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A Bibliometric Survey on Multimodal Discourse Analysis (2015–2024): *Looking Behind to Look Ahead*

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Abstract

Different from traditional discourse analysis, multimodal discourse analysis (MDA) investigates multiple semiotic modes such as language, images, and sounds. It emphasizes the coordination between dynamic and static semiotic resources in discourse. This study conducts a quantitative bibliometric analysis to explore the research trends, hotspots, and intellectual structure of MDA, aiming to provide a comprehensive overview of its development and evolution. Using VOSviewer 1.6.20 software, this study assessed existing publications, particularly those conducted between 2015 and 2024, presenting the status quo and development trend of the research field through an objective, systematic, and comprehensive review of relevant publications available from Scopus. A total of 1562 articles on MDA were identified, with contributions from 2081 institutions across 81 countries and regions. The research findings are as follows: (1) in the past 10 years, international MDA research has presented a significant growth trend, with flourishing research output, interest and diversification of presented subjects; (2) emerging research trends in MDA highlight a growing focus on digital discourse, crisis communication, and global sociopolitical contexts.; (3) critical and ideological analyses are gaining prominence, alongside increasing interest in multimodal literacy within educational and ESP settings etc.; (4) the field is also expanding into interdisciplinary and applied domains, emphasizing real-world applications across media, education, and public policy. This study provides valuable insights into the development of MDA and serves as a reference for future research in the field.

Keywords: multimodal discourse analysis (MDA), bibliometric survey, Scopus, VOSviewer 1.6.20

1. Introduction

Multimodal discourse can be defined as the modes and media of contemporary communication (Kress, 2001) that encourage a variety of sensations such as sight, hearing and touch employing languages, images, sounds, motions and other symbol resources. Multimodal Discourse Analysis (hereafter MDA) is a type of discourse analysis that focuses on the transmission of information through different modes, which is the combination of different communication methods such as words, sound, pictures and action, etc. Therefore, MDA considers how a text draws on different modes of communication such as pictures, sound, and video in combination with words to express meaning.

In the last decade, MDA has developed into a dynamic and interdisciplinary domain within applied linguistics, exerting profound influence across fields such as linguistics, education, psychology, and the arts through the integration of theoretical and methodological insights from semiotics, communication studies, and media analysis. Unlike traditional discourse analysis, which centers primarily on verbal language, MDA expands the analytical fields to multiple semiotic modes—such as visual imagery, gesture, spatial arrangement, and digital interaction—that co-construct meaning in contemporary communication (Jewitt et al., 2016; Kress & van Leeuwen, 2001; van Leeuwen, 2011).

This shift reflects the evolving nature of communication in increasingly digital, multimedia-rich contexts where

meaning is rarely conveyed through language alone (O'Halloran, 2004; Scollon & Levine, 2004). MDA's relevance has grown alongside the rise of digital platforms, online learning, and visual communication in media and education (Machin & van Leeuwen, 2016). Since the mid-2010s, a growing body of literature has examined how meaning is constructed across modes, drawing from diverse theoretical frameworks such as systemic functional linguistics, visual grammar, and social semiotics.

However, despite its expanding influence, the field still lacks a systematic, data-driven overview of how it has developed over the past decade. While prior studies have explored multimodality from theoretical or case-based perspectives, few have quantitatively assessed the trace, contributors, and hot topics of MDA at scale. With the concurrence of more and more direct related research, it is essential to analyze the research characteristics, hot topic distribution and future research direction of multimodal discourse research field and propose the research prospects so as to provide theoretical basis and practical guidance for the academic research.

To address this gap, this study conducts a bibliometric survey of papers published on MDA from 2015 to 2024. Using data retrieved from the Scopus database and analyzed with VOSviewer 1.6.20, this review maps status quo, the research hot topics in MDA over the past decade as well as its future development. Specifically, it aims to answer the following questions:

1) What are the general features (publication trend, most influential authors, institutions, journals and countries) in the filed of MDA from 2015 to 2024?

2) What are the main research topics and emerging trends in MDA based on keywords analysis?

By offering a systematic and visual representation of the MDA research landscape, this study not only highlights key developments and gaps in the literature but also provides a route diagram for scholars and educators interested in contributing to this developing field.

2. Materials and Methods

2.1 Source Database

A bibliometric survey employs measurement techniques, including mathematics and statistics, to analyze the distribution structure of literature, quantitative relationships, change patterns, and quantitative management, primarily utilizing citation analysis, data mining, and information visualization (Almas et al., 2022). Over the years, it has been used to identify statistical trends in bibliography studies conducted in a variety of academic domains. It has the advantage of bringing a systematic, transparent, and reproducible review procedure based on the statistical assessment of science, scientists, or scientific activity, which is in contrast to the traditional literature review (Ellegaard & Wallin, 2015). As a result, bibliometric analysis can provide the foundation for a topic's development in distinctive and meaningful ways; it empowers researchers to obtain a thorough overview, identify knowledge gaps, and provide original research ideas (Sweileh, 2020).

The data used in this study were sourced from Scopus. Scopus, operated by the Elsevier publishing group, is one of the world's largest abstracts and reference text databases, covering more than 25,000 peer-reviewed articles, conference papers, and academic books. It covers multiple disciplines such as natural science, social science, human writing, and art, and enjoys high academic credibility and authority and efficiently realizes one-stop literature search, and track, analyze and visualize research on scientific research content.The database compiles references cited in papers and generates a unique citation index based on cited authors, sources, and publication age, serving as a valuable window into the research achievements of world-renowned scholars. Furthermore, with its well-organized metadata and extensive citation information, Scopus facilitates bibliometric analysis using tools such as VOSviewer, CiteSpace, and Bibliometrix. These capabilities support the development of literature reviews, knowledge mapping, and the identification of emerging research trends and thematic clusters.

