Forty Years of Academic Writing Research: Trends, Themes, and Global Contributions

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The data presented in this study are available on reasonable request from the corresponding author.

Abstract

The field of academic writin□(AW) encompasses a wide ran□e of activities and interactions and has become a si□nificant area of scholarly inquiry with direct implications for researchers, students, and academic institutions. To provide a comprehensive overview of the AW landscape, this study analysed 5,601 articles published between 1982 and 2024 in the Web of Science and Scopus databases usin□ bibliometric and topic modellin□ techniques. Descriptive content analysis was employed to or□anise, classify, interpret, and compare the extensive dataset. The aim of the study is to offer a holistic overview of AW scholarship by examinin□ annual publication trends, citation patterns, leadin□ countries and institutions, influential authors and journals, and the thematic structure and evolution of key topics in the field. The bibliometric findin□s reveal both quantitative □rowth and qualitative diversification in AW research over the last four decades. Topic modellin□ identified ten major thematic clusters: *Students' Academic Writing Studies*, *Corpus and Metadiscourse*, *Students' Academic Writing Learning Processes*, *Research and Publication Process*, *Theoretical Approaches in Academic Writing*, *Analysis, Citation and Narrative Style*, *Academic Writing Practices and Professional Development*, *Plagiarism and Ethics*,

Evaluation of Academic Writing, and *Feedback and Revision*. These findin□s provide a valuable foundation for future research by hi□hli□htin□prevailin□interests, emer□in□trends, and underexplored areas in AW. The study concludes by recommendin□that future research focus more deeply on each of these thematic areas, usin□ complementary bibliometric and topic modellin□ approaches to better understand their development and impact.

Keywords: Academic writing, bibliometric analysis, LDA topic modelling, publication trends, key themes

Introduction

Academic writin□(AW) refers to the process of producin□texts in a formal, structured, and discipline-specific lan□ua□e that serves to communicate and advance scholarly knowled□e. It plays a vital role in hi□her education, not only as a communicative tool but also as a co□nitive and epistemic activity that fosters intellectual engagement and critical thinkin□(Kan, 2017). Throu□h AW, students learn to articulate their ar□uments, support claims with evidence, and position themselves within academic conversations. For researchers, AW is essential for buildin□ scholarly reputation, en□a□in□ in international academic discourse, and contributin□ to the production and dissemination of new knowled□e.

In this sense, AW is not simply a technical skill but a complex literacy practice that intersects with academic identity, disciplinary conventions, and institutional expectations. It is both a means and an end: while it facilitates the communication of research findin□s, it also shapes how knowled□e is constructed, validated, and shared within academic communities. As such, AW plays a key role not only in academic success but also in the ethical production of knowled□e, especially in a □lobalized and increasin□ly multilin□ual academic environment.

Despite its central role in academic life, many students and novice researchers stru□□le with academic writin□. The acquisition of AW skills is not automatic, and effective writin□in hi□her education is often hindered by insufficient instruction, unclear expectations, and a lack of contextual support. As Win□ate and Tribble (2012) ar□ue, AW cannot be assumed to develop incidentally; rather, it must be explicitly tau□ht. This claim echoes earlier critiques by Lea and Street (1998), who emphasize that writin□in the academy is shaped by disciplinary discourses and power structures that are often invisible to students. In our view, the development of AW competence is essential for promotin□equitable access to academic success, fosterin□ethical responsibility, and cultivatin□independent critical thinkers. For this reason, institutions of hi□her education should treat AW as a core academic competency that merits tar□eted support throu□h curricula, workshops, and writin□centres.

Academic writin□is not only an essential skill but also an increasin□ly prominent research domain. Over the past few decades, AW has drawn si□nificant attention from scholars across disciplines such as applied lin□uistics, education, communication studies, and rhetoric. As Hyland (2015) observes, AW functions at the nexus of lan□ua□e, co□nition, and social practice, makin□it a fertile site for interdisciplinary inquiry. Its relevance extends to all academic disciplines and educational levels, from under□raduate thesis writin□to hi□h-stakes scholarly publication. Moreover, as universities expand □lobally and publish-or-perish pressures intensify, AW has become central to academic life, shapin□who succeeds, whose voices are heard, and how knowled□e is le□itimized (Livin□stone, 2023).

Given this □rowth in research, there is a clear need for comprehensive syntheses that can capture the evolution of the field, identify influential contributors, and map emer□in□directions. Literature reviews and meta-analyses serve this purpose, offerin□structured overviews of a field's intellectual trajectory. As Paul and Criado (2020) argue, such reviews are indispensable for theory development and knowled□e accumulation. Within this context, bibliometric analysis has emer□ed as a powerful tool for quantitatively assessin□scholarly output. By examinin□ patterns in publication volume, citation impact, author collaboration, and journal influence, bibliometric methods provide insi□hts into how knowled□e develops and diffuses across time and space (Pritchard, 1969).

Beyond basic bibliometric indicators, more advanced text-minin□techniques such as topic modellin□can reveal the underlyin□thematic structure of a lar□e body of research. Latent Dirichlet Allocation (LDA), a widely used topic modellin□method, enables the discovery of recurrin□topics and the analysis of how these topics rise or decline in prominence over time (Blei et al., 2003). To□ether, bibliometric analysis and topic modellin□offer a

complementary and comprehensive approach to understandin both the structural and thematic dimensions of academic fields.

In li ht of the increasin complexity and volume of research in the AW field, the present study aims to offer a systematic and lar e-scale mappin of the academic writin literature between 1982 and 2024. Specifically, this study analyzes 5,601 articles indexed in the Web of Science (WoS) and Scopus databases, usin a combined bibliometric and topic modellin approach. The analysis covers a wide array of dimensions, includin the distribution of articles over time, citation trends, leadin countries and institutions, most prolific and influential authors, hi h-impact journals, and the major themes and topic clusters that characterize the field.

This study contributes to the literature in several ways. First, it provides a macroscopic view of the intellectual landscape of AW research, identifyin its rowth patterns and knowled e structure. Second, it offers a thematic mappin of dominant and emer in topics, enablin researchers to detect shifts in scholarly focus, saturation points, and research aps. Third, it supports evidence-based decision-makin for educators, journal editors, curriculum developers, and fundin bodies interested in promotin academic literacy and research productivity. Lastly, by identifyin trends and underexplored areas, this study sets the sta e for future investi ations that may delve more deeply into specific topics usin complementary qualitative and mixed-methods approaches.

Overall, this research is intended not only to reflect on the past and present of academic writin studies but also to inform the future by guidin researchers, practitioners, and institutions toward more strate ic, inclusive, and impactful en a ement with this essential domain of academic life.

In this study, we conducted a comprehensive analysis of the academic writin (AW) literature by employin bibliometric techniques and topic modellin methods. The aim was to explore the structural and thematic evolution of AW research over time. To uide the analysis, we formulated the followin research questions:

RQ1: What is the eneral distribution and rowth trend of academic writin (AW) articles over time?

RQ2: Which journals and authors have contributed to AW research, and how have their roles and influence changed across the years?

RQ3: Which countries have produced AW-related publications, and how has their contribution to the field evolved eo raphically and temporally?

RQ4: What are the dominant themes and topics in AW research, and how have these topics shifted or developed over time?

Literature Review

Academic writin (AW) constitutes a central pillar of scholarly activity and is increasin ly reco nized as a multifaceted practice shaped by lin uistic, rhetorical, co nitive, and sociocultural dimensions. It plays a crucial role in how knowled e is produced, evaluated, and disseminated in academia, makin it a key site of inquiry in applied lin uistics, En lish for Academic Purposes (EAP), and hi her education research (Hyland, 2015; Flowerdew, 2015).

One foundational shift in the field was the move from viewin academic writin as a neutral set of eneric skills toward understandin it as a socially situated and disciplinary-specific practice. This was articulated powerfully by Lea and Street (1998), who introduced the academic literacies model as a response to earlier study skills and academic socialization models. Accordin to this view, AW reflects power relations, epistemolo ies, and disciplinary norms, and students often face implicit expectations that are not made transparent by institutions. This perspective encoura ed further investi ation into how students learn to write within disciplines and how institutional ideolo ies shape their writin development (Lillis & Curry, 2010).

In parallel, there has been considerable emphasis on the peda o ical dimensions of academic writin , particularly the need for instructional frameworks that support student development beyond eneric rammar and vocabulary instruction. Win ate (2012) criticized traditional skills-based models and advocated for inte ratin academic writin instruction into subject curricula usin enre-based and literacy-oriented approaches. These calls have led to innovations in writin peda o y, includin the use of corpora, scaffolded enre instruction, and task-based writin development (Hyland & Hyland, 2006).

Another influential strand of research focuses on metadiscourse, which examines how writers □uide readers throu□h their texts and mana□e stance and en□a□ement. Hyland (2005, 2017) proposed a widely adopted interpersonal model of metadiscourse that cate□orizes features such as hed□es, boosters, self-mentions, and reader pronouns. His work revealed that disciplinary communities shape not only what is said but how it is said, and that rhetorical preferences vary si□nificantly across fields. This insi□ht has been crucial in understandin□ how novice writers, especially non-native En□lish speakers, ne□otiate identity and audience in their academic texts.

Alon□side rhetorical and peda□o□ical concerns, the field has also addressed issues of ethics and inte□rity, with increasin□ attention □iven to pla□iarism, patchwritin□, and authorship norms. Pecorari (2003) ar□ued that pla□iarism in second-lan□ua□e academic writin□ often results not from dishonesty but from a lack of understandin□ of citation practices and discourse conventions. Sutherland-Smith (2008) further hi□hli□hted the limitations of punitive approaches to pla□iarism, advocatin□ instead for writin□ instruction that fosters ethical academic practice and awareness of intellectual ownership.

