



Charting the Development of Multimodality in English Language Teaching within Higher Education: A Bibliometric Perspective

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Abstract

Multimodality has become a crucial component of 21st-century learning as students increasingly engage with diverse modes of communication in their daily lives. While multimodality has been widely studied, limited attention has been given to its development in English Language Teaching (ELT) within higher education. This study fills that gap by mapping global research trends, leading contributors, and thematic directions through a bibliometric analysis using the Scopus database. A total of 265 documents were initially retrieved, and 184 English-language journal articles published between 2015 and 2024 were included for analysis. Data were processed using VOSviewer to visualize keyword co-occurrence and identify emerging research clusters. The findings reveal that China is the most productive country with 58 publications, followed by the United States with 23, and that National Yunlin University of Science and Technology is the leading institutional contributor. Six thematic clusters were identified, covering multimodality, discourse analysis, digital storytelling, and teacher education. These insights provide a comprehensive overview of the field's evolution and offer practical implications for educators and researchers aiming to enhance multimodality and pedagogical innovation within higher education.

Keywords: Bibliometric Analysis; English Language Teaching; Higher Education; Multimodality; Vosviewer

Introduction

Multimodality has emerged as a defining feature of communication and education in the 21st century. It refers to the use and interaction of multiple

modes—such as language, images, sound, gesture, and spatial design—to construct and convey meaning (Jewitt, C., & Kress, 2003; Kress, 2010). Each mode contributes to how individuals interpret and engage with the world, particularly in media-rich and technology-driven contexts. As an interdisciplinary field, multimodality draws from linguistics, semiotics, education, and communication studies, offering diverse perspectives on how meaning is produced across modes and media (Firmansyah & Julia, 2024; Luca, 2020). In essence, it highlights how people communicate by combining several modes simultaneously to achieve richer meaning-making (Hadriyan et al., 2022).

In the context of English Language Teaching (ELT), multimodality plays a crucial role in developing 21st-century literacy. Learners are increasingly required to interpret and produce multimodal texts—such as digital stories, videos, infographics, and interactive media—beyond traditional written language (Jewitt, 2008; Magnusson & Godhe, 2019; Walsh, 2010). Integrating multimodality helps students not only improve their linguistic proficiency but also enhance higher-order thinking, creativity, and problem-solving skills (Birt et al., 2019; Lim, F. V., & Tan, 2018). Through multimodal learning, students become more autonomous and critically engaged participants in meaning-making processes (Lim, F. V., Toh, W., & Nguyen, 2022; Serafini, 2013). Teachers, therefore, must move beyond print-based literacy to prepare students for authentic communication in technology-rich environments (Cope, B., & Kalantzis, 2020; Yap & Gurney, 2023).

Empirical studies have confirmed the pedagogical benefits of multimodality in ELT. Song (2017) and Bao (2017) found that multimodal instruction enhances students' reading, writing, listening, and speaking performance, while fostering engagement and confidence. Similarly, Sutrisno et al. (2024) demonstrated that multimodality significantly improves learners' motivation, comprehension, and academic achievement. Within higher education, multimodal approaches are now integral to English for Academic Purposes (EAP) and English for Specific Purposes (ESP) courses across diverse fields, including health, business, tourism, and law (Rahmanu & Molnár, 2024). Such practices develop students' communication and information-processing skills, preparing them for professional and interdisciplinary contexts (Qin & Wang, 2021).

Multimodality represents more than a pedagogical trend—it is a fundamental shift in how learners engage with, interpret, and generate meaning in a globalized, media-saturated world. Research has shown that integrating multimodal tasks, such as video essays and interactive infographics, enhances motivation and intercultural awareness in higher education ELT (Crawford Camiciottoli, B., & Campoy-Cubillo, 2018; Nouri, 2019). Yet, despite growing scholarly attention, systematic mapping of research on multimodality in ELT within higher education remains scarce.

Existing bibliometric analyses (Christian et al., 2024; Li, 2024; Zhong et al., 2023) have primarily examined multimodality across broader educational

contexts, often overlooking the specific challenges, applications, and research trajectories within higher education. While these studies have contributed valuable overviews of multimodality research, they differ substantially in scope and focus from the present analysis. Christian et al. (2024) provided a general mapping across educational levels without isolating higher education data, Li (2024) emphasized methodological evolution rather than disciplinary focus, and Zhong et al. (2023) concentrated on multimodal literacy more broadly. The present study extends this work by specifically examining multimodality in ELT within higher education, thereby offering a more targeted understanding of how multimodal approaches support advanced academic literacy and discipline-specific communication. Higher education presents unique demands that warrant separate investigation, as it involves advanced academic literacy, discipline-specific language use, and increasingly digital learning environments. Understanding how multimodality supports these complex forms of learning is therefore essential for designing effective, research-informed ELT practices within higher education.