2.2 Research Tools

The objective of this paper is to survey the scholarly productivity of MDA, identify and visualize the research trends and characteristics of MDA over the last decade. The analysis are fulfilled with the help of the freely available software tool VOSviewer 1.6.20. VOSviewer 1.6.20, an extensively utilized application, is coded in Java (Chen, 2006; Chen et al., 2010). It allows researchers to import bibliographic data from various sources like Scopus, Web of Science, PubMed and others. It is an excellent visualization tool developed by Nees Jan Van Eck and Ludo Waltman (van Eck & Waltman, 2010) to construct and visualize bibliometric networks between keywords, authors, or organizations in a literature search. It is used to visualize the collected data and construct the science-mapping of co-author network, co-occurrence network and institutional cooperation.

2.3 Methods

The present study carefully selected Scopus as the data source with (TITLE-ABS-KEY (multimodal AND discourse AND analysis OR multimodality) AND LANGUAGE (english)) AND PUBYEAR > 2014 AND PUBYEAR < 2025 AND (LIMIT-TO (DOCTYPE , "ar")) as the combining queries. The search terms included in the title, abstract, and keywords are "multimodal discourse analysis or multimodality". The study period spanned from 2015 to 2024. The document type was restricted to "article" and "review". The language was restricted to "English". The data retrieval was completed by February 12, 2025. The preliminary results including 1584 articles and 37 reviews were downloaded and each bibliometric item including the title, keywords and abstract of each article was read in order to screen out articles beyond the scope of this research field. The results were double checked for consistency by the two authors. Items with inconsistencies were discussed, and finally a total collection of 1562 publications were included. The research criteria and methods are presented in Figure 1.

To ensure the validity and reliability of the bibliometric information, two rounds of data cleaning were performed. The first round checked manually whether the title, abstract, keywords, author, publication year and other bibliographic information are complete. For example, some articles lack keywords, and it is necessary to extract them from their abstracts. The second round of data cleaning was performed by VOSviewer 1.6.20 to compare keywords as well as author's name that may use different expressions to refer to the same one. For example, multimodal discourse analysis and MDA are two different forms but refer to the same analytical framework.

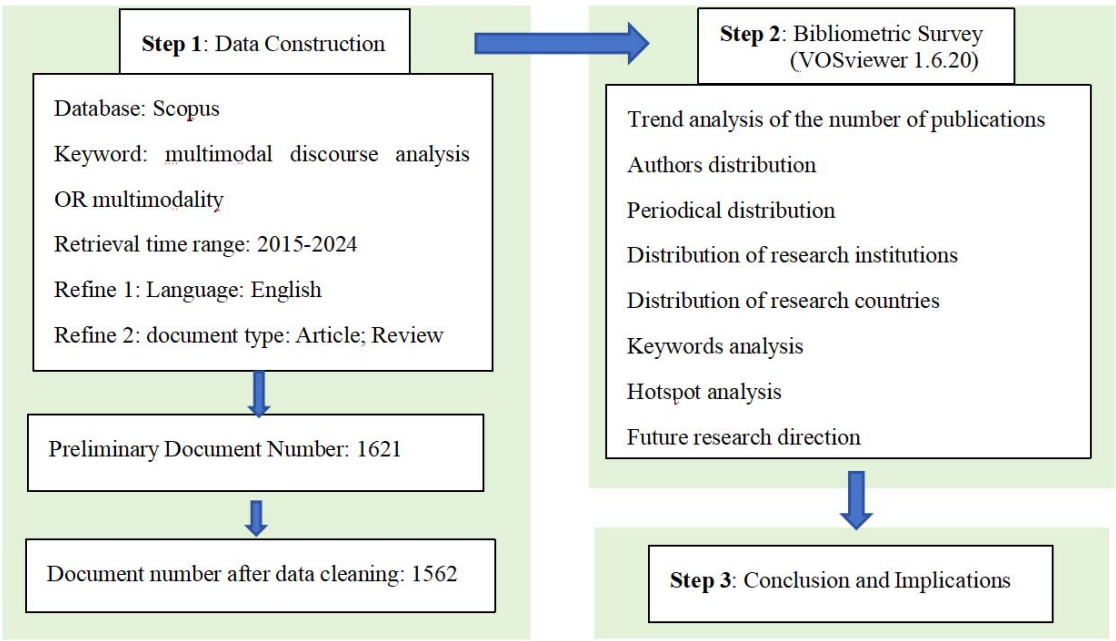


Figure 1. Steps of bibliometric survey on MDA

3. Results and Discussion

3.1 Trend Analysis of the Number of Publications

As can be seen in Figure 2, the number of publications on MDA has shown a clear increasing trend over the past decade. The annual publication data from 2015 to 2024 were analyzed and fitted with an exponential model $y = 53.46e^{0.2019x}$, demonstrating a high coefficient of determination ($R^2 = 0.9796$). This suggests that the research interest in MDA has grown exponentially, indicating its increasing importance in linguistic and interdisciplinary studies (Bornmann & Mutz, 2015; De Bellis, 2009). Its evolution can be categorised into three phases. During the first stage (2015–2017), there were few articles published and no general methodologies (68 publications on average per year). At this stage, the majority of studies were founded on theoretical fundamentals and on small-scale case analyses, which could be considered the beginning of academic interests in this domain (Kress & van Leeuwen, 2001; O' Halloran, 2011). The second period (2018–2020) saw a constant growth, with the

average number of papers published of 120/year. Abstract Some specific MDA frameworks, including visual grammar and multimodal critical discourse analysis, were studied in more detail. Possibly, a small stagnation was observed in 2020 probably due to COVID-19 spread around the world. In the third period (2021–2024) there is an accelerated expansion, the number of annual publications growing abruptly, approaching to 350 in 2024. This increase can be related to the interest in recent years in digital multimodality, social media discourse and the interaction between MDA and corpus linguistics and AI.