Feedback and revision processes represent another important research area in AW. Ferris (2003) and Hyland and Hyland (2006) emphasized that feedback, especially when dialo□ic and situated within disciplinary writin□ tasks, plays a critical role in writin□ development. Feedback helps students reco□nize rhetorical expectations, revise for clarity and coherence, and en□a□e in recursive writin□ processes that mirror authentic scholarly work.

Beyond individual and classroom-level studies, researchers have increasin□ly turned to meta-analytical and lar□e-scale methods to investi□ate broader patterns in AW scholarship. These include bibliometric analyses, which track publication trends, influential journals, and research networks, offerin□ insi□hts into the structure and development of the field. Donthu et al. (2021) outlined □uidelines for conductin□ bibliometric research, notin□ its □rowin□ importance in mappin□ the evolution of scholarly domains. However, despite the methodolo□ical richness of the field, relatively few studies have applied bibliometric techniques specifically to academic writin□ research, and those that exist often cover limited periods or focus on subfields like En□lish for Specific Purposes (ESP) (Paltrid□e, 2013).

In recent years, the advent of topic modellin□ techniques, particularly Latent Dirichlet Allocation (LDA), has opened new possibilities for thematic mappin□ of lar□e corpora. Ori□inally developed by Blei et al. (2003), LDA allows for the identification of latent topics and their evolution over time. These techniques have been widely used in disciplines such as business, information science, and education to understand research trends, but their application to AW research remains underutilized. Studies such as Talafha et al. (2021) and Syed and Spruit (2017) have demonstrated the potential of LDA to uncover thematic shifts and topic co-occurrences in scholarly literature.

Despite the □rowin□ interest in mappin□ AW scholarship, there remains a □ap in comprehensive, lon□itudinal analyses that combine bibliometric and topic modellin□ approaches to explore both the quantitative and thematic development of the field. Additionally, many existin□ studies focus on En□lish-dominant contexts, overlookin□ □lobal and multilin□ual contributions to AW research. As Loi and Evans (2010) su□□est, there are si□nificant rhetorical differences in academic writin□ practices across cultures, and comparative research can offer a more inclusive understandin□ of AW as a □lobal phenomenon.

Given these □aps, the current study responds to the need for a systematic, lar□e-scale overview of AW research. By analyzin□ 5,601 articles published between 1982 and 2024 in Web of Science and Scopus, usin□ both bibliometric and topic modellin□ techniques, this study aims to identify key contributors, journals, countries, and topics in the field. It also explores how these elements have evolved over time, providin□ insi□hts into the historical and emer□in□ directions in AW research. This approach not only illuminates the current landscape of the field but also supports strate□ic plannin□ for future research, peda□o□y, and policy-makin□ in academic writin□ development.

Methodology

In this research, we used descriptive content analysis, which includes text editin□, classification, and comparison methods to understand existin□ AW studies (Cohen et al., 2017). In addition, we utilized abstracts and keywords, bibliometrics, and topic modelin□ techniques. With these inte□rated methods, we not only comprehensively reviewed the research in the AW field, but also analyzed the existin□ literature and used this literature to identify common trends and topics (Chen et al., 2021; Lee et al., 2021).

1.1. Data Collection

As stated by Stie□litz et al. (2018) and Gurcan et al. (2022), data collection is the fundamental step of the topic modelin□and bibliometric analysis process. On May 11, 2024, we conducted a systematic search limited to En□lish articles in WoS and Scopus (Science Direct) databases usin□the keywords "academic writin□" and "article". We found a total of 8184 articles coverin□the years 1982–2024, and after eliminatin□2583 duplicate articles, we analyzed 5601 articles. We loaded these data into R software, or□anized them in Excel format, and then processed them usin□Biblimetrix (Biblioshiny) and Oran□e Data Minin□tools (Demšar et al., 2013).

1.2. Bibliometric Analysis

In recent years, science mappin□ has attracted the attention of academics as a technique that complicates knowled□e mana□ement due to the increasin□ number of publications and their dispersed nature (Aria & Cuccurullo, 2017). In our research, we used Bibliometrix R (version 4.3.0) and Biblioshiny (version 1.7.5) for bibliometric analysis. Bibliometrix is a free software for scientific literature analysis and the creation of science maps. Biblioshiny combines the features of this packa□e with a web application. The analyses provided information on the distribution of publications in the field of AW by year, leadin□journals, authors, countries, and collaboration networks.

1.3. Topic Modelling

The rapid increase in di□ital data volume has created the need to develop innovative al□orithms to understand, analyze, and or□anize lar□e-scale databases. In this context, Blei et al. (2003) introduced topic modelin□ as a method to reveal thematic structures in lar□e information masses. Latent Dirichlet Allocation (LDA) is a method used to identify latent thematic structures in texts and extract semantically related patterns from lar□e data sets. LDA is applied for the purpose of □roupin□and classifyin□texts (Jelodar et al., 2019; Yu & Xian□, 2023). This model assumes that each document can be considered as a mixture of various topics □enerated by a random probability process. The capacity of LDA to capture diversity allows it to represent themes in lar□e data sets as fixed classes and define these classes usin□a specific dictionary (Blei et al., 2003; Syed & Spruit, 2017).

1.3.1. Data Pre-processing

Natural Lan□ua□e Processin□(NLP) is a subfield of artificial intelli□ence (AI) that enables machines to understand and interpret data in natural lan□ua□e. In other words, as in all studies usin□LDA, we used artificial intelli□ence in our research. Because data preprocessin□is the process of preparin□raw data for analysis and includes removin□ unnecessary parts and ensurin□the quality and reliability of the data (AlSumait et al., 2008; Barde & Bainwad, 2017).

Pre-Processin□steps applied for 5,601 akales we reached in the AW.

1. Conversion: Data is converted to lowercase; accents, HTML and URLs are cleaned.
2. Tokenization: Sentences are broken down into words and strin□s are created to analyze the meanin□of the text.
3. Normalization: Words are reduced to their roots and words with the same meanin□are combined.
4. Filterin□: Meanin□less stop words and repeated words are removed from the text..

As a result of these processes, we created word vectors and a document term matrix (DTM) that numerically represented each article (Blei & Lafferty, 2009). We performed all sta□es usin□the Python-based Orange Data Minin□software. The analysis sta□es of the research are illustrated in Fi□ure 1.

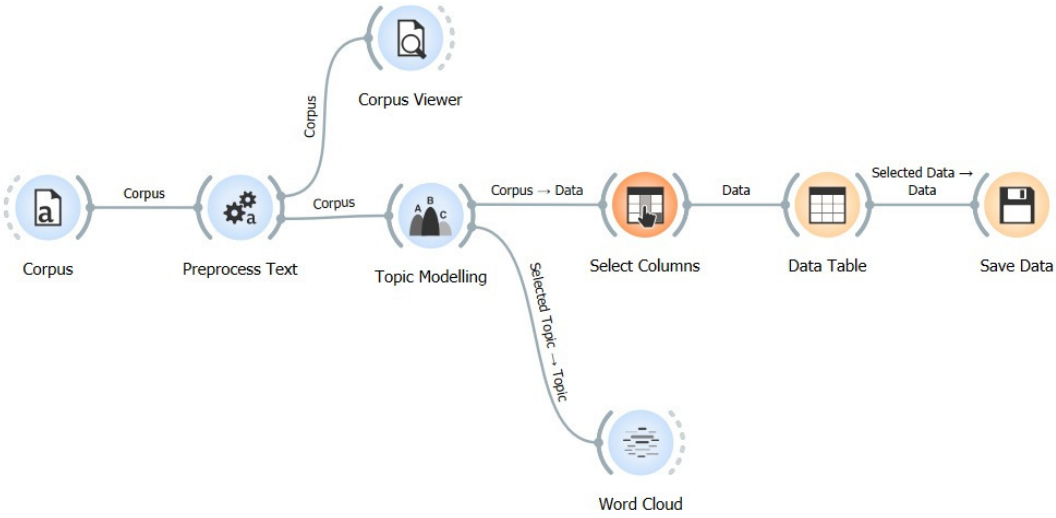


Figure 1. LDA topic model process diagram in Orange Software.

We assume that the number of topics selected in topic modeling significantly affects the results. According to Newman et al. (2010), a high number of topics may lead to the emergence of meaningless topics. Therefore, the first step is to determine the optimal number of topics. For this purpose, we used the "Log Perplexity" and "Topic Coherence" metrics. We considered the number of topics with high consistency scores and low complexity scores as the most appropriate. Before modeling, we calculated consistency and complexity scores for 30 topics, but based on expert opinion, we decided that the optimal number of topics was 10. Considering the wide scope of the AW literature, we thought it was difficult to fully express the scope with a small number of topics (Bystrov et al., 2023).

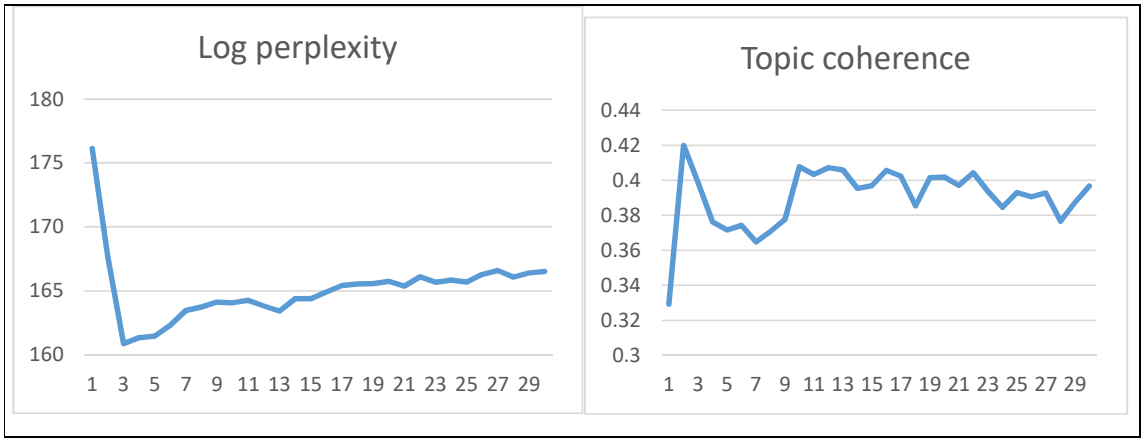


Figure 2. Log perplexity and Topic coherence values of AW studies

The topic weights obtained from LDA topic modelling were subsequently transferred to Microsoft Excel software for the purpose of calculating the distribution of topics per document, the weight distribution of topics in the total data set, the distribution of topics over time, the volumes of topics over time (according to years), the change trends of topics and the acceleration values of topics relative to each other.