Addressing this gap, the present study conducts a comprehensive bibliometric analysis of multimodality research in English Language Teaching within higher education from 2015 to 2024. By analyzing 184 Scopus-indexed journal articles, it identifies the most productive authors, institutions, and countries, as well as thematic clusters and emerging research trends. This mapping offers data-driven insights into how multimodality has evolved in academic ELT and highlights underexplored areas—such as contrastive learning, writing instruction, and digital multimodal composing—that merit further investigation. The findings aim to benefit researchers and educators by clarifying research trajectories, informing curriculum design, and guiding future inquiry in multimodality. Accordingly, this study addresses the following research questions:

1. Who are the leading contributors (authors, institutions, and countries) in multimodality research in ELT within higher education?
2. What are the major themes and emerging trends identified through bibliometric analysis?
3. What implications do these trends have for future research and pedagogical practice within higher education?

Method

This bibliometric analysis aimed to map and evaluate research productivity, collaboration patterns, and thematic trends related to multimodality in English Language Teaching (ELT) within higher education. The study was conducted using the Scopus database, which was selected for its comprehensive coverage of peer-reviewed literature in linguistics, education, and applied linguistics.

Search Strategy and Data Collection

The data collection followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009) to ensure transparency and replicability. The following Boolean search string was applied in Scopus on 20 May 2025:

(TITLE-ABS-KEY (multimodal OR multimodality OR "multimodal literacy")
AND TITLE-ABS-KEY ("English language" OR "English teaching" OR "EFL" OR "ESL"
OR "English as a foreign language" OR "English as a second language"
OR "English for specific purposes" OR "English for academic purposes")
AND TITLE-ABS-KEY ("higher education" OR university OR college OR tertiary))

This search initially retrieved 265 documents. The publication years were limited to 2015–2024 to capture the most recent decade of research.

Screening and Selection Process

The screening process involved three stages:

1. Identification – All retrieved documents were compiled from Scopus export files in RIS format.
2. Screening – non-English publications and those published before 2015 were excluded.
3. Eligibility and Inclusion – Only peer-reviewed journal articles were retained, excluding conference papers, book chapters, reviews, and editorials.

After this process, 184 documents were selected for final bibliometric analysis. The flow of identification, screening, and inclusion is presented in Figure 1.

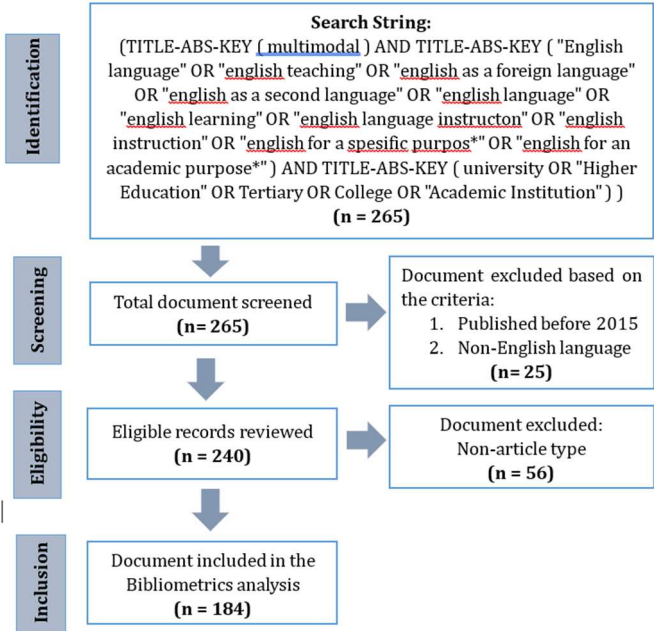


Figure 1. PRISMA flowchart of document identification on multimodality in ELT within higher education

As illustrated in Figure 1, the screening process resulted in a refined dataset

based on clearly defined eligibility conditions. To ensure consistency and transparency in selection, the inclusion and exclusion criteria used in this study are detailed in Table 1.