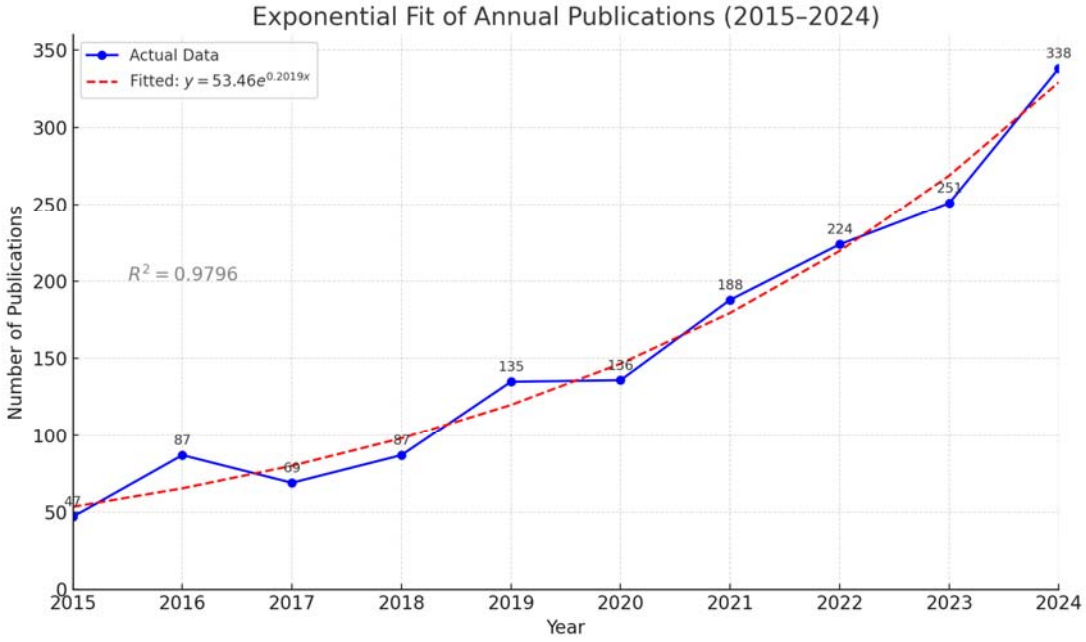


Figure 2. Exponential fit of annual publications (2015–2024)

3.2 Most Productive Contributors at Various Levels

3.2.1 Top Prolific Authors

According to Price's Law $M \approx 0.749 \times \sqrt{N_{max}}$ (N_{max} represents the number of publications by the most prolific author in the field), authors who have published at least 4.80 can be considered as core authors in this research field. The data were analyzed by using Vosviewer software the "co-authorship" type for the "author" unit of analysis, with "Minimum number of documents of an author" set 5 to show core authors , yielded 47 results. The distribution of the 47 core authors within the field of MDA can be seen in Figure 3.

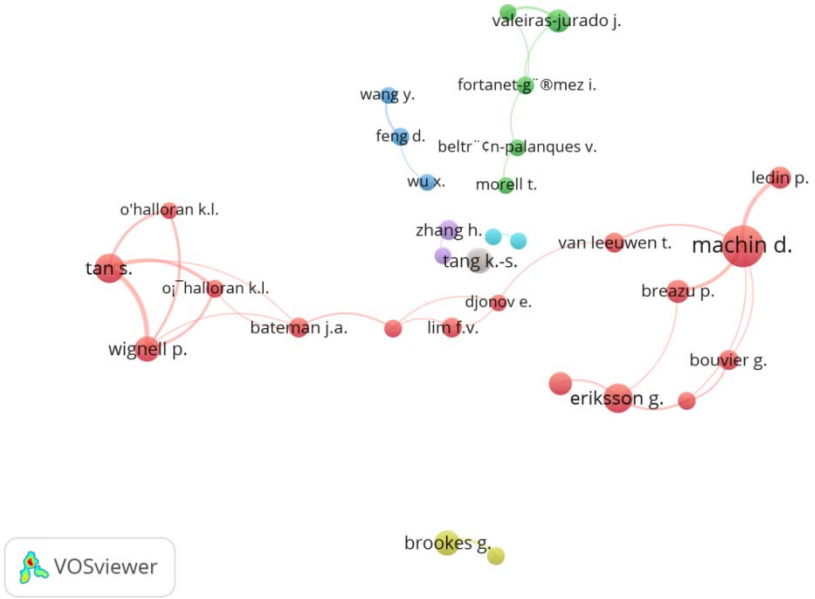


Figure 3. Co-authorship map of authors

Table 1. Top 20 authors for publication in MDA

Rank	Author	Documents	Total link strength	Citations
1	Machin d.	23	18	516
2	Eriksson g.	13	6	423
3	Tan s.	13	21	221
4	Tang k.-s.	11	0	143
5	Brookes g.	10	6	314
6	Wignell p.	10	19	187
7	Breazu p.	9	7	126
8	o'Hagan l.a.	9	2	120
9	Valeiras-Jurado j.	9	5	102
10	Ledin p.	8	8	168
11	Wildfeuer j.	8	0	85
12	Abdel-Raheem a.	7	0	378
13	Alyousef h.s.	7	0	202
14	Bateman j.a.	7	5	124
15	Bouvier g.	7	3	103
16	Catalano t.	7	0	101
17	Lim f.v.	7	2	55
18	Van Leeuwen t.	7	3	46
19	Zappavigna m.	7	0	35
20	Zhang h.	7	1	21