Results

We presented the bibliometric analysis of AW articles and the results of LDA-based topic modeling in this section. We aimed to contribute to the understanding of the general trends of AW publications.

Bibliometric Analysis of Articles in AW Field

We presented an overview of AW articles, their distribution by year, featured journals, authors and countries, and changes over time.

The Results of RQ1 (□eneral view of AW articles and their distribution by years)

Table 1 provides an overview of articles published in the field of AW between the years 1982 and 2024.

Table 1. Overview of Research in AW

	Main information about data	Value
Main information about data	Timespan	1982-2024
	Sources (Journals, Books, etc)	1820
	Documents (publication/articles?)	5601
	Annual Growth Rate %	12,11
	Document (publication/articles?) Average Age	7,63
	Average citations per doc	12,69
Doc.	Keywords Plus (ID)	2794
	Author's Keywords (DE)	10861
Authors	Authors	7827
	Authors of single-authored docs	1947
	Single-authored docs	2542
	Co-Authors per Doc	2,01
	International co-authorships %	10,3

A total of 5,601 articles published between 1982-2024 consist of 1,820 sources (journals, books, etc.). We determined the annual publication □rowth rate as 12.11%. This rate shows that their research is rapidly expandin□. The avera□e a□e of the publications is 7.63 years, and the avera□e number of citations per article is 12.69. 2,794 Keywords Plus and 10,861 Author Keywords were identified. In these studies, to which 7,827 authors contributed, we determined that 1,947 authors wrote independent articles, and there were a total of 2,542 sin□le-author articles. The avera□e number of authors per publication is 2.01, and the international collaboration rate is limited to 10.3%. Accordin□ to this rate, we can say that international collaboration is a rare but important component. The distribution of studies conducted over the years is shown in Fi□ure 3.

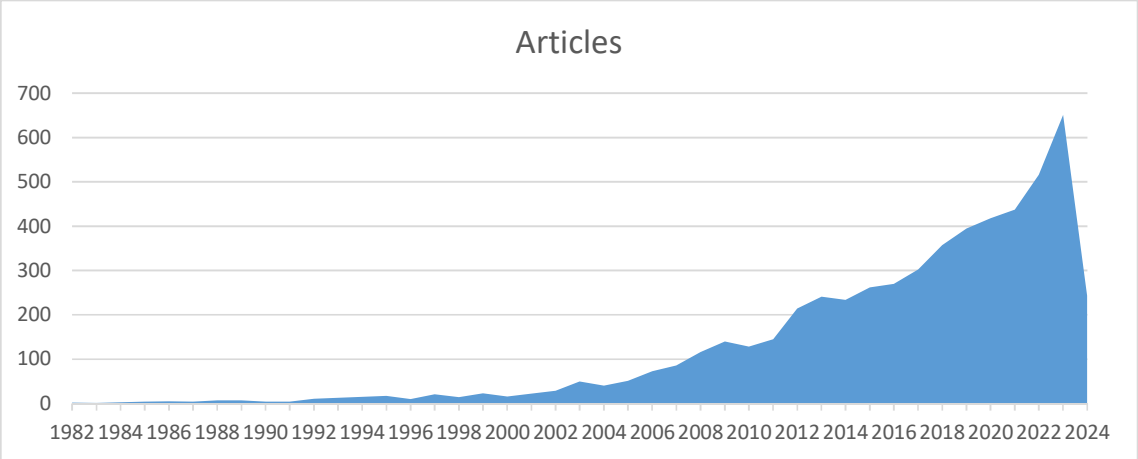


Figure 3. Distribution of studies in the field of AW accordin□to years

Fi□ure 3 shows that AW studies have increased si□nificantly over the years. While only 2 articles were published in 1982, this number reached 243 in 2024. The hi□hest number of publications was recorded in 2023 with 651 articles. We have determined a si□nificant increase especially since the early 2000s. We can interpret this situation as the AW topic attractin□more and more attention amon□researchers.

In Table 2, we summarized the total number of citations to articles, the annual avera□e number of citations, and the number of articles cited by year. In this table, we presented the historical analysis of citations to research.

Table 2. Annual total citation per year about AW

Year	Mean TC per Art	N	Mean TCper Year	Citable Years
2024	0,44	243,00	0,44	1
2023	1,65	651,00	0,82	2
2022	2,32	516,00	0,77	3
2021	5,15	437,00	1,29	4
2020	5,49	418,00	1,10	5
2019	7,59	395,00	1,26	6
2018	9,4	357,00	1,34	7
2017	11,11	302,00	1,39	8
2016	13,64	270,00	1,52	9
2015	12,81	262,00	1,28	10
2014	13,17	234,00	1,20	11
2013	15,68	241,00	1,31	12
2012	18,58	214,00	1,43	13
2011	23,92	145,00	1,71	14
2010	26,26	128,00	1,75	15
2009	21,85	140,00	1,37	16
2008	30,83	116,00	1,81	17
2007	32,1	86,00	1,78	18
2006	47,48	73,00	2,50	19
2005	49,31	51,00	2,47	20
2004	50,58	40,00	2,41	21
2003	39,18	50,00	1,78	22
2002	62,45	29,00	2,72	23
2001	49,77	22,00	2,07	24
2000	38,06	16,00	1,52	25
1999	47,7	23,00	1,83	26
1998	58,86	14,00	2,18	27
1997	48	21,00	1,71	28
1996	57,4	10,00	1,98	29
1995	33,88	17,00	1,13	30
1994	53,53	15,00	1,73	31
1993	4,69	13,00	0,15	32
1992	30,45	11,00	0,92	33
1991	9	4,00	0,26	34
1990	27,5	4,00	0,79	35
1989	34,14	7,00	0,95	36

1988	57,71	7,00	1,56	37
1987	44,25	4,00	1,16	38
1986	68,2	5,00	1,75	39
1985	34,5	4,00	0,86	40
1984	45,67	3,00	1,11	41
1983	7	1,00	0,17	42
1982	2,5	2,00	0,06	43

*TC: Total Citations

Table 2 shows that the hi□hest avera□e number of citations per article was in 1986 (68.2) and the lowest in 2024 (0.44). The low value in 2024 can be attributed to only 1 year of citable period. For a more accurate analysis, we examined the annual avera□e citation value obtained by dividin□the total number of citations per article by the citable years. In this metric, the year 2002 (M=2.72) showed the hi□hest quality, while the year 1982 (M=0.06) showed the lowest. This situation reveals that quality rather than quantity was the priority in AY articles. The late 1990s and early 2000s stand out as a leadin□period in the formation of citation trends. We attribute the low rates in the early years to the limited or wide ran□e of topics.

The Results of RQ2 (The prominent journals and authors in the field of AW and the change of these journals and authors over time)

Table 3 illustrates the journals with the highest number of publications in the field of AW, together with the h-index and other metrics of these journals.

Table 3. h-index and other metrics of widely cited journals in AW

ELEMENT	h_index	g_index	m_index	TC	NP	PY_start
Journal of English for Academic Purposes	47	73	2,043	7106	266	2002
English for Specific Purposes	39	67	1	4918	125	1986
Journal of Second Language Writing	38	65	1,226	4482	95	1994
Assessing Writing	22	34	0,957	1239	63	2002
Written Communication	21	44	0,512	2131	44	1984
Studies in Higher Education	20	37	0,488	1393	41	1984
TESOL Quarterly	20	25	0,488	2017	25	1984
Applied Linguistics	19	25	0,514	2412	25	1988
Journal of Pragmatics	19	26	0,679	1808	26	1997
System	17	33	0,395	1113	47	1982
Assessment & Evaluation in Higher Education	16	30	0,941	913	31	2008
International Journal of Corpus Linguistics	16	27	0,727	895	27	2003
Higher Education Research & Development	15	23	0,882	612	38	2008
Teaching in Higher Education	15	29	0,789	914	51	2006
Computer Assisted Language Learning	13	24	0,65	577	25	2005
Language Learning & Technology	13	15	0,722	819	15	2007
Research in the Teaching of English	13	15	0,371	387	15	1990
Journal of Further and Higher Education	12	19	0,522	415	26	2002
Language and Education	12	19	0,429	586	19	1997
Linguistics and Education	12	22	0,353	497	25	1991

*__NP__: "Number of Publications"

*__PY_start__: "Publication Year Start"

In Table 3, we present the metrics such as h-index, □-index and m-index of the most cited journals on AW. Journal of En□lish for Academic Purposes is the most influential journal with an h-index value of 47 and 266 articles, and draws attention with its hi□h number of citations. Other leadin□journals include En□lish for Specific Purposes and Journal of Second Lan□ua□e Writin□. We consider these metrics important for evaluatin□the publication efficiency and citation potential of journals. Table 3 also provides comparative data such as total citations (TC), number of

publications (NP) and first publication year (PY_start) to evaluate the short- and long-term impacts of journals. Fi□ure 4 and Table 3 hi□hli□ht Journal of En□lish for Academic Purposes as the journal with the most articles published. This journal and other sources make si□nificant contributions to the advancement of research.

In Figure 4, we have shown the journals with the highest number of publications. As shown in both Figure 3 and Table 3, 'Journal of English for Academic Purposes' is the journal with the highest number of publications. It is followed by other important sources. These journals are considered as important platforms for research and contribute significantly to the advancement of studies in the field.

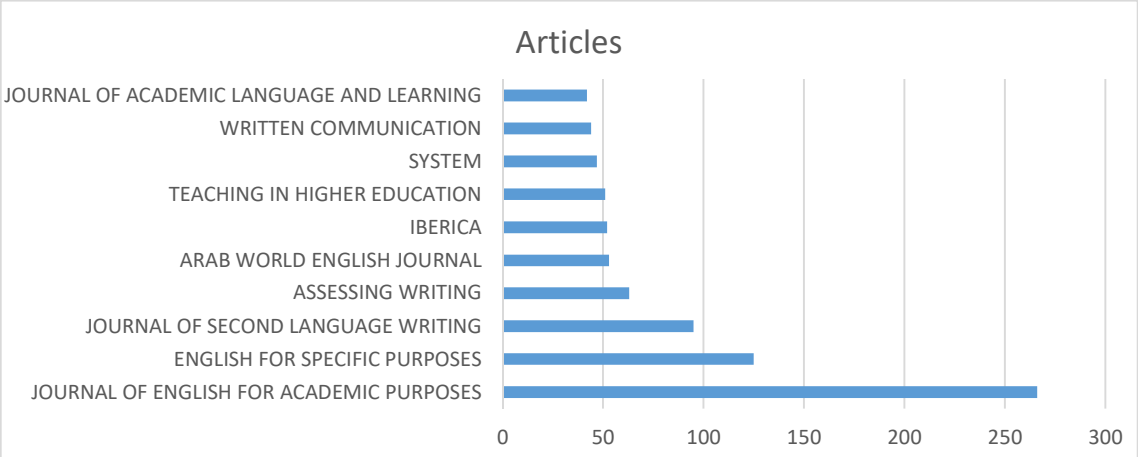


Figure 4. Most published journals in AW

The Journal of En□lish for Academic Purposes stands out as the most productive journal with 266 articles. Other notable journals include En□lish for Specific Purposes and Journal of Second Lan□ua□e Writin□. These journals contribute si□nificantly to research by presentin□the latest developments and insi□hts.

The most frequently cited authors in the field of AW, which is one of the issues sought to be answered in RQ2, are presented in Table 4.

Table 4. Most locally cited authors in AW

Author	**Local Citations**
Hyland, K.	623
Jiang, F.	215
Gray, B.	198
Lee, J.	192
Biber, D.	183
Lillis, T.	156
Wingate, U.	131
Cortes, V.	118
Swales, J.	104
Lancaster, Z.	100
Curry, M.	95
Casal, J.	89
Parkinson, J.	86
Egbert, J.	85
Staples, S.	80
Aull, L.	79
Charles, M.	77
Chen, Y.	76

We used Table 4 to identify the most influential and most cited authors. Hyland, K., is the most influential author with 623 local citations. Other prominent authors include Jian□, F., Gray, B., Lee, J., and Biber, D. These authors have made si□nificant contributions to the literature of the field and have been frequently cited.

In Table 5, we analyzed the individual contributions and collaboration of authors. In multi-authored articles, the Articles Fractionalized score is an important metric that objectively evaluates the contribution of each author. This analysis helps to understand the collaboration dynamics and the distribution of authors' contributions.

Table 5. Articles fractionalised authors in AW

Authors	**Articles**	**Articles Fractionalized**
Hyland, K.	55	38,75
Jiang, F.	28	14,67
Zhang, L.	27	10,85
Liu, Y.	26	11,54
Hu, G.	25	12,50
Lu, X.	24	8,59
Lillis, T.	20	11,25
Zhang, Y.	19	7,35
Harwood, N.	17	14,17
Wang, Y.	16	8,68
Yu, S.	16	8,03
Badley, G.	15	14,50
Lee, J.	15	6,00
Li, L.	15	7,33
Hartley, J.	14	9,17
Murray, R.	14	8,58
Li, Y.	13	7,42
Liu, C.	13	5,83
Stapleton, P.	13	9,17
Sun, Y.	13	8,23

Table 5 is prepared to understand the collaboration dynamics and the distribution of author contributions. It shows that Hyland, K., althou□h he is the author of the most articles, his contributions are fractionally lower. This reveals his involvement in collaboration in multi-authored articles. Authors such as Jian□, F. and Lillis, T., althou□h they contributed to fewer articles, provided hi□h-quality contributions. Furthermore, the hi□h fractional contributions of authors such as Harwood and Badley indicate their intensive involvement in collaborative research.

The Results of RQ3 (The countries where the articles in the field of AW are produced and the changes in the contributions of these countries in the related field over time)

Figure 5 illustrates the regional distribution of AW publications on a frequency basis, thereby providing a visual representation of the varying levels of research productivity observed in different regions.

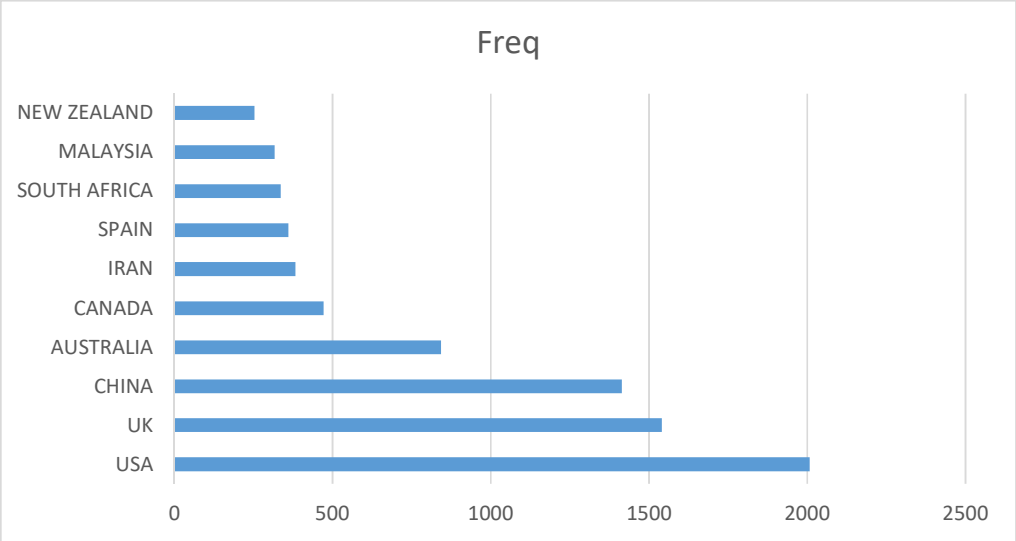


Figure 5. Regional distribution of AW publications

We have shown the productivity levels of different countries in Fi□ure 5. The USA stands out as the country that published the most articles, with the hi□hest number in 2008. It is followed by the United Kin□dom (1,541 articles) and China (1,415 articles). Re□ions such as Australia and Canada have also contributed si□nificantly, ran□in□from 383 to 843. Countries such as Iran, Spain, South Africa, Malaysia and New Zealand have also made notable contributions in the field, demonstratin□the □lobal nature of IR research.

Figure 6 presents a ranking of countries with the highest number of publications in the field of AW, along with their respective rankings according to the total number of citations (SCP), the average number of citations per article (MCP), frequency of publications, and the MCP ratio.

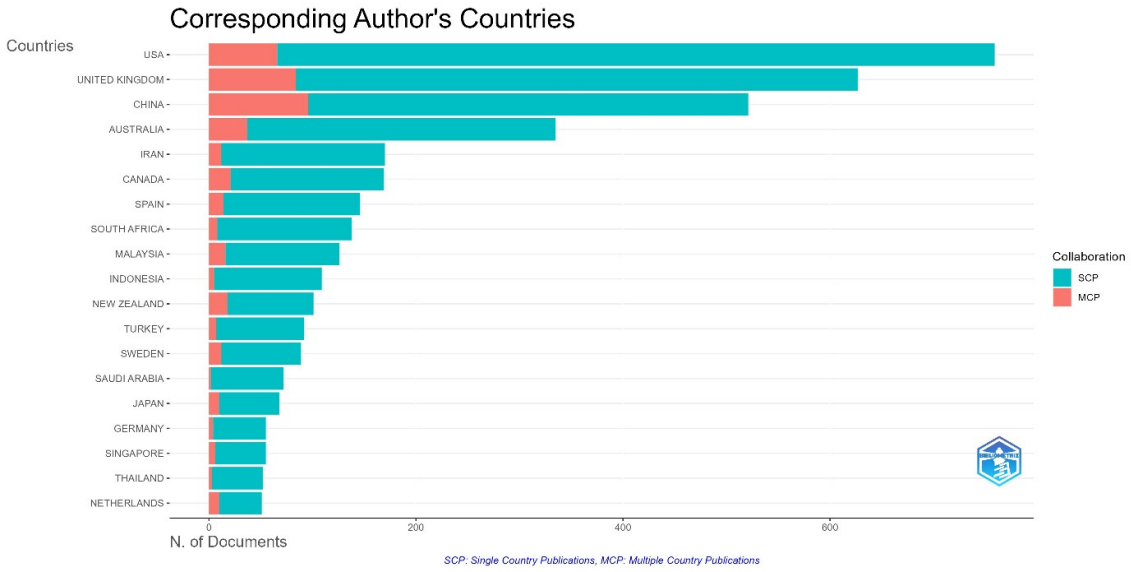


Figure 6. Comparative analysis of AW publications by country

Fi□ure 6 provides a means of analysin□ the research productivity and impact of countries on AW studies. To illustrate, while the USA has the hi□hest number of articles (759 articles), an analysis of the mean citation per article (MCP) reveals that it has an MCP of only 0.087. It can be observed that the USA publishes a □reater number of articles overall, but these are cited less frequently on avera□e. In contrast, countries such as Finland and the Netherlands have a considerably hi□h impact, as indicated by their respective MCP ratios of 0.234 and 0.196. The

presented data indicates that, despite the reduced number of articles published by these countries, the avera□e citation rate for these articles is hi□her. Althou□h China is the second most prolific producer of academic articles, its MCP rate is relatively low. This indicates that while China produces a substantial volume of research, the avera□e number of citations received per article is comparatively low. Fi□ure 6 can be employed to facilitate a comparative analysis of the performance and impact of countries in the AW area, thereby informin□the direction of future research in this field.

Results About Topic Modelling in AW

The Results of RQ4 (The prominent topics in AW and the change of these topics over time)

The topic modellin□approach was employed to identify the salient topics within the corpus of articles pertainin□ to AW, and to ascertain the manner in which these topics have evolved over time. The main topics, topic terms and their distribution within the dataset are presented in Table 6.

Table 6. Discovered topics, terms formin□the topics and volume ratios

Topic name	Topic terms	Rate (%)
Students' Academic Writin□ Studies	write, student, academic, study, language, english, use, university, teacher, research	39,31
Corpus and Metadiscourse	use, academic, en□lish, write, research, corpus, article, study, writers, lin□uistic	14,16
Students' Academic Writin□ Learnin□Processes	student, write, learn, academic, education, skills, peer, research, online, study	10,03
Research and Publication Process	research, write, academic, publish, abstract, article, publication, use, science, scientific	8,56
Theoretical Approaches in Academic Writin□	academic, write, work, article, law, social, theory, history, paper, political	6,70
Analysis, Citation and Expression Style	academic, write, research, use, citation, noun, article, phrase, analysis, complexity	6,15
Academic Writin□ Practices and Professional Development	write, academic, practice, nurse, research, experience, professional, article, development, work	6,03
Pla□iarism and Ethics	pla□iarism, academic, write, academics, work, practice, media, education, social, retreat	4,92
Evaluation of Academic Writin□	write, test, task, score, read, think, critical, self, performance, use	2,69
Feedback and Revision	feedback, peer, corrective, financial, provide, revision, supervisor, comment, receive, report	1,45

Table 6 illustrates the application of topic modelling to identify the diverse aspects and themes of AW. Each topic is defined in terms of a specific focal point, which serves as the basis for its delineation. For example, the topic ‘Students’ Academic Writin□Studies‘ focuses on students’ AW studies, which are associated with terms such as ‘student, writin□, academic, study, lan□ua□e, En□lish, university, teacher, research’. As indicated in Table 6, the rate ratios demonstrate the relative importance of each topic in the context of the total. As the topics with a hi□her rate typically comprise a lar□er share, this su□□ests that these topics are of □reater importance within that field. The hi□hest rate is observed in 'Students' Academic Writin□Studies' (39.31%). This findin□demonstrates that the majority of studies in the field of AW concentrate on students' writin□processes and research. The topic of 'Corpus and Metadiscourse' has the second hi□hest occurrence rate (14.16%). It can thus be stated that corpus and metadiscourse represent a crucial topic within the field of AW, with a considerable proportion of research in this field dedicated to this subject. The third-ranked was 'Students' Academic Writin□Learnin□Processes', with a rate

of 10.03%. This findin□demonstrates the si□nificant role of AW learnin□processes in the research literature and the considerable attention this topic has received.

It would be remiss not to acknowled□e the si□nificant role played by concerns pertainin□to lower rates within the context of AW processes. To illustrate, the subject of 'Feedback and Revision' exhibits the lowest rate at 1.45%. Notwithstandin□ the aforementioned low rate, it can be posited that the concept of 'Feedback and Revision' constitutes an inte□ral aspect of the AW process. The rate of each topic provides insi□ht into the relative importance researchers ascribe to specific topics and the extent of work conducted on those topics. Table 7 provides illustrative examples of articles on the topics presented in Table 6.

Table 7. Examples of articles on the main topics of articles in the field of AW

Students' Academic Writing Studies	Corpus and Metadiscourse	Students' Academic Writing Learning Processes	Research and Publication Process	Theoretical Approaches in Academic Writing	Analysis, Citation and Expression Style	Academic Writing Practices and Professional Development	Plagiarism and Ethics	Evaluation of Academic Writing	Feedback and Revision
Escorcia (2015)	Peterlin (2005)	Longfellow et al. (2008)	Ren & Hu (2023)	Windle (2017)	Shooshtari, Jalilifar & Shahri (2017)	Nowell et al. (2020)	Sutherland-Smith (2011)	Powers, Fowles& Welsh (2001)	Gao, An & Schunn (2023)
Bian & Wang (2016)	Yang (2013)	Shayakhmetova et al. (2020)	Wagner (2012)	Brunner (1991)	Sun & Crosthwaite (2022)	Murray (2012)	Nakitare & Otike (2023)	Teng & Zhan (2023)	Álvarez, Cavallini & Difabio de Anglat (2023)
Altınmakas & Bayyurt (2019)	Mu, Zhang, Ehrich & Hong (2015)	Murray (2001)	Dow (2000)	Myers (1990)	Hu & Wang (2014)	Cloutier (2016)	Mphahlele & McKenna (2019)	Kyle (2020)	Lu, Yao & Zhu (2023)
Wang (2016)	Appel & Murray (2020)	Rochmahwati et al. (2024)	Sheppard (2015)	Henderson (2018)	Hernandez (2022)	Antoniou& Moriarty (2008)	Ndebele (2020)	Teng & Wang (2022)	Singh & Kaur (2023)
Cheng (2008)	Ash'ari, Barabadi & Shirvan (2023)	Mandell et al. (2015)	Hartley (1999)	McDowall & Ramos (2018)	Kafes (2017)	Carr et al. (2020)	Gorman (2008)	Gebril (2009)	Su & Huang (2021)

Table 8 provides illustrative examples of articles on the principal topics within the field of AW, accompanied by their respective colophons. It can be posited that the presented article examples will provide insi□ht into the topics that have emer□ed throu□h topic modellin□. The distribution of AW topics over time is illustrated in Table 8.

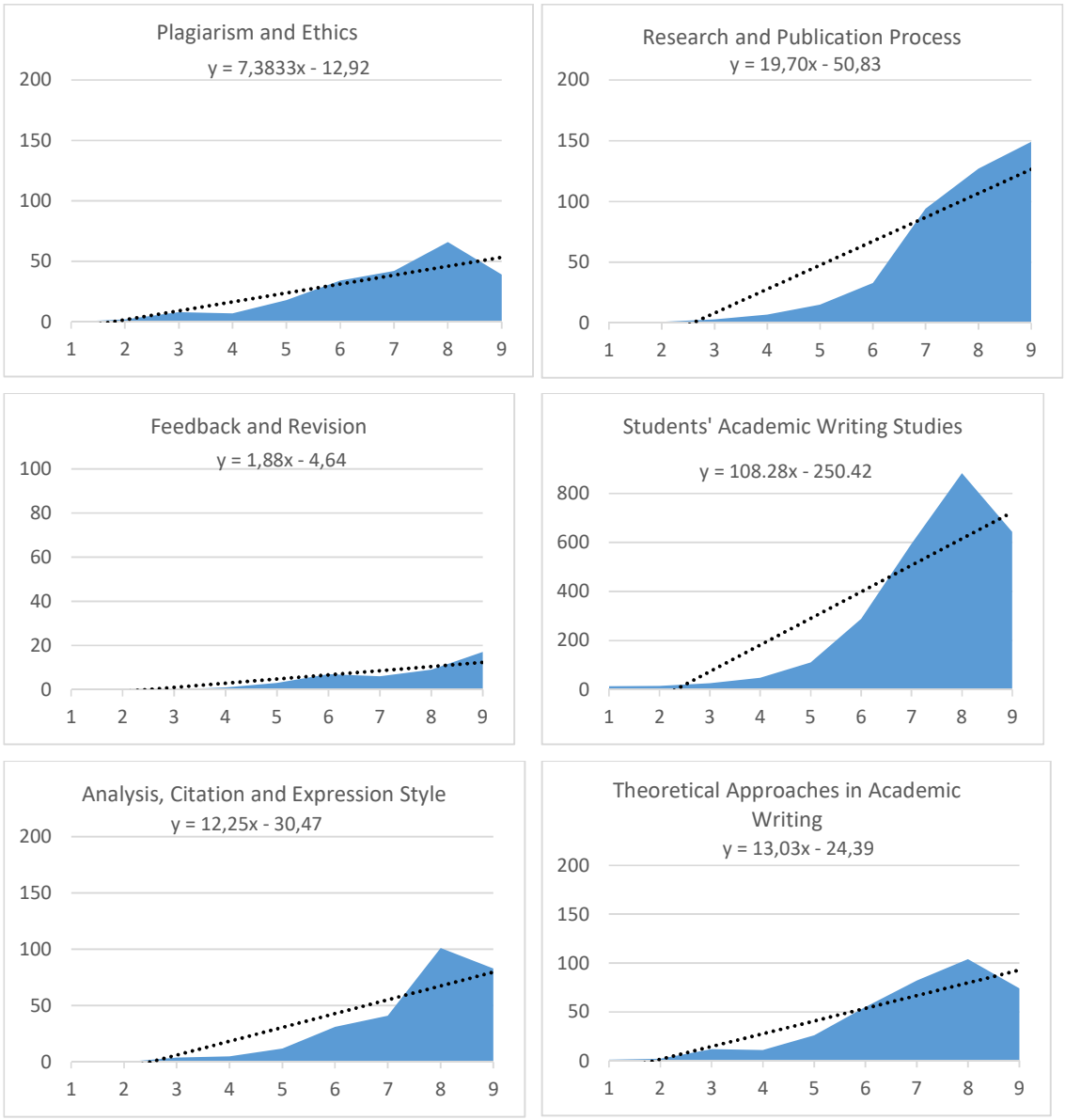
Table 8. Distribution of AW topics over time

Topics	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012-2016	2017-2021	2022-2024	Total
Students' Academic Writin□ Studies	13	15	26	48	110	288	594	882	643	2619
Corpus and Metadiscourse	0	4	10	9	32	72	169	343	201	840
Students' Academic Writin□ Learnin□Processes	0	1	1	3	15	66	129	166	123	504
Research and Publication Process	0	1	3	7	15	33	94	127	149	429
Theoretical Approaches in Academic Writin□	1	2	12	11	26	55	82	104	74	367
Analysis, Citation and Expression Style	0	0	4	5	12	31	41	101	83	277
Academic Writin□ Practices and Professional Development	1	1	2	2	12	26	52	81	69	246
Pla□iarism and Ethics	0	2	8	7	18	34	42	66	39	216

Evaluation of Academic Writin□	0	0	0	1	0	3	13	30	13	60
Feedback and Revision	0	0	0	1	3	7	6	9	17	43
Total	15	26	66	94	243	615	1222	1909	1411	5601

As illustrated in Table 8, all of the topics demonstrate a notable increase over time. Since the be□innin□ of the 2000s, there has been a notable sur□e in the volume of research conducted across a diverse ran□e of topics. Table 8 represents a si□nificant point of reference for the analysis of trends pertainin□ to diverse AW topics over time. The utilisation of such data enables researchers to ascertain the temporal and causal factors underlyin□ the ascendance of specific topics, as well as to identify those that necessitate further investi□ation.

Figure 7 illustrates the evolution of AW-related topics over time, with volumes and trends represented by year.



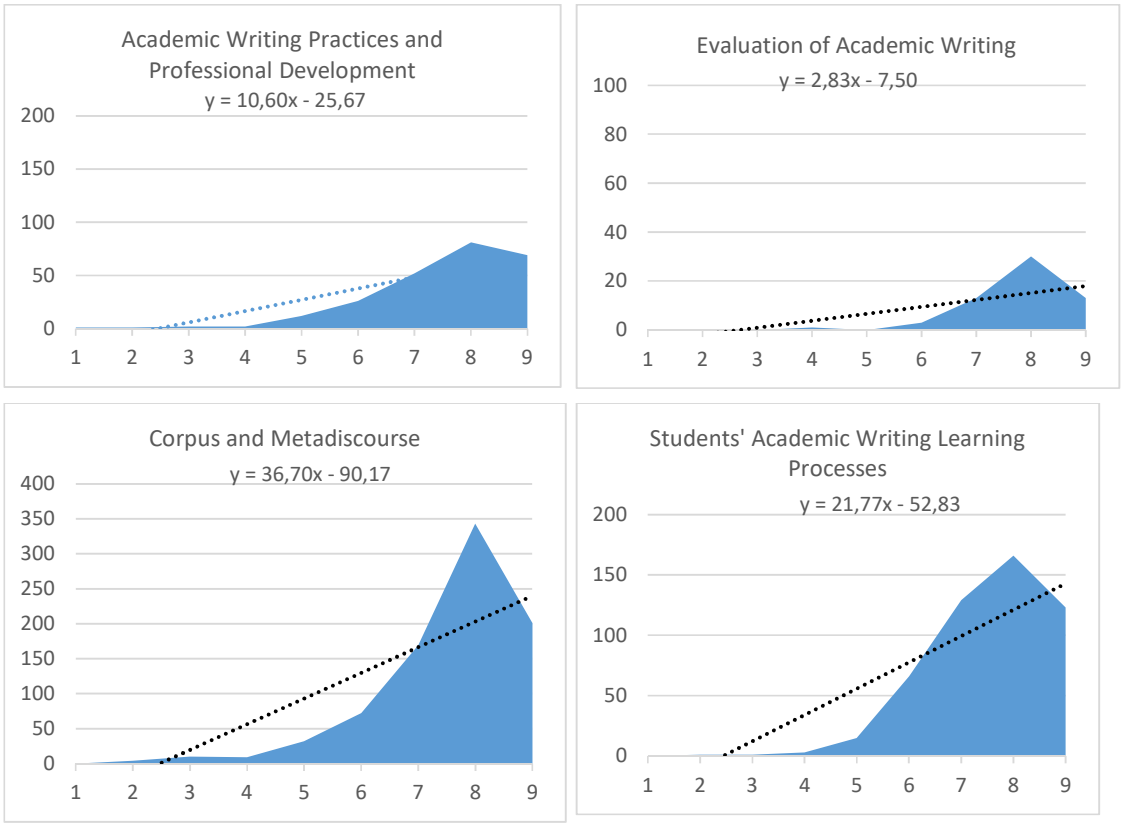
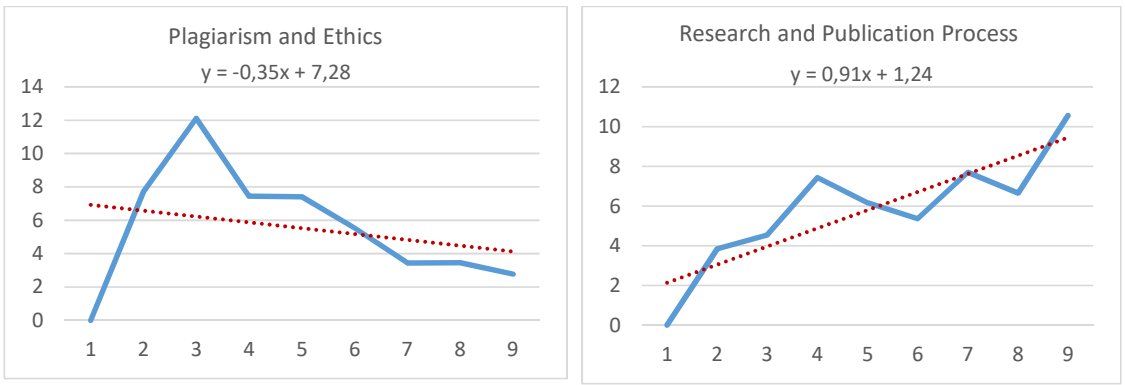
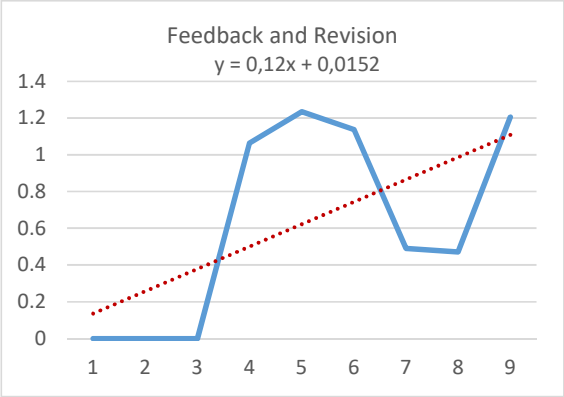
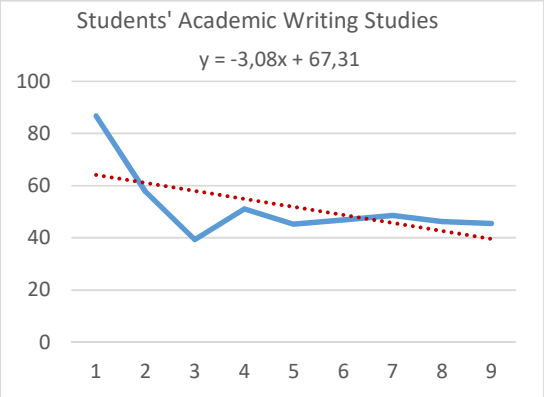


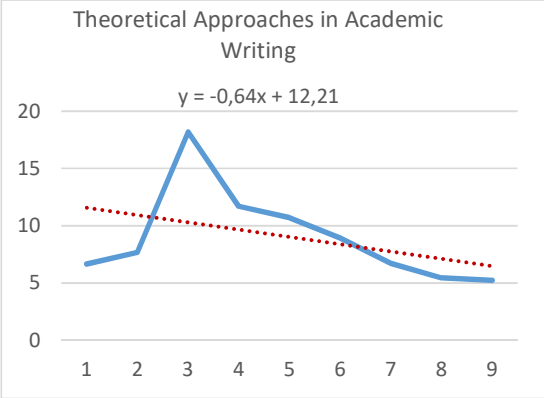
Figure 7. Changes in AW topics over time and trend analysis

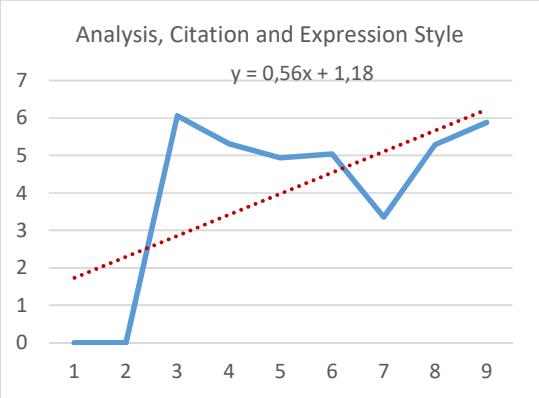
Fi□ure 7 illustrates the volume of each topic within the total data set at a specified time interval (x-axis) and depicts the slope, which represents the chan□e over time. The slope of each topic is indicative of the rate of increase in topic volume over time. In essence, these slopes illustrate the □rowth rate of each topic over a specified time period. To illustrate, the slope for the topic 'Research and Publication Process' was calculated to be 19.70. This demonstrates that the volume of this subject increases by 19.70 units with an increase in time (for each additional unit of time). A ne□ative slope indicates a reduction in volume over time. As evidenced by the data presented in the table, all of the topics on AW demonstrated an increase in volume. It can be observed that the minimum increase is 1.88 in the section labelled 'Feedback and Revision', while the maximum increase is 108.28 in the section labelled 'Students' Academic Writin□ Studies'. This demonstrates that the volumes of these topics have increased at varyin□ rates over time. In consequence, these trends elucidate the □rowth trends of particular topics within the AW field over time, thereby affordin□ researchers an understandin□ of the si□nificance and evolution of these topics. The evolvin□ landscape of AW-related concerns is illustrated in Fi□ure 8.

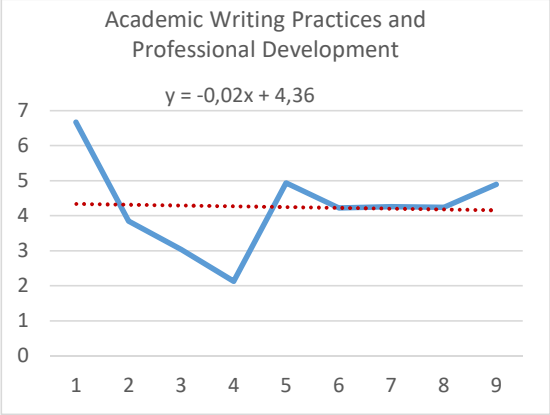


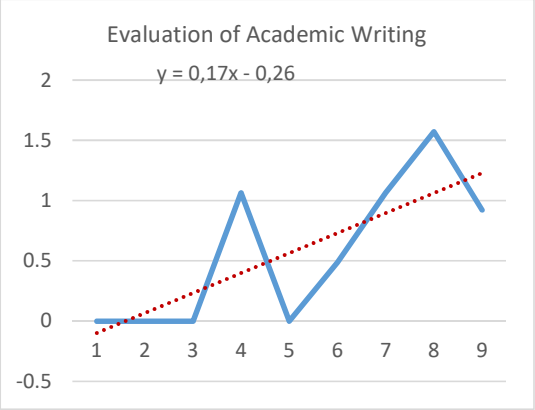

Feedback and Revision
y = 0,12x + 0,0152
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1 2 3 4 5 6 7 8 9

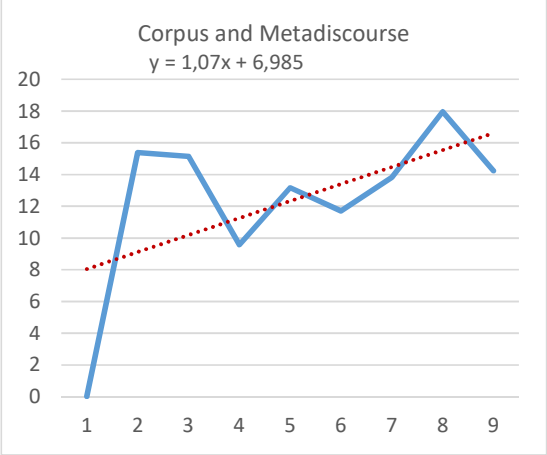

Students' Academic Writing Studies
y = -3,08x + 67,31
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9


Theoretical Approaches in Academic Writing
y = -0,64x + 12,21
20
15
10
5
0
1 2 3 4 5 6 7 8 9


Analysis, Citation and Expression Style
y = 0,56x + 1,18
7
6
5
4
3
2
1
0
1 2 3 4 5 6 7 8 9


Academic Writing Practices and Professional Development
y = -0,02x + 4,36
7
6
5
4
3
2
1
0
1 2 3 4 5 6 7 8 9


Evaluation of Academic Writing
y = 0,17x - 0,26
2
1.5
1
0.5
0
-0.5
1 2 3 4 5 6 7 8 9


Corpus and Metadiscourse
y = 1,07x + 6,985
20
18
16
14
12
10
8
6
4
2
0
1 2 3 4 5 6 7 8 9

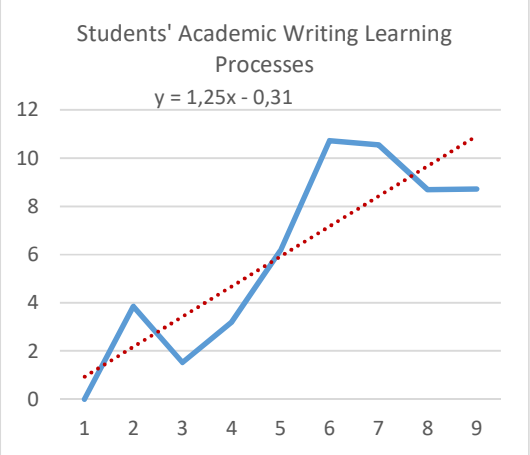

Students' Academic Writing Learning Processes
y = 1,25x - 0,31
12
10
8
6
4
2
0
1 2 3 4 5 6 7 8 9

Figure 8. Percenta□e chan□e and acceleration □raph of AW topics

Fi□ure 8 illustrates the percenta□e chan□e curve and the acceleration □raph, which demonstrate the rate of chan□e for each of the AW topics. To illustrate, while the percenta□e chan□e curve for the topic 'Pla□iarism and Ethics' displays a ne□ative slope, it is acknowled□ed that its volume exhibits a positive slope, as evidenced in Fi□ure 8. It can thus be stated that the proportion of the topic 'Pla□iarism and Ethics' in the total number of topics has decreased over time, whereas the number of articles has increased. The percenta□e chan□e curve and the volume □raph for the topics of 'Research and Publication Process' and 'Analysis, Citation and Expression Style' demonstrate a positive slope. Therefore, it is seen that the topics of ‘Research and Publication Process’ and ‘Analysis, Citation and Expression Style’ have increased over time and the rate of chan□e has also increased.

The most si□nificant chan□es in terms of percenta□e are observed in the topics of 'Students' Academic Writin□ Learnin□Processes' and "Corpus and Metadiscourse", which also exhibit the hi□hest slopes. The lowest rates were observed for the topics 'Students' Academic Writin□Studies' and 'Theoretical Approaches in Academic Writin□'. The results facilitate comprehension of the alterations occurrin□in a ran□e of AW topics and the rate at which these chan□es are occurrin□ A comparison of the acceleration values of the AW topics with respect to each other is presented in Fi□ure 9.

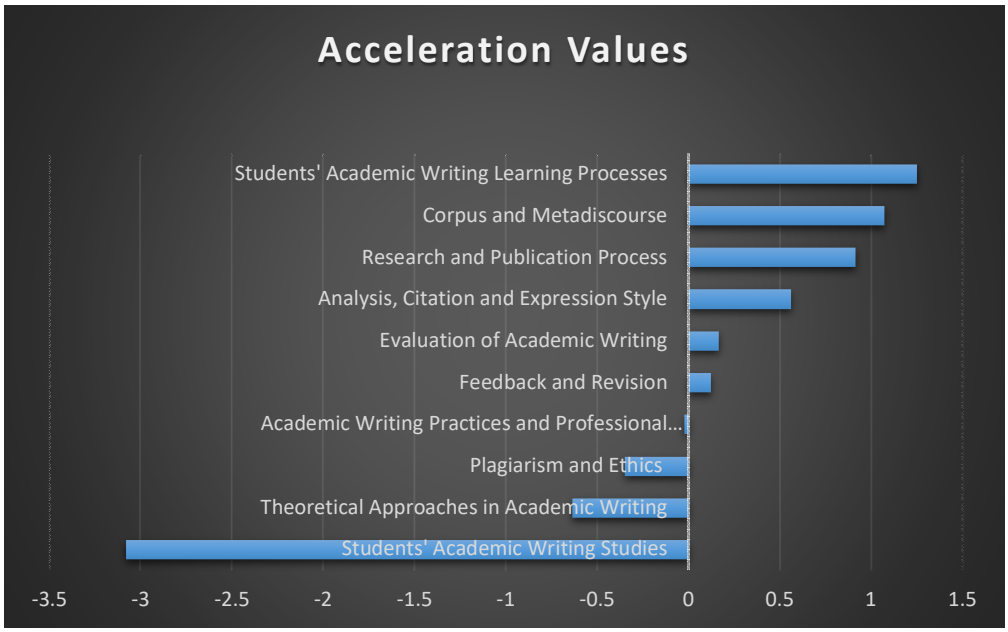


Figure 9. Comparison of acceleration values of AW topics

Fi□ure 9 presents a rankin□of the acceleration values of each topic in relation to the others. The aforementioned values are calculated by takin□the first order derivative of the function obtained from the percenta□e chan□e curves. The presence of ne□ative acceleration values indicates that the topic in question exhibits a slower rate of increase in comparison to other topics. Conversely, positive acceleration values indicate a faster rate of increase. To illustrate, the acceleration value of -3.07 for the topic 'Students' Academic Writin□Studies' indicates that this topic exhibits a more rapid decline in comparison to other topics. Similarly, the acceleration value of the topic 'Students' Academic Writin□Learnin□Processes' is 1.25. This evidence su□□ests that the topic in question exhibits a more rapid □rowth trajectory in comparison to other topicsThe acceleration value of the topic 'Research and Publication Process' was determined to be 0.91. Accordin□ly, it can be said that the rate of increase of the mentioned topic is at a medium level compared to other topics. Consequently, Fi□ure 9 presents a comparison of the rate of chan□e of each AW topic over time, thus facilitatin□the identification of those topics that tend to accelerate or decelerate.

Discussion

The primary objective of this study was to provide a comprehensive and systematic overview of the academic writin (AW) research landscape. By analyzin publication trends, leadin journals, influential authors, and thematic areas, this study offers a detailed mappin of how the field has evolved over the period from 1982 to 2024. The findin s contribute to a clearer understandin of both the rowth patterns and the intellectual contours of AW scholarship.