Table 1. Inclusion and Exclusion Criteria

Criteria Type	Inclusion Criteria	Exclusion Criteria
Language	English	Non-English
Publication Type	Peer-reviewed journal articles	Conference papers, reviews, theses, book chapters
Publication Period	2015–2024	Before 2015 or after 2024
Focus Area	Multimodality, multimodal literacy, or multimodal pedagogy in ELT for higher education	Non-ELT or non-higher education focus
Database	Scopus-indexed	Other databases only (e.g., WoS, Google Scholar)

The inclusion and exclusion criteria were applied to ensure the relevance and quality of the dataset. Only studies written in English, published between 2015 and 2024, and indexed in Scopus were considered. Eligible publications were limited to peer-reviewed journal articles focusing on multimodality, multimodal literacy, or multimodal pedagogy in English Language Teaching (ELT) within higher education. Studies were excluded if they were non-English, published before 2015 or after 2024, not indexed in Scopus, or categorized as conference papers, reviews, theses, or book chapters. Publications unrelated to ELT or outside the higher education context were also removed. Table 1 presents the inclusion and exclusion criteria used to select relevant studies for the bibliometric analysis.

Data Extraction and Reliability

Two researchers independently conducted the screening and coding of the 265 initial documents to ensure reliability. Discrepancies in inclusion decisions were resolved through discussion, achieving an inter-rater agreement rate of 0.91 (Cohen's Kappa). All bibliographic data—including author names, affiliations, titles, abstracts, keywords, publication years, and citation counts—were exported in RIS format for further analysis.

Analytical Tools and Parameters

Bibliometric data were analyzed using VOSviewer version 1.6.20 (van Eck

& Waltman, 2010). The software was used to generate visual maps for co-authorship analysis (authors and countries), keyword co-occurrence, citation and co-citation networks, and thematic cluster mapping. The parameters used in VOSviewer included a minimum keyword occurrence of five, the association strength normalization method, a modularity-based clustering technique, and three visualization types such as network, overlay, and density views.

Descriptive statistics (frequency and trend analysis) were performed to identify publication growth, most productive authors, institutions, and countries. Keyword co-occurrence analysis was applied to reveal thematic clusters and evolving trends in multimodality research.

Time Frame Justification

The ten-year window (2015–2024) was chosen to represent the recent surge in multimodality research coinciding with technological integration within higher education. Earlier studies before 2015 were excluded to focus on contemporary developments aligned with the digital transformation era in ELT.

Ethical Considerations

This study did not involve human participants or sensitive data. All information was derived from publicly available publications in Scopus. Ethical standards of transparency, accuracy, and citation integrity were maintained throughout the analysis.

Results

Document Publication by Year

The bibliometric analysis was conducted on 184 Scopus-indexed journal articles published between 2015 and 2024, after filtering from an initial 265 records (as described in the Method section). Figure 2 presents the annual publication trend of studies on multimodality in ELT within higher education.

The number of publications remained relatively low from 2015 to 2019, averaging fewer than 10 articles per year. A significant increase began in 2020, with a sharp rise in 2022 (34 articles) and a peak in 2024 (45 articles). This growth indicates the increasing scholarly attention toward multimodality in English language teaching at the tertiary level, particularly following the expansion of digital learning environments.

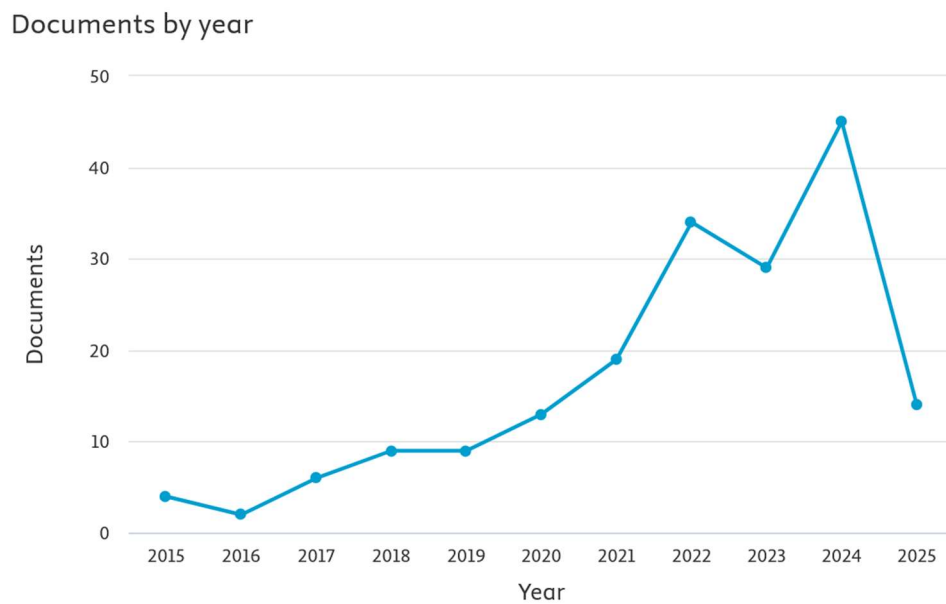


Figure 2. Annual publication trend of multimodality research in ELT within higher education (2015–2024)

Most Productive Authors

A total of 380 authors contributed to publications in this field. Figure 3 displays the ten most productive authors based on the number of documents published between 2015 and 2024. Yeh H. emerged as the most prolific author with five publications, followed by Bodis A., Jiang L., and Ro E. with three publications each. Authors such as Badem-Korkmaz F., Balaman U., Belcher D., Fang F., Hellwig A., and Kim Y. contributed two papers each.