Based on the co-authorship network visualization (Figure 3) from VOSviewer and the accompanying author metrics (Table 1), it can seen that David Machin stands out notably as the most productive author, with 23 papers and 516 citations, forming a dense collaborative network with scholars like Eriksson, Ledin, and Bouvier, suggesting a dominant research group focused on multimodal critical discourse and media analysis (Machin & Mayr, 2012; Machin & Ledin, 2020). As the red cluster's focal points, Tan and Wignell exhibit significant collaborative patterns, as shown by their high total link strengths (21 and 19, respectively), which reflect an emphasis on social semiotics and multimodality (Tan, 2014; Wignell et al., 2016). However, while having a large number of scholarly publications and citation impacts, writers like Tang K.-S. and Brookes G. exhibit little to no collaboration, suggesting that their study may follow more independent subjects (Tang, 2020; Brookes, 2018). Other smaller groups, like the green cluster, which included Valeiras-Jurado and Fortanet-Gómez, focused primarily on academic discourse and English for Specific Purposes (ESP) (Fortanet-Gómez, 2013).

3.2.2 Top Productive Journals

The data was analyzed by using Vosviewer software the "co-authorship" type for the "organization" unit of analysis, with "Minimum number of documents of an organization" set 1 to show all the countries included, yielded 692 results. According to Price's Law $M \approx 0.749 \times \sqrt{N_{max}}$ (N_{max}represents the number of publications by the most productive journals in the field), journals which have published at least 7.48 can be considered as core journals in this research field, 29 journals of all 692 can be considered as core journals. The distribution of the core journals can be categorized into two clusters. The co-occurrence network analysis of core journals (see Figure 4) reveals two clusters within the field of MDA. The first cluster was centered on language, discourse, and social semiotics (e.g., *Critical Discourse Studies, Social Semiotics*). The second cluster was centered in visual communication and interdisciplinary applications (e.g., *Journal of Visual Literacy, Frontiers in Psychology*). Journals with more than 25 publications (see Table 3) included *Social Semiotics* (N = 56 articles, comprising 3.59% of the total articles), *Discourse, Context and Media* (N =50, 3.2%), *Multimodal Communication* (N = 39, 2.25 %), *Discourse And Communication*(36), *Visual Communication*(34) and *Critical Discourse Studies*(28).

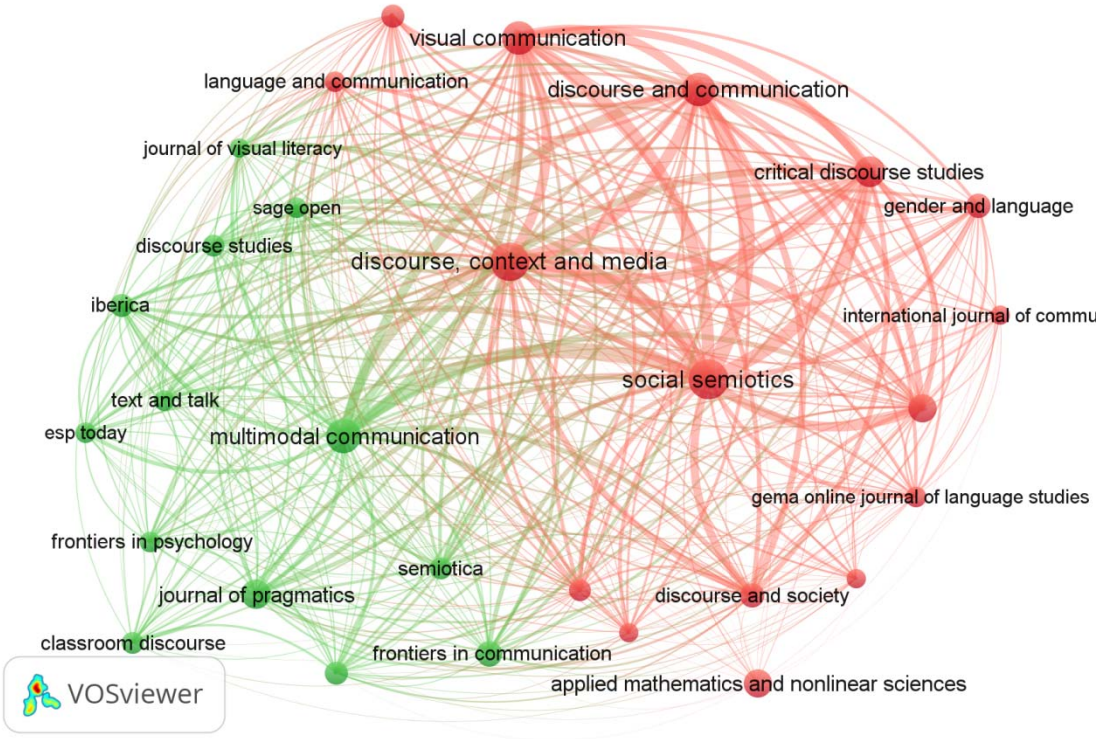


Figure 4. Co-occurrence map of the journals

Table 2. Top 20 journals for publication in MDA

Rank	Journal	Documents	Total link strength
1	social semiotics	56	16180
2	discourse, context and media	50	11902
3	multimodal communication	39	10027
4	discourse and communication	36	11936
5	visual communication	34	9043
6	critical discourse studies	28	9238
7	journal of pragmatics	24	3496
8	applied mathematics and nonlinear sciences	21	274
9	journal of language and politics	21	5737
10	frontiers in communication	17	2556
11	gender and language	15	2830
12	discourse and society	14	5174
13	Iberica	12	2773
14	linguistics and education	12	2158
15	theory and practice in language studies	12	2310
16	classroom discourse	11	1469
17	discourse studies	11	2104
18	language and semiotic studies	11	2956
19	Semiotica	11	2415
20	frontiers in psychology	10	1990
21	language and communication	10	2201
22	text and talk	10	1964

