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Media and Information Literacy in Education: A Bibliometric Analysis of Global Research Trends (2000–2025)

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Abstract

Media and Information Literacy (MIL) has become a vital educational priority in the digital age, equipping learners with critical competencies to navigate complex media environments, combat misinformation, and engage responsibly with digital technologies. While scholarly interest in MIL has grown rapidly over the past two decades, a systematic global mapping of research trends remains limited. This study presents a comprehensive bibliometric analysis of 2,866 peer-reviewed publications related to MIL in educational contexts, indexed in the Web of Science Core Collection between 2000 and 2025. Using the Bibliometrix package in R, we examined publication patterns, influential authors, leading institutions and countries, intellectual structures, and thematic evolution. Results reveal a sharp increase in MIL research post-2010, coinciding with rising concerns around fake news, digital citizenship, and social media influence in educational environments. The United States, the United Kingdom, and Australia emerged as dominant contributors, while collaborative networks show increasing engagement from Asia and Latin America. Thematic analysis identified evolving research priorities, from foundational literacy frameworks to AI-mediated learning, algorithmic awareness, and policy integration. Despite conceptual growth, the field remains geographically uneven, and integration between media literacy, information science, and pedagogy is still emerging. This study contributes a global overview of the MIL research landscape in education, identifies research gaps, and offers directions for interdisciplinary collaboration and inclusive knowledge production.

Keywords: media literacy, information literacy, digital education, bibliometric analysis, global trends, misinformation.

1. Introduction

Media and Information Literacy (MIL) refers to the set of competencies that empower individuals to access, analyze, evaluate, and create information and media content in various forms. According to Alcolea-Díaz et al. (Alcolea-Díaz et al., 2020), MIL is essential not only for personal empowerment but also for fostering informed citizenship and strengthening democratic participation. The concept amalgamates various literacies, media literacy, information literacy, digital literacy, and news literacy into a comprehensive framework to prepare learners to navigate the complex and dynamic landscape of the digital age (Grizzle et al., 2014). As the boundaries between media and information platforms continue to blur due to technological convergence, MIL has emerged as a critical skill set. It enables learners to discern the credibility of information, understand media bias, produce user-generated content ethically, and actively participate in civic life. These competencies are particularly relevant in the current context of digital abundance,

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algorithmic personalization, misinformation, and online radicalization (Koltay, 2011). Consequently, educational systems worldwide have increasingly embraced MIL as a vital component of 21st-century learning frameworks.

The 21st century has witnessed a significant shift in how knowledge is produced, consumed, and disseminated. With the ubiquity of digital technologies, students are constantly exposed to vast amounts of information from diverse media sources. However, access alone does not guarantee comprehension or discernment. The educational imperative now lies in cultivating critical thinking and evaluative skills that go beyond traditional literacy (Livingstone, 2004). Media and information literacy provides students with tools to assess source credibility, detect fake news, understand data manipulation, and foster digital responsibility (Bulger, Davison, 2018).

Incorporating MIL into formal and non-formal education systems is now regarded as essential for preparing students for lifelong learning and global citizenship. The European Commission included MIL in its key competences for lifelong learning, while the Sustainable Development Goals (SDG 4.7) emphasize education that promotes informed decision-making, sustainability, and civic engagement, all of which hinge on MIL competencies (Fraillon et al., 2013). Schools and universities have responded by embedding MIL into curricula, though integration levels vary significantly across countries and institutions (Frau-Meigs et al., 2017).

Given the exponential growth of scholarly output on MIL in the past two decades, a bibliometric synthesis becomes essential for making sense of the existing research landscape. Bibliometric analysis provides quantitative insights into publication trends, thematic evolution, collaboration networks, and the intellectual structure of a research field. It is a valuable tool for researchers, educators, and policymakers to identify knowledge gaps, assess the maturity of the field, and map the influence of authors, journals, and institutions (Donthu et al., 2021). While several systematic reviews have addressed components of MIL, such as digital literacy or media education in isolation, there is a lack of integrative bibliometric studies that comprehensively analyze MIL within the context of education from a global perspective. The growing diversity of research outputs, interdisciplinary contributions, and regional variations in MIL application warrant a meta-level analysis that transcends narrative or thematic reviews (Sánchez et al., 2023). A bibliometric approach not only tracks the volume and growth of scholarly publications but also helps uncover the structural dynamics of the research field, such as co-authorship networks, keyword co-occurrences, and citation linkages. Tools like VOSviewer, CiteSpace, and Bibliometrix have enabled such analyses with increasing sophistication and visual clarity. However, such methods remain underutilized in MIL-focused research synthesis, leaving a critical gap in evidence-informed decision-making.

Research Gaps in Prior Reviews: Previous reviews of MIL in education have largely been conceptual, pedagogical, or regional in focus. For instance, Frau-Meigs et al. (Frau-Meigs et al., 2017) offered a European perspective on media education, while Hobbs (Hobbs, 2010) emphasized curriculum design strategies. These works provided rich insights but lacked the methodological rigor of bibliometric mapping. Moreover, recent studies have typically been limited to specific themes, such as fake news detection (Guess et al., 2020), social media literacy (Mustafa, 2025), or digital citizenship (Choi, 2016), rather than offering a panoramic view of the field's evolution.

Furthermore, few studies have addressed the comparative development of MIL across geographic regions, author networks, and institutional contributions. There is limited understanding of how MIL research differs between Global North and Global South contexts, or how institutional funding and collaboration patterns shape scholarly output. Similarly, the thematic clustering of MIL topics over time remains unexplored, particularly as the field intersects with emerging concerns like AI literacy, data privacy, and algorithmic accountability.

Objectives of the Study: In response to these gaps, this study aims to conduct a comprehensive bibliometric analysis of global research on Media and Information Literacy in education from 2000 to 2025. The primary objectives are as follows:

1. To map the global research output on MIL in education, identifying publication volume, growth trends, and key publication outlets.

2. To identify thematic evolution and intellectual structure, including key research areas, conceptual clusters, and emerging trends.

3. To analyze the contributions of leading authors, institutions, and countries, uncovering patterns of scholarly collaboration and knowledge dissemination.

This bibliometric synthesis is grounded in data retrieved from reputable academic databases, using co-citation, co-word, and co-authorship analyses to construct a multi-dimensional overview of the field.

Research Questions: To guide the bibliometric investigation, the following research questions (RQs) are proposed:

– RQ1: How has global research on Media and Information Literacy in education evolved from 2000 to 2025 in terms of publication trends and thematic focus?

– RQ2: What are the dominant intellectual structures and thematic clusters within the field as revealed through co-citation and keyword analyses?

– RQ3: Which authors, institutions, and countries have emerged as leading contributors in the development of MIL in education?

Significance of Study: This study is significant for multiple reasons. First, it fills a methodological and thematic void by offering the first large-scale bibliometric analysis of MIL in education, thereby enabling a data-driven understanding of the field's growth and structure. Second, it provides a foundation for future research by identifying underexplored themes, declining areas of interest, and nascent topics with high research potential. Third, the findings assist curriculum designers, educational policymakers, and institutional leaders in aligning pedagogical strategies with global trends. By identifying regional strengths and gaps, the study can inform capacity-building initiatives and foster cross-border academic collaboration. Moreