerström (2012) evaluated academic writing among nursing students.

The analysis of Total Publications (TP), Total Citations (TC), and Average Citations (AC) did not reveal a linear relationship. While TC showed a relative increase over time, TP and AC have decreased in recent years, suggesting that recent AWA research in higher education has exerted a comparatively lower impact on scientific development. The peak in publications occurred in 2025, with 66 articles; however, TC totaled only 28 and AC was 0.42, which is understandable given that the publications were less than a year old.

Comparable trends have been observed by Abdullah et al. (2023), who noted that TP growth does not necessarily correlate linearly with TC or AC. The highest TC was recorded in 2019, with 918 citations, primarily driven by two highly cited documents: Strobl et al. (2019) and Huisman et al. (2019). Strobl et al. (2019) reported that digital tools for supporting the academic writing genre of research articles were not yet widely available, although they could assist with micro-level writing tasks such as spelling and grammar.

Huisman et al. (2019) concluded that feedback from peers and instructors enhances academic writing skills more effectively than self-assessment, emphasizing the value of collaborative engagement. Consequently, collaborative learning methods have been shown to significantly improve students' academic writing competencies (Collett & Dison, 2019; Indriani et al., 2025; Tonogbanua, 2018).

An analysis of authors' countries of origin indicates that nations with less developed international academic networks, such as South Africa, predominantly focus on internal collaboration in AWA research, whereas countries with robust academic networks, including Hong Kong, Japan, Australia, and the USA, demonstrate higher Multiple Country Publications (MCP). These patterns suggest that AWA in higher education is a global concern that benefits from international collaboration to gain a comprehensive understanding of the field.

The last, the analysis examined the journal sources most influential in publishing AWA research within higher education. The journals with the highest number of publications are *Assessing Writing* (26 articles), *Journal of English for Academic Purposes* (18 articles), and *Journal of Second Language Writing* (12 articles). These journals primarily focus on academic writing, language (particularly English), and education, reflecting the core domains of AWA research. For instance, a study by Teng and Ying (2023), published in *Assessing Writing*, investigated the role of self-regulated writing strategies and self-efficacy in mediating the effects of task complexity on academic writing performance. Such factors continue to be central to scholarly discussions aimed at improving academic writing skills in higher education contexts.

## **5.2 Thematic Map and Evolution of AWA Research in Higher Education**

A thematic map analysis of research on Academic Writing Assessment (AWA) in higher education indicates a rapid growth in the presence of artificial intelligence (AI), as evidenced by the emergence of keywords such as ChatGPT, AI, and academic integrity. Numerous studies have examined the relationship between AI and academic writing, largely due to students' positive perceptions of AI.

Students perceive AI as facilitating academic writing (cognitive factor) and are optimistic about the quality of AI-generated outputs, which can contribute to high-quality academic writing (emotional factor) (Cui, 2025). However, research also indicates that while AI can enhance academic writing performance, it may negatively affect students' critical thinking skills (Moorhouse et al., 2025). In response to these concerns, Gralha and Pimentel (2024) recommend using the Gotcha GPT application to detect AI-assisted writing, thereby safeguarding academic integrity.

Basic themes such as academic writing, higher education, and assessment require ongoing transformation in the context of AWA research. Studies emphasize that AWA should encompass both process- and outcome-based assessments, with authentic assessment playing a critical role in developing student skills and providing meaningful data for curriculum improvement (Sparks et al., 2014). Moreover, the goal of AWA in universities should be to cultivate capable graduates. Kyle (2020) asserts that academic writing necessitates the ability to critically evaluate texts and synthesize knowledge from multiple sources.

A thematic examination of AWA's evolution reveals notable transitions across periods. Between 2011 and 2015, new themes such as academic literacies and genre emerged. Wingate (2012) highlights that genre-based learning helps students comprehend field-specific written materials, providing a foundation for increased reading and writing engagement. From 2016 to 2020, research emphasis shifted toward assessment and evaluation.

For instance, Ma (2019) investigated the impact of individual consultation (IC) on students' thesis and dissertation completion, focusing on student feedback and experiences. In the most recent period (2021–2025), no entirely new themes emerged; rather, existing themes from previous periods evolved. The predominant themes during this period—higher education, evaluation, and

academic writing—reflect continuity in the field while highlighting ongoing refinements in research focus.

### **5.3 Potential Research Themes for AWA in Higher Education in the Future**

Recent research on Academic Writing Assessment (AWA) in higher education indicates a growing alignment with technological integration. Themes that emerged between 2012 and 2019, such as evaluation, writing, academic literacies, and peer feedback, have largely phased out over the past three years. In contrast, new themes have emerged in the 2023–2025 period, including ChatGPT, artificial intelligence, automated writing assessment, and writing performance.

Changes in assessment strategies have been particularly pronounced since 2020. Conventional approaches, previously represented by evaluation and peer feedback, have been supplanted by automated writing assessment, reflecting a shift toward more efficient and participatory assessment methods. The rise of online learning, accelerated by the COVID-19 pandemic, has contributed to the increasing use of automated writing evaluation (AWE). According to Woodworth and Barkaoui (2020), AWE not only simplifies instructors' workloads but also provides highly accurate assessments of student writing.

The increasing adoption of AWE can be better understood through the lens of process-oriented writing pedagogy and Assessment for Learning (AfL) frameworks. Process-oriented pedagogy emphasizes the iterative nature of writing, where drafting, feedback, and revision are integral to developing students' cognitive and metacognitive skills (Kyle, 2020). AWE tools, when integrated effectively, provide timely formative feedback, aligning with AfL principles that assessment should support learning rather than merely measure it.

However, as studies indicate, reliance solely on automated feedback may insufficiently foster higher-order skills such as critical thinking (Moorhouse et al., 2025). By explicitly linking AWE use to these pedagogical frameworks, educators can design interventions that leverage the efficiency of automated assessment while maintaining opportunities for reflective, analytical engagement, thereby enhancing both writing proficiency and cognitive development.

A relatively enduring and consistent theme is critical thinking, demonstrating that academic writing is recognized not only as a language skill but also as a higher-order cognitive competency. Kafri (2022) emphasizes the importance of critical thinking in higher education and identifies academic writing courses as ideal settings for fostering such skills. This relationship is further corroborated by Teng and Yue (2023), who highlight that critical thinking and metacognition facilitate the successful completion of academic writing tasks. Accordingly, critical thinking remains a highly relevant theme for enhancing academic writing competencies.

Another significant theme is higher education, which appears frequently ( $n = 55$ ) in the literature. This underscores that academic writing is not merely an academic skill but also a component of work readiness and professional competency,

cultivated through higher education (Kyle, 2020; Sparks et al., 2014). The involvement of AI in academic writing represents a prominent area for future research. Two emerging keywords in 2023–2024—ChatGPT and artificial intelligence—demonstrate significant attention, with ChatGPT occurring 16 times, reflecting renewed interest in the influence of generative AI on academic writing and its assessment.

This trend raises important considerations regarding ethics, originality, and the role of technology in supporting—or potentially undermining—the writing process. Research by Moorhouse et al. (2025) indicates that while AI can enhance the quality of students' writing, it may concurrently weaken critical thinking skills. Consequently, further research is needed to develop strategies that mitigate the negative impacts of AI on academic writing, including the use of detection applications or pedagogical interventions designed to maintain academic integrity.

## 6. Conclusion

This study aims to investigate the publication trends, thematic development, and future directions of Academic Writing Assessment (AWA) research in higher education, with a particular focus on identifying emerging themes and informing educational practice. Based on a bibliometric analysis of 545 Scopus-indexed journal articles published between 2000 and 2025, the findings reveal a significant increase in AWA-related publications since 2010, with a pronounced surge after 2018.

The analysis indicates that “academic writing,” “higher education,” and “assessment” remain the central themes, while emerging topics such as “ChatGPT,” “artificial intelligence,” “academic integrity,” and “collaborative learning” reflect a paradigm shift toward integrating technology, ethics, and critical thinking in academic writing assessment. Thematic mapping suggests that AWA research has evolved from merely evaluating written products to emphasizing writing processes, technological integration, and higher-order cognitive skills.

This study provides significant theoretical contributions by mapping the evolution of Academic Writing Assessment (AWA) research in higher education, identifying emerging themes, and highlighting shifts from traditional assessment methods to technology-integrated and process-oriented approaches. Its practical contributions include offering actionable insights for educators and higher education institutions to design more effective assessment strategies, integrate AI and digital tools responsibly, enhance students' critical thinking and metacognitive skills, and inform curriculum development and policy reform related to academic writing instruction. Limitations include the exclusive use of Scopus-indexed English-language articles and a reliance on quantitative bibliometric methods, which may not fully capture qualitative nuances. Future research is recommended to explore the impact of AI-based writing tools, such as ChatGPT and automated writing evaluation (AWE) systems, on writing quality, originality, and ethical considerations. Additionally, studies should develop

assessment models that balance process-oriented evaluation, outcome assessment, metacognitive and affective dimensions, and the effective implementation of technological tools, complemented by qualitative approaches and broader data sources such as ERIC and Web of Science.

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