3.2.3 Most Influential Institutions

The data was analyzed by using VOSviewer software the “co-authorship” type for the “organization” unit of analysis, with “Minimum number of documents of an organization” set 1 to show all the organizations included, yielded 2081 results. The institutional distribution of publications shows that Örebro University (Sweden) is the most prolific contributor in the field of MDA, with 34 publications. Both Nanyang Technological University (Singapore) and Universitat Jaume I (Spain) follow with 19 publications each, while other institutions on list published fewer than 15 articles. In terms of research impact, the University of New South Wales (Australia) stands out, with only 4 publications getting 269 citations, averaging over 67 citations per article. Similarly, Curtin University (Australia) and Lancaster University (The United Kingdom) also show strong influence with high average citation counts.

Table 3. Top 20 institutions s for publication in MDA

Rank	Institution	Documents	Citations	Total link strength
1	Örebro University, Sweden	34	587	1
2	Nanyang Technological University, Singapore	19	196	2
3	Universitat Jaume i, Spain	19	174	2
4	Curtin University, Australia	13	257	1
5	Lancaster University, United Kingdom	9	170	2
6	Ghent University, Belgium	5	95	2
7	University Of Nottingham, United Kingdom	5	80	2
8	University Of New South Wales, Australia	4	269	2
9	National University Of Singapore, Singapore	4	80	1
10	University Of Bremen, Germany	4	42	0
11	King Saud University, Riyadh, Saudi Arabia	4	26	0
12	Universidad De Alicante, Spain	4	22	0
13	Universitat Polit Cnica De Val Ncia, Spain	4	10	0
14	University Of Groningen, Netherlands	4	4	1
15	University Of Colorado, Boulder, United States	3	56	0
16	Bremen University, Germany	3	46	0
17	University Of Southern Denmark, Denmark	3	44	2
18	University Of Sharjah, United Arab Emirates	3	34	0
19	Uppsala University, Sweden	3	30	1
20	University Of Bremen, Bremen, Germany	3	26	0

3.2.4 Geographical Distribution

The data was analyzed by using VOSviewer software the “co-authorship” type for the “country” unit of analysis, with “Minimum number of documents of a country” set 1 to show all the countries included, yielded 81 results. The U.S. leads in the number of papers, contributing 214 (of the total), followed by China with 200 (of the total) and Spain with 148 (of the total). the top 20 countries are listed in Table 4. Among all the 81 countries, 55 published more than 5 papers, 42 published more than 10 papers.

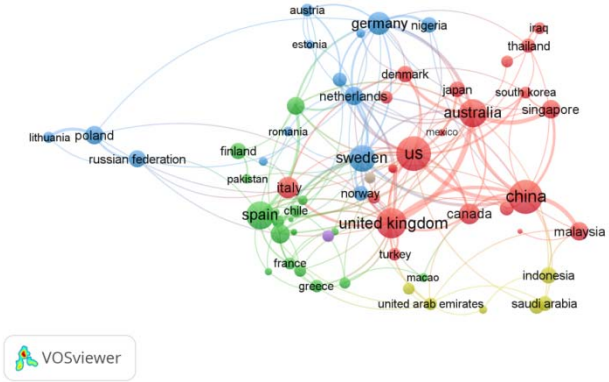


Figure 5. Co-occurrence map of countries

Table 4. Top 20 countries for publication in MDA

Rank	Country	Documents	Total link strength
1	Us	214	52
2	China	200	49
3	United Kingdom	148	59
4	Spain	118	29
5	Australia	115	59
6	Sweden	103	31
7	Germany	65	31
8	Italy	57	11
9	Canada	49	15
10	South Africa	39	19
11	Malaysia	36	12
12	Poland	36	11
13	Netherlands	35	29
14	Singapore	34	16
15	Belgium	31	19
16	Russian Federation	27	8
17	Finland	26	4
18	Denmark	25	14
19	Indonesia	25	3
20	Japan	22	10

The United States (214 documents) and China (200 documents) are the top two countries in terms of output, which makes sense given how much they spend on research around the world. Despite having somewhat fewer publications, the UK and Australia have the strongest total link strengths (both TLS = 59), indicating that their research communities are heavily involved in global partnerships. This is also consistent with the institutional data, where UK and Australian universities such as Lancaster University and Curtin University show strong network ties. This suggests that enhancing international cooperation, rather than solely increasing publications, will be key to promoting a country’s academic impact.

Total link strength (TLS) (see Tables 3 and 4) also shows differences in how people work together. For instance,

Sweden's leading university, Örebro University, has a TLS of just 1, despite the country's moderate national TLS of 31. This suggests that isolated academic clusters may occasionally be the source of high national output. In contrast, Singapore has moderate TLS (16) while having a small quantity of papers (34). This is bolstered by vibrant institutions such as Nanyang Technological University, which demonstrates both high productivity and strong collaborative linkages.