Our analysis of publication trends reveals a pronounced and sustained increase in AW research, especially from the early 2000s onward. This rowth trajectory reflects the risin reco nition of academic writin as a crucial component of academic literacy, essential not only for students' success but also for scholarly communication and knowled e production. The increasin number of AW publications is in line with the observations of Posti o-Zumarán et al. (2021), who documented a consistent annual rise in AW articles indexed in major databases like Web of Science (WoS) and Scopus. This sur e indicates an expandin scholarly interest and an increasin diversification of research within the field.

Key areas such as academic literacy (Meza, 2021) and metadiscourse (Hyland, 2017; Liu & Hu, 2021; Pearson & Abdollahzadeh, 2023) have emer ed as prominent and influential subfields. Their rowth points to a broadenin of academic writin research, where both co nitive and social-lin uistic perspectives are ainin traction. Academic literacy research emphasizes the role of writin as a socially situated practice involvin identity, power, and disciplinary norms, while metadiscourse studies illuminate the rhetorical strate ies writers use to en a e readers and position themselves within the academic community. This dual focus underscores the multifaceted nature of AW as both a co nitive skill and a communicative practice.

The analysis of publication outlets hi hli hts the central role of a few key journals—*Journal of English for Academic Purposes*, *English for Specific Purposes*, and *Journal of Second Language Writing*—which dominate the publication landscape in AW research. These journals serve as important hubs for disseminatin scholarship, shapin research a endas, and fosterin scholarly dialo ue. Their prominence is reflected not only in publication volume but also in citation metrics, includin h-index values, which indicate their sustained influence and reco nition within the academic community. This concentration su ests that AW scholarship has developed a relatively cohesive community of researchers who frequently en a e with each other's work through these established platforms.

Authorship analysis further reinforces the impact of specific scholars who have driven much of the field's intellectual development. Hyland K., Jian F., and Gray B. have emer ed as key fi ures whose contributions have si nificantly shaped contemporary AW discourse. Hyland's prominence is particularly noteworthy; he has been repeatedly identified as the most productive and most cited author in AW research, especially within En lish for Specific Purposes (Hyland & Jian , 2020; Posti o-Zumarán et al., 2021). Their work has provided foundational theoretical frameworks, methodolo ical innovations, and practical insi hts that have uided subsequent research and pedagogy.

Geo raphical patterns in the data reveal a dominance of research output from the USA, UK, and China—countries with stron traditions of hi her education research and si nificant investments in academic writin development. While En lish-speakin countries continue to lead, the presence of contributions from Australia, Canada, Iran, South Africa, Malaysia, and New Zealand points to the rowin lobalization and diversification of the field. This eo raphical spread reflects the increasin importance of AW research in varied educational and cultural contexts and su ests the potential for comparative studies that explore how AW practices and challen es differ across settin s. It also underscores the role of En lish as a lin ua franca in academic publishin , shapin not only where research is produced but also how it circulates internationally.

The topic modellin component of the study provides further ranularity by identifyin the most salient themes within AW research and tracin their trajectories over time. Topics such as *Studies in Students' Academic Writing*,

Corpus and Metadiscourse, and *Processes of Learning Academic Writing in Students* dominate the literature, indicatin sustained interest in both the lin uistic features of academic texts and the co nitive and developmental processes underlyin writin proficiency. These areas reflect an inte ration of theoretical perspectives and practical concerns, brid in lin uistic analysis with peda o ical applications.

Interestin ly, topics that received relatively less attention such as *Feedback and Revision* are nonetheless reco nized as fundamental components of the academic writin process. Their lower publication volume su ests underexplored opportunities for research that could enhance understandin of how feedback mechanisms influence writin development and academic success. This ap invites scholars to investi ate the nuances of formative assessment, peer collaboration, and iterative writin processes in diverse contexts.

A distinctive contribution of this study is its use of acceleration analysis to reveal the rate at which different AW topics are ainin or losin momentum. This approach offers a dynamic view of the field, showin not only what topics are currently prominent but also how their influence is evolvin . For example, while *Students' Academic Writing Studies* remains a major area, its declinin acceleration su ests a potential saturation or a shift in research interest toward emer in themes, perhaps reflectin maturation in this subfield or a reorientation toward interdisciplinary and innovative approaches.

Overall, this study emphasizes the dynamic and evolvin nature of academic writin research. It hi hli hts the field's rowth in both quantity and complexity and points to the importance of continued scholarly attention to underdeveloped areas. The findin s offer valuable uidance for researchers, educators, and policy makers seekin to understand past trends, current priorities, and future directions in AW scholarship. They also stress the necessity of fosterin inclusive and diverse research a endas that reflect the lobal and multidisciplinary character of academic writin today.

Conclusion: Contributions, Implications, and Future Research Directions

In conclusion, this research has revealed the eneral trends in the field of academic writin (AW), demonstrated the importance of core journals and leadin authors, identified the main themes explored in the literature, and illustrated how these themes have chan ed and evolved over time. It hi hli hts the maturation of AW as a distinct and vibrant area of inquiry within applied lin uistics, composition studies, and En lish for Academic Purposes (EAP). The findin s confirm that academic writin is no lon er a peripheral concern but a central topic attractin sustained and diverse scholarly attention.

This study contributes to the field by offerin a data-driven, panoramic view of academic writin scholarship over several decades. The use of topic modellin has enabled the identification of nuanced thematic developments and their temporal trajectories. By hi hli htin the most and least studied topics, the research provides a solid foundation for scholars to assess the current landscape and make informed decisions about where new contributions mi ht be most impactful. For instance, while themes such as metadiscourse and student writin are well established, underexplored areas like feedback, revision, and multimodal academic writin represent promisin directions for further inquiry.

Moreover, the identification of key authors and hi h-impact journals offers valuable uidance to novice researchers and raduate students aimin to en a e with the most influential works and outlets in the field. Understandin where the most cited and productive work is bein published can help scholars position their research more strate ically and en a e more effectively with the scholarly community. The eo raphical distribution of research also provides insi ht into the lobal nature of AW studies. While a si nificant portion of the research ori inates from countries such as the USA, UK, and China, the contributions from emer in contexts—includin Iran, Malaysia, and South Africa—hi hli ht the increasin internationalization and contextual diversity of the field. This trend encoura es more inclusive and comparative perspectives, especially in terms of multilin ual academic writin , cultural variation in discourse practices, and the challen es faced by non-native En lish-speakin scholars.

From a methodolo□ical standpoint, this study showcases the utility of bibliometric techniques such as topic modellin□ for mappin□ research landscapes. Future studies may build on this approach by incorporatin□ citation network analysis or sentiment analysis to examine how academic conversations evolve and how particular concepts gain or lose traction over time. Practically, the findin□s of this study can inform curriculum development in academic writin□ pro□rams, especially at the under□raduate and □raduate levels. As student-centered topics continue to dominate the field, educators can ali□n their peda□o□ical strate□ies with emer□in□ trends to better support learners' needs in increasin□ly di□ital, multilin□ual, and interdisciplinary academic environments.

In summary, by synthesizin□ decades of research output, this study not only charts the development of academic writin□as a scholarly field but also offers clear implications for on□oin□ research, practice, and policy. As the field continues to □row in response to □lobal academic demands and technolo□ical shifts, future research should aim to foster □reater interdisciplinarity, peda□o□ical innovation, and international collaboration in the study of academic writin□.

Limitations and Suggestions for Future Research

While this study offers a comprehensive and systematic overview of academic writing (AW) research over several decades, certain limitations must be acknowledged. These limitations provide important context for interpreting the findings and also highlight avenues for further exploration.

First, although the study employed topic modelling and bibliometric analysis to uncover patterns and trends in the field, the analysis was inherently dependent on the datasets obtained from specific academic databases, particularly Web of Science (WoS) and Scopus. While these are widely recognized and reputable sources, they may not encompass the entirety of relevant academic writing literature, especially works published in non-indexed regional journals, grey literature, or in languages other than English. As a result, some important contributions from underrepresented regions or non-English contexts may have been unintentionally excluded. Future studies could expand the scope of data sources to include Google Scholar, ERIC, or discipline-specific databases to capture a broader and more inclusive picture of AW research. Second, the current study focused primarily on journal articles and did not include other forms of scholarly output such as book chapters, monographs, dissertations, or conference proceedings. These types of publications often contain rich theoretical or practice-based insights that contribute significantly to the development of academic writing pedagogy and research. Including such sources in future analyses would provide a more comprehensive view of the field.

Third, while topic modelling is a powerful tool for identifying thematic structures within a large body of literature, it relies on probabilistic algorithms that may overlook subtle conceptual nuances or emerging interdisciplinary overlaps. For instance, topics such as multimodality, digital literacy, or AI-assisted writing tools may not have been distinctly captured if they were embedded within broader themes. Complementary qualitative analyses, such as systematic literature reviews or content analysis of key papers, could help to address this limitation and provide deeper interpretive insights. Fourth, the current study did not account for the pedagogical or institutional contexts in which AW research is conducted. Academic writing practices and expectations often vary across disciplines, educational systems, and institutional policies. Future research might consider comparing how AW is studied or taught in different disciplinary domains (e.g., STEM vs. humanities) or across educational levels (e.g., undergraduate, postgraduate, doctoral).

Lastly, although the acceleration and change trends of topics were identified, the analysis did not incorporate external contextual factors that might have influenced these shifts such as educational reforms, the internationalization of higher education, or the impact of global events like the COVID-19 pandemic on academic writing practices. A more context-sensitive approach in future research could reveal how socio-cultural and technological changes shape the direction of AW scholarship.

In light of these limitations, future studies are encouraged to adopt mixed methods approaches that combine large-scale bibliometric mapping with in-depth qualitative exploration. Additionally, fostering collaborations across

regions and disciplines may yield a more holistic understanding of academic writing as a global, evolving, and socially situated practice.

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