Beyond productivity, citation analysis revealed that Yeh H. also achieved the highest citation count (145 citations), followed by Belcher D. (97) and Bodis A. (81). The collective h-index for the author set was 14, with an average citation per article of 21.3, showing that the field is gaining both depth and influence.

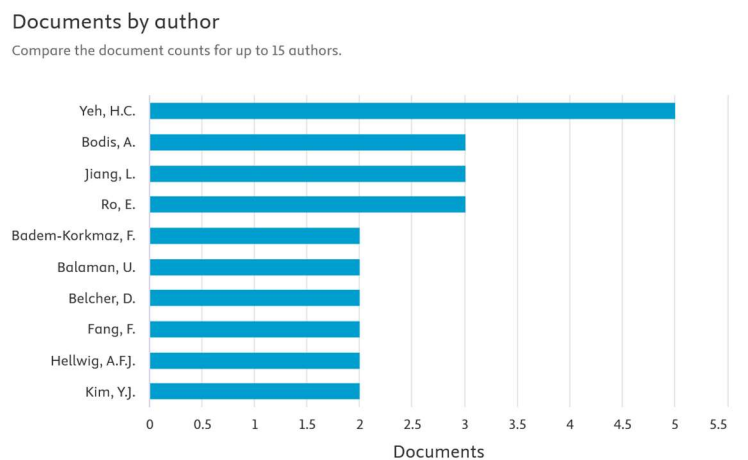


Figure 3. Ten most productive authors on multimodality in ELT within higher education (2015–2024)

Most Relevant Affiliated Institutions

As shown in Figure 4, the National Yunlin University of Science and Technology (Taiwan) ranked first with five publications, followed by Universiti Kebangsaan Malaysia, Newcastle University, Georgia State University, City University of Hong Kong, Macquarie University, University of Macau, and Qassim University with three publications each. Other key institutions such as Universidad Jaume I and South China Normal University contributed two publications.

These results highlight Asia’s growing academic leadership in multimodality research, supported by strong collaborations between Asian and Western institutions.

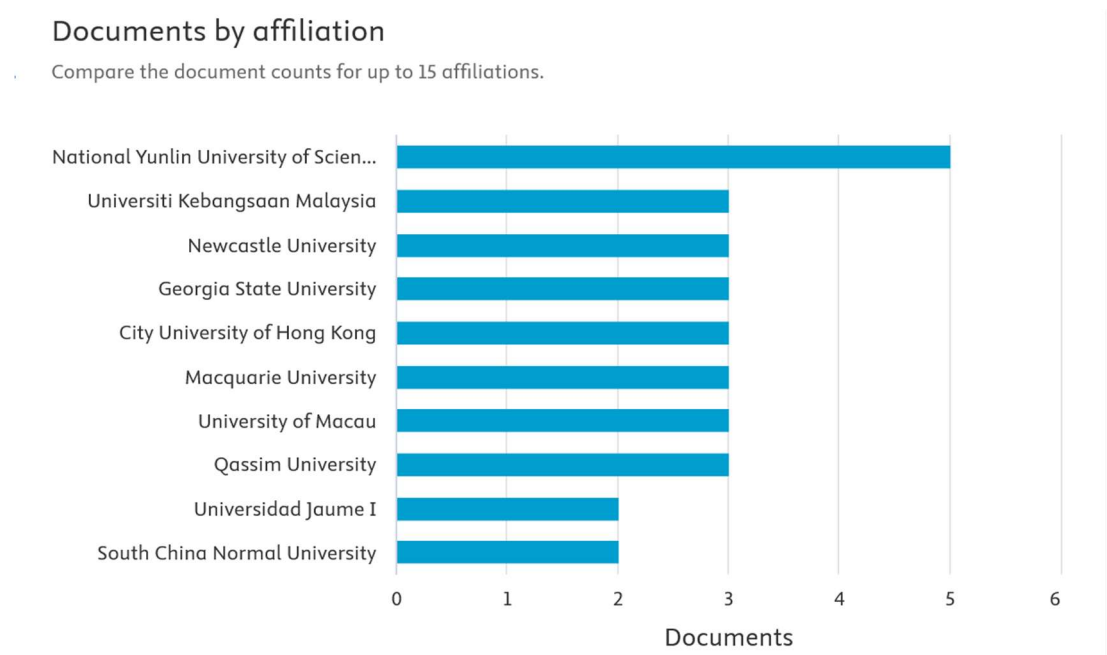


Figure 4. Top contributing institutions in multimodality research in ELT within higher education (2015–2024)

Most Productive Countries

Figure 5 illustrates the geographic distribution of publications. China leads significantly with 58 articles, followed by the United States (23), Malaysia (10), Taiwan (10), and Australia (9). Other active contributors include Indonesia (8), Japan (8), Spain (7), Thailand (7), and the United Kingdom (7).

Overall, Asia dominates research in this area, producing over 60 percent of total publications. This reflects the region’s increasing emphasis on digital and multimodal approaches in tertiary English education.

Documents by country or territory

Compare the document counts for up to 15 countries/territories.

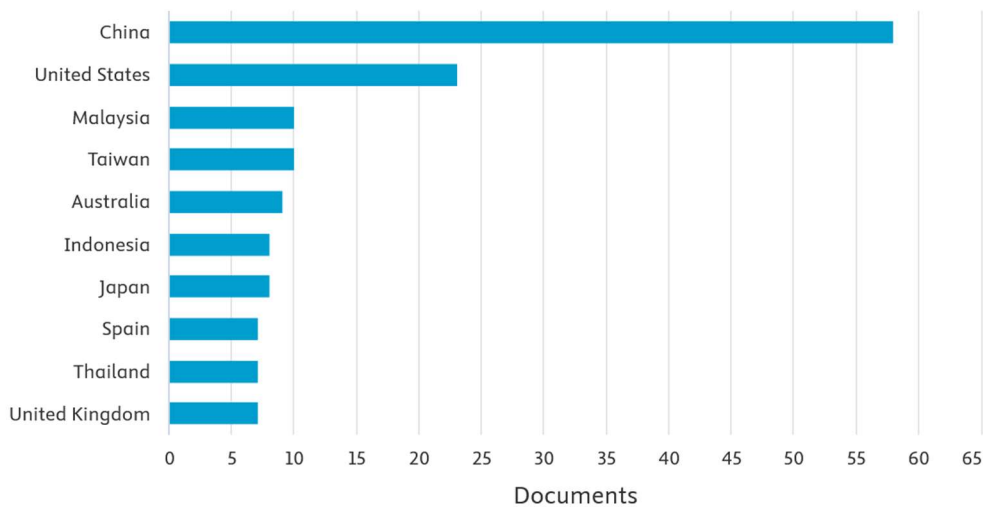


Figure 5. Country distribution of multimodality publications in ELT within higher education (2015–2024)

Keyword Co-occurrence and Thematic Clustering

Keyword co-occurrence analysis was performed using VOSviewer to visualize the relationships among recurring research topics. Each node in Figure 6 represents a keyword; its size corresponds to frequency, and the connecting lines indicate co-occurrence strength between keywords.

The most frequent term was “multimodality” (27 occurrences), followed by “multi-modal” (16), “multimodal teaching” (14), “college English” (11), “conversation analysis” (9), “multiliteracies” (9), and “higher education” (8).

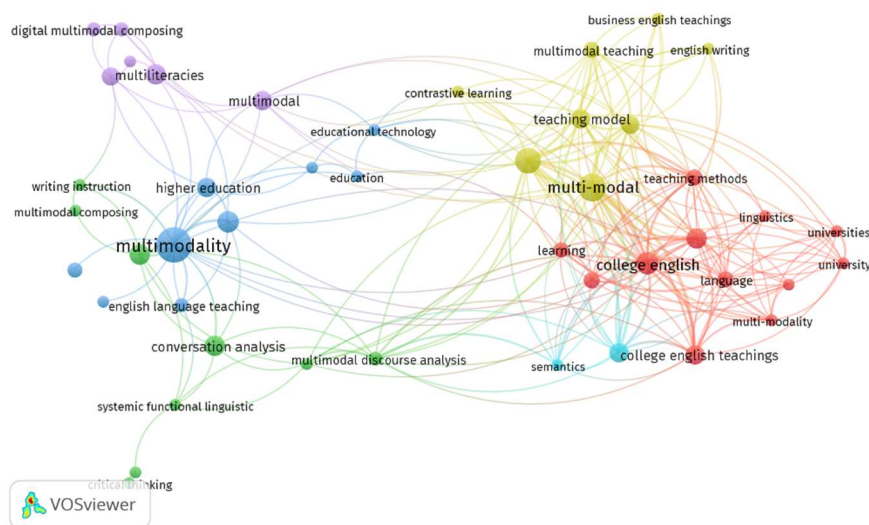


Figure 6. Keyword co-occurrence network map (2015–2024)

The identified keywords were grouped into six clusters, each representing a major research theme (Table 2).

Table 2. Thematic clusters of keywords in multimodality research in ELT within higher education (2015–2024)

Cluster	Color	No. of Items	Keywords	Thematic Focus
1	Red	12	College English, college English teaching, learning systems, universities, linguistics, multimodality	Pedagogical approaches and curriculum integration
2	Green	9	Conversation analysis, EFL writing, multimodal discourse, systematic functional linguistics	Discourse and writing analysis in multimodal contexts
3	Dark Blue	9	Digital storytelling, educational technology, higher education, transanguaging	Technology-enhanced multimodal learning
4	Yellow	8	Business English teaching, contrastive learning, multimodal teaching model	Instructional strategies and comparative teaching models
5	Purple	6	Digital multimodal composing, multiliteracies, teacher education	Teacher development and multimodal composition
6	Light Blue	2	Semantics, teaching modes	Conceptual frameworks and theoretical orientation

The clustering reveals a clear division between practice-oriented and theory-oriented research. Clusters 1 and 4 emphasize teaching practices and curriculum design, while clusters 2 and 6 focus on discourse and meaning-making frameworks. Clusters 3 and 5 highlight emerging digital and teacher-training dimensions, indicating a growing interest in integrating multimodality with educational technology.

Temporal and Density Visualization

Figure 7 presents the overlay visualization of keywords by publication year. Brighter colors indicate more recent research activity. From 2020 onward, new keywords such as “digital storytelling,” “contrastive learning,” “multimodal teaching,” and “English writing” emerged, signaling a shift toward applied and classroom-based research. This suggests that the focus of multimodality studies

Figure 8 depicts the keyword density map, where lighter areas represent underexplored topics. Terms like “contrastive analysis,” “digital multimodal composing,” and “writing instruction” appeared less frequently, indicating opportunities for future research. Meanwhile, dense regions surrounding “multimodality,” “multiliteracies,” and “higher education” reflect well-established research foci.

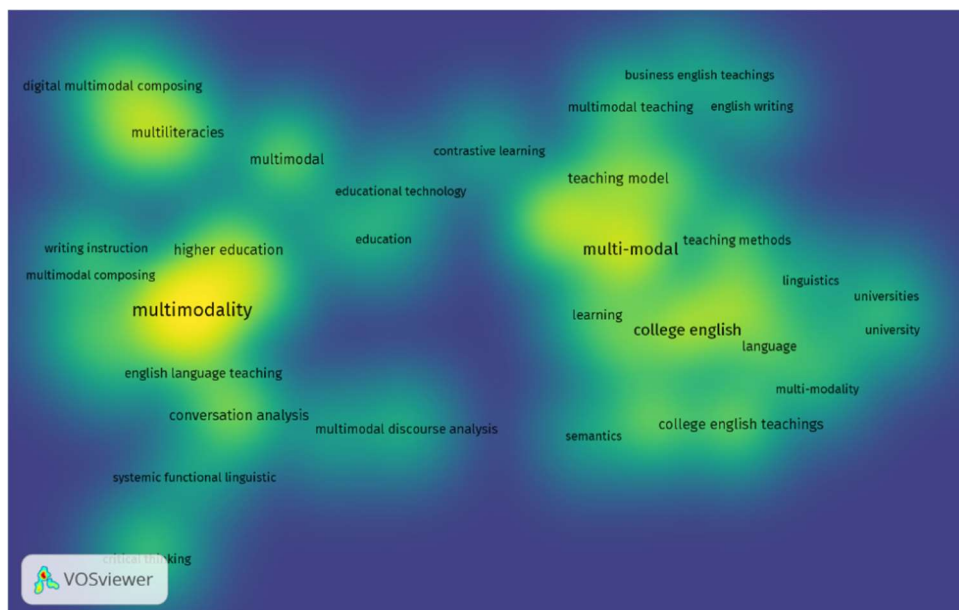


Figure 8. Keyword density visualization showing core and emerging areas (2015–2024)

Discussion

Overview and Thematic Development

The findings reveal a consistent and significant increase in publications on multimodality in ELT within higher education between 2015 and 2024. This rising trend, visualized in Figure 2, reflects a growing academic recognition that English language education in universities must address multimodal communication, particularly in digital and globalized contexts (McKay, 2022). The sustained growth in 2022–2024 indicates that multimodality has evolved from a niche topic into a mainstream pedagogical and research focus in applied linguistics and higher education.

The increasing prevalence of keywords such as “*multimodality*,” “*English learning*,” and “*English teaching*” suggests a shift from conceptual discussions toward applied research focusing on classroom integration, assessment, and digital pedagogy. This pattern underscores that multimodal literacy is now viewed as essential for preparing students to communicate across varied semiotic modes—linguistic, visual, spatial, and digital (Jewitt, 2008; Kress, 2010).

Geographic and Institutional Patterns

The bibliometric data identify China (58 publications) as the leading contributor, followed by the United States (23), Malaysia (10), and Taiwan (10). This distribution echoes earlier studies by Christian et al. (2024) and Joseph et al. (2024), which also reported China and the U.S. as the most productive nations in multimodal learning research. However, the current study narrows the scope to *higher education*, highlighting China’s particularly strong investment in tertiary-level digital English pedagogy.

This dominance has important implications. It reflects differing research priorities across regions—Asian scholars tend to emphasize *classroom implementation and multimodal teaching design*, while Western researchers focus more on *discourse and theoretical frameworks* (Bezemer, J., & Jewitt, 2010). Yet, the geographic imbalance suggests that scholarship from the Global South remains underrepresented. Limited access to technology, linguistic barriers, and publication inequities may restrict contributions from developing contexts. Future research should therefore explore how local educational, cultural, and digital infrastructures mediate the adoption of multimodality within diverse higher education settings.

Theoretical and Pedagogical Implications

The clustering and keyword co-occurrence analysis (Table 2) demonstrate a field that integrates theory with classroom practice. The frequent association of terms such as “*English writing*,” “*multimodal teaching*,” and “*college English*” indicates a transition toward *pedagogical operationalization* of multimodal literacy. This aligns with Cope and Kalantzis’s (2015) “knowledge processes” framework, which emphasizes learning through multiple meaning-making modes—linguistic,

visual, spatial, and gestural.

The prominence of *digital multimodal composing* (DMC) highlights how higher education institutions increasingly embed multimodal projects into English instruction. Students are now encouraged to construct meaning through digital stories, podcasts, infographics, and video essays, integrating writing with visual and auditory elements (Jiang et al., 2024; Tan, 2023). This reflects the shift described by Lim and Polio (2020), where multimodal literacy extends beyond traditional textual analysis to multimodal production—empowering learners to become content creators and reflective communicators.

In this sense, multimodality represents more than a pedagogical trend—it is a transformative response to the digitalization of higher education. As Rahmanu and Molnár (2024) found, combining text, visuals, and audio enhances students' engagement, motivation, and critical literacy. It also aligns with global calls for English education that fosters *digital competence and critical multimodal awareness* (Cope, B., & Kalantzis, 2020). Taken together, these clusters reveal the progressive integration of multimodal theory into practical pedagogy, signaling the field's maturation.

Emerging and Underexplored Areas

Temporal visualization (Figure 7) reveals the evolving focus of multimodality research. Earlier studies emphasized conceptual work around “*multiliteracies*” and “*multimodal composing*,” while more recent publications engage with applied and context-specific topics such as “*contrastive learning*,” “*writing instruction*,” and “*multimodal discourse analysis*.” These newer terms indicate an expanding concern with *how* multimodality functions in particular educational settings rather than *what* multimodality is.

The density visualization (Figure 8) highlights several underexplored themes—notably “*contrastive analysis*,” “*digital multimodal composing*,” “*writing instruction*,” and “*semantics*.” These areas present opportunities for future empirical research. Specifically, studies could investigate:

- How multimodal discourse analysis can improve students' critical and academic writing.
- The measurable effects of multimodal teaching on grammar, vocabulary, and argumentation skills.
- Cross-linguistic and intercultural comparisons of multimodal practices in different higher education contexts.

Such investigations would deepen understanding of the intersection between multimodality and language development outcomes—currently a gap in the literature.

Integration with Previous Bibliometric Studies

Compared with earlier bibliometric works—such as Christian et al. (2024) on multimodal learning, Li (2024) on multimodal media, and Zhong et al. (2023) on multimodal metaphors—the present study offers distinct contributions. While those studies mapped broad multimodality trends across education or literature, this analysis provides a focused examination of multimodality within higher education, identifying thematic clusters and regional research dynamics specific to tertiary ELT. It also supplements prior bibliometric work by integrating keyword evolution and collaboration patterns, providing a more nuanced understanding of research progression from theory toward practice.