3.3 Keywords Analysis and Its Implications

Keywords serve a crucial function in indexing academic content and offering a succinct overview of a paper's central themes. When logically combined, they effectively encapsulate the core subject matter of the research.

3.3.1 High-Frequency Keyword Analysis

The data was analyzed by using VOSviewer software the "co-occurrence" type for the "author keywords" unit of analysis, with "Minimum number of documents of a keyword" set 1 to show all the keywords included, yielded 4985 results. To have a clear co-occurrence network the keywords for analysis, Top N rule was adopted to set 7 in the "Minimum number of documents of a keyword" and 111 met the threshold. As is shown in Table 5, "mda" (Multimodal Discourse Analysis) and "multimodality" are the most frequently occurring terms, with 333 and 332 occurrences respectively. This indicates that multimodal approaches to discourse are central to all the documents included. Following these, "mcda" (Multimodal Critical Discourse Analysis) occurs 180 times, further emphasizing the prominence of multimodality in current discourse studies. Other top frequency keywords include "cda" (Critical Discourse Analysis) with 102 occurrences, and "discourse analysis" with 91, suggesting that critical and analytical approaches to discourse remain foundational. Emerging areas of research are appeared in terms such as "social media" (86 occurrences), "social semiotics" (69), and "discourse" (57), indicating a shift to digital contexts and semiotic perspectives. Keywords like "covid-19" (35), "gender" (34), and "identity" (31) imply that current social issues are being integrated into the research of MDA. Keywords such as "translanguaging" (23), "conversation analysis" (22), and "neoliberalism" (19) suggest specialized or emerging areas within the broader field. Overall, the frequency distribution highlights the dominance of multimodal and critical paradigms in recent discourse studies, while also reflecting a growing engagement with digital and sociopolitical topics.

Table 5. Top 20 keywords in research of MDA

Rank	Keyword	Occurrences	Total link strength
1	MDA	333	328
2	multimodality	332	454
3	MCDA	180	181
4	CDA	102	198
5	discourse analysis	91	117
6	social media	86	155
7	social semiotics	69	124
8	discourse	57	101
9	covid-19	35	62
10	gender	34	53
11	gesture	31	47
12	identity	31	53
13	semiotics	31	65
14	systemic functional linguistics	31	50
15	advertising	29	57
16	visual grammar	27	43
17	ideology	26	47
18	translanguaging	23	23
19	conversation analysis	22	24
20	neoliberalism	19	39

3.3.2 Keyword Co-Occurrence Cluster Analysis

The keyword co-occurrence network map generated via VOSviewer offers a comprehensive visualization of the intellectual landscape of multimodal discourse analysis (MDA). As the core of a published article, keywords reveal the research's hot topics. Hence, through the co-occurrence analysis of high-frequency keywords, the research hotspots of a certain discipline can be identified (Chen et al., 2012). In Figure 6, the size of the circles

symbolizes the number of documents published. The larger the circle, the more documents it represents. The distance between two nodes is the strength of their connection. A lesser distance shows a stronger bond. The thicker the line is, the more often they occur together.The visualization reveals distinct clusters, each representing a cohesive thematic area within the field, and highlights emerging research trends based on keyword frequency and co-occurrence.

3.3.3 Keyword Co-Cccurrence Timeline and Density Analysis

VOSviewer 1.6.20 was used to analyze the timeline and density of keyword co-occurrence for the top 20 keywords. The overlay visualization map and the density visualization map depict the co-occurrence network of keywords with a color gradient that reflects the average publication year of documents associated with each keyword. Darker shades (blue-green) indicate earlier research focus, while lighter shades (yellow-green) reflect more recent attention (van Eck & Waltman, 2010).

As it can be seen from Figure 7 and Figure 8, earlier research (2015-2018) focused more on theoretical development and foundational methods (e.g., gesture, systemic functional linguistics), exploring how multimodal resources function within meaning-making systems (Jewitt, 2009; O'Halloran, 2008; García & Wei, 2014). Focus grew on representation (e.g., identity, gender, ideology) from 2019–2020. More recent keywords (2020–2024), shown in yellow-green tones, include "covid-19," "social media," "china," and "neoliberalism." This reflects a notable shift toward applying MDA in contemporary socio-political and digital contexts, especially during the global pandemic and amid rising concerns over ideological discourse and digital communication platforms (Ledin & Machin, 2020; Page, 2021).

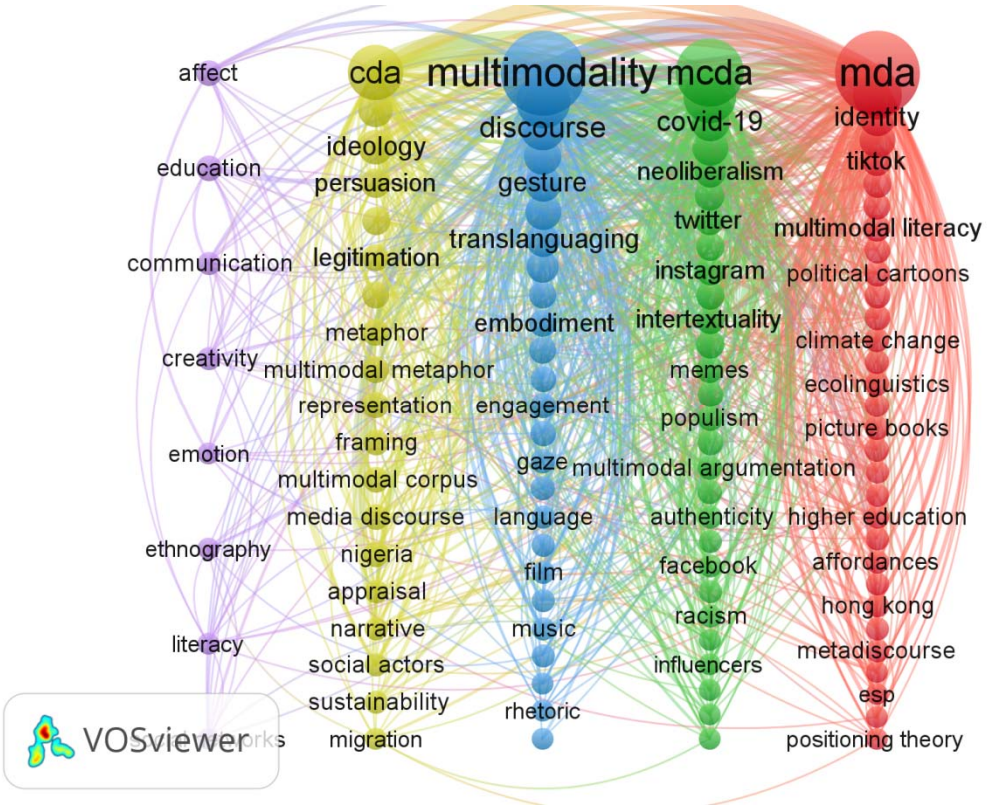


Figure 6. Network visualization of keywords

3.4 Hot Topics Analysis

The five clusters in the network visualization conveys the hot topics in the field of MDA, which is dynamic and diversifying. While foundational theories from CDA and social semiotics remain influential, there is an increasing engagement with digital platforms, affective communication, and applied education. The main research topics in this field can be summarized into five aspects.

1) Grounding theories and constructions of meaning

One area is dedicated to core ideas such as multimodality, discourse, gesture, embodiment and engagement. These issues highlight the enduring importance of social semiotic theory, specifically Kress and van Leeuwen's (2006) concept of representing meaning through the overlapping of multiple semiotic modes. The growing focus on translanguaging and gaze also mirrors a growing interest in performance-based and embodied forms of communication informed by cognitive and sociocultural theorizing (Jewitt, 2014).

2) Analysis of ideological and political discourse

Scholarly attention persists around CDA for multimodality. Subjects such as ideology, to legitimation, representation, and media discourse, speak to ongoing investigations of how multimodal resources work toward sustaining the reproduction of power and inequality in society. The consideration of notions such as framing and social actors signal a convergence point between CDA, social semiotics and systemic functional linguistics as CDA widens the scope and complexity of the critical tools at its disposal (Fairclough, 2015; van Dijk, 2008).

3) Digital media and platform-based discourse analysis

Third in the trend list is the application of MDA along with the critical discourse analysis to study digital and visual communication on Twitter, YouTube, and TikTok. The application of vocabulary related to political ideology (e.g., "advertising", "populism") and crises (e.g., "COVID-19") indicates the shift towards analyzing discourse as it occurs in real-time, an event-oriented, and ideologically charged nature. MDA has been used to study the way in which films and memes represent power relationships, propagate ideologies, and shape public perception (Adami et al., 2020).

4) Linguistic and educational applications

With increased interest in multimodal literacy, picture books, ESP (English for Specific Purposes), and tertiary education, MDA increasingly finds application in educational and communication contexts. Through forms such as political cartoons, researchers are now analyzing how multimodal texts influence public engagement with global concerns such as climate change. This applied orientation, in line with the discipline's focus on critical pedagogy and real-world relevance, comes to mind (Serafini, 2014; Lemke, 2015). Researchers analyze how gaze, gesture, embodiment, and other forms of nonverbal cue support engagement and meaning (Jewitt, 2009).

5) Affect, emotion, and social networks

Affect, emotion, creativity, and personal experience become increasingly significant in multimodal meaning creation. This shift, often referred to as the "affective turn", focuses on the contribution aesthetic response and emotional engagement make to the interpretation of discourse (Ahmed, 2014; Wetherell, 2012). An interest in the lived experiences of multimodal interaction participants increases with the application of ethnography and other qualitative methodologies. Researchers want to know the role social networks play as discursive contexts and how multimodal texts contribute to the creation of emotions and works of art.

3.5 Future Research Directions

Based on the timeline in the overlay visualization, future research in the field of MDA will increasingly focus on the following three perspectives.

1) Digital discourse analysis, crisis communication, and international sociopolitical situations. The sudden rise of keywords including "social media", "covid-19", "china", and "neoliberalism" shown in Figure 6 indicates a trend toward investigating how multimodal resources are utilized through online platforms, pandemic narratives, and geopolitics. The popularity of keywords including Instagram, TikTok, Twitter, and memes indicates a heightened interest in platform-oriented discourse strategies.

2) Critical and ideological analysis. The increased salience of social-political constructs of identity and ideology underscores a raised concern over the role played by critical multimodal discourse analysis in making the relation of power and culture ideology transparent (Machin & Mayr, 2012; Ledin & Machin, 2018).

3) Social and ethical issues. MDA might play a role in dealing with misinformation, inequality, and social justice. Future work might focus on analyzing AI-generated media to understand how meaning is manipulated. It could also examine how multimodal messages reinforce or challenge stereotypes (race, gender, disability). Researchers could consider accessibility (e.g. captions, audio descriptions) and the needs of diverse audiences. For instance, analyzing educational multimedia for inclusivity could ensure content serves learners with different abilities and backgrounds.

4) MDA's interdisciplinary and applied character. As MDA expands to new disciplines and geographies,

scholarship in the future will increasingly be situated at the intersection of transnational, digital, and crisis-related discussions, balancing theory development with practical applications in media, education, and public policy.

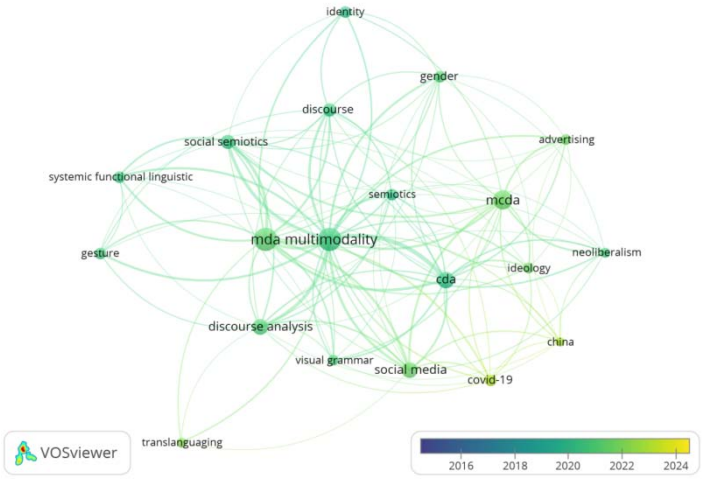


Figure 7. Overlay visualization of top 20 keywords

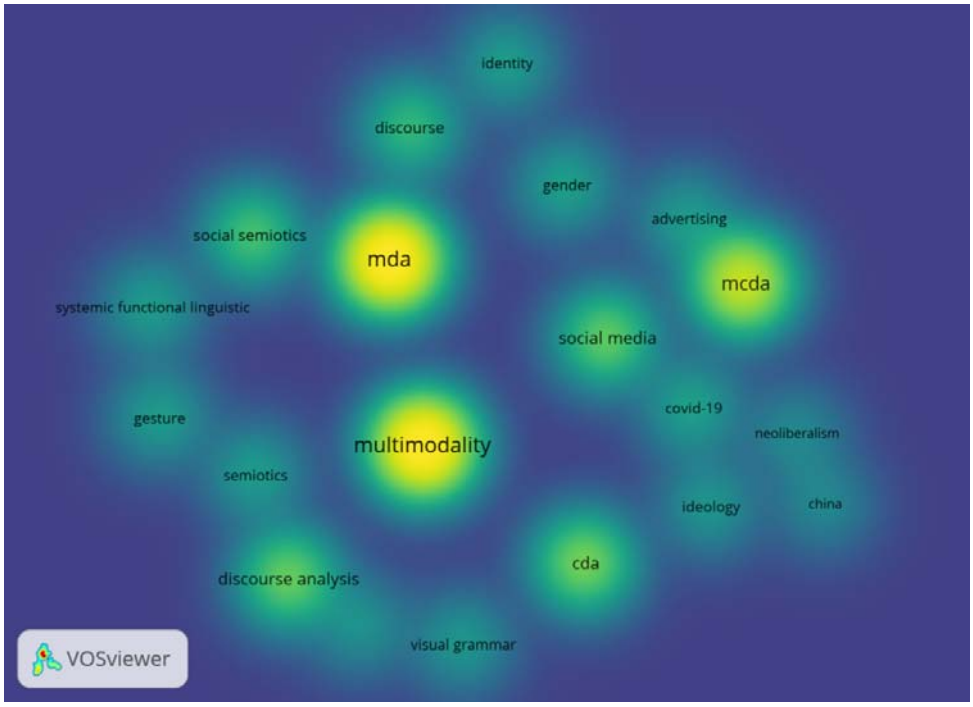


Figure 8. Density visualization of top 20 keywords

Each of these directions emphasizes human needs, that is, improving education and public understanding, giving voice to communities, and using multimodal analysis to foster positive social change. By combining technological innovation with social purpose, future MDA research can deepen our insight into how meaning is made in an increasingly complex media environment.

4. Conclusion

The growing relevance of MDA is evident in the digital era. Using VOSviewer 1.6.20, this study traced the development of MDA in the last decade (2015–2024). It examined the status quo and trends of MDA research by

analyzing knowledge maps of 1554 retrieved articles from Scopus database, highlighting the top authors, journals, institutions, countries as well as key research fields. These findings give strategic guidance for future MDA research internationally. There was an increasing trend from 2015 to 2024, and 2081 institutions in 81 countries engaged in MDA research. The USA leads with 214 papers, followed by China with 200. There are 692 journals publishing articles or reviews on MDA, with the top five being *Social Semiotics, Discourse, Context and Media, Multimodal Communication, Discourse and Communication and Visual Communication*, all with 30 and above published. The five most common keywords include mda, multimodality, mcda, cda and discourse analysis.The study also highlights four research hotspots and four future research directions.

Bibliometric survey can systematically, visually and clearly display the research topics and categories of a certain discipline. Firstly, a preliminary analysis of the development trends in MDA research was conducted considering dimensions such as general features, authors, journals, institutions and countries. Secondly, it investigates the analysis of keywords co-occurrence identifies the development of knowledge topics within the field of MDA research over the past decade with the help of the network visualization, overlay visualization and density visualization. Thirdly, based one the clusters, timeline and density analysis, this study also uncovers the evolutionary path and future development trends of MDA research, providing a valuable reference and foundation for further MDA-related research. The limitation lies in the influence of the literature data sources and the inability to conduct an in-depth analysis of the underlying mechanisms involved. This bibliometric survey has the potential to guide future research directions, fostering networking and collaboration among researchers worldwide by analyzing the most prominent articles, scholars, institutions, and countries contributing the highest number of articles.

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The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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