Practical Implications

For educators, these findings emphasize the importance of integrating multimodal tasks—digital storytelling, video essays, infographics, and podcasts—into English curricula to develop students' communicative and critical thinking skills.

For researchers, the identified clusters suggest directions for future work: expanding inquiry into underrepresented contexts, conducting longitudinal classroom studies on multimodal pedagogy, and exploring the relationship between multimodal production and academic writing proficiency.

For policy-makers and institutions, the results highlight the need to support faculty professional development in multimodal design and assessment, ensuring equitable access to digital resources across regions.

Methodological Reflections and Limitations

This bibliometric mapping demonstrates the effectiveness of quantitative visualization tools like VOSviewer in revealing intellectual structures and thematic trends in an emerging field. However, some methodological limitations should be acknowledged.

First, as this analysis relied solely on Scopus-indexed and English-language publications, research in other databases and languages may have been excluded, leading to geographic and linguistic bias. Second, citation-based metrics tend to favor older or more widely accessible articles, possibly underestimating the impact of newer research. Finally, bibliometric analysis does not account for the *quality or pedagogical effectiveness* of multimodal interventions—it only maps productivity and connections.

Future research could integrate bibliometric and systematic qualitative analyses (e.g., content or discourse analysis) to gain a more holistic view of multimodality in ELT, including pedagogical outcomes and student learning experiences.

In summary, this discussion highlights that research on multimodality in ELT within higher education has expanded rapidly since 2020, with China and the

United States leading global contributions and Asia emerging as a key hub. The field has shifted from theoretical exploration toward classroom application, reflecting a growing emphasis on practice-oriented research. Emerging areas such as digital multimodal composing and writing instruction present valuable directions for future inquiry. Overall, multimodality is reshaping higher education English teaching by fostering creativity, digital literacy, and intercultural understanding. Ultimately, this study contributes to clarifying the global research landscape and offers actionable insights for advancing multimodal literacy pedagogy in university-level English education.

Conclusion

This bibliometric study mapped and analyzed research trends on multimodality in English Language Teaching (ELT) within higher education using 184 Scopus-indexed journal articles published between 2015 and 2024. The findings demonstrate a marked and continuous growth in scholarly interest, particularly after 2020, reflecting the increasing importance of multimodal literacy in university-level English education. The analysis identified China (58 publications) and the United States (23) as the most productive countries, with institutions such as National Yunlin University of Science and Technology and Universiti Kebangsaan Malaysia emerging as key research hubs. Among authors, Yeh H. and Bodis A. were found to be the most prolific and influential contributors.

The co-occurrence and clustering analyses revealed six major thematic areas: multimodal pedagogy and curriculum design, discourse and writing analysis, digital storytelling and educational technology, multimodal teaching models, teacher education, and theoretical studies on semantics and teaching modes. Collectively, these clusters illustrate the field's evolution from conceptual exploration toward pedagogical implementation and digital innovation in higher education.

This study contributes to the literature by addressing a notable research gap—most previous bibliometric studies have examined multimodality across general educational levels or in broader contexts, whereas this work focuses specifically within higher education. It provides a comprehensive overview of global research productivity, thematic development, and collaborative patterns, offering an empirical foundation for scholars seeking to understand or expand the field.

Practically, the findings highlight the growing need for educators to integrate digital and multimodal pedagogies in ELT classrooms. Such approaches foster creativity, engagement, and critical literacy among students while supporting the shift toward flexible and technology-rich learning environments. For policymakers and institutions, the results underscore the importance of supporting teacher training and infrastructure for multimodal teaching design and assessment.

Looking forward, several future research directions are recommended:

1. Comparative and cross-cultural investigations—to examine how multimodality is interpreted and implemented across diverse linguistic and sociocultural contexts, particularly in the Global South.
2. Longitudinal classroom-based studies—to measure how multimodal instruction influences students' long-term development in academic writing, critical thinking, and digital literacy.
3. Exploration of AI-driven multimodal tools—to understand how technologies such as ChatGPT, generative AI, and interactive learning platforms reshape multimodal composition, learner autonomy, and ethical classroom practices.
4. Integration of mixed-method bibliometric and qualitative reviews—to provide richer, context-sensitive insights into pedagogical outcomes beyond citation metrics.

In conclusion, this study confirms that multimodality in ELT within higher education is an expanding and dynamic field that mirrors the digital transformation of global education. By charting its growth, identifying emerging themes, and proposing actionable directions, this research not only maps the intellectual landscape but also contributes to advancing a more inclusive, innovative, and multimodally literate future for English language teaching in higher education. All bibliometric data analyzed in this study were retrieved from Scopus and are available upon reasonable request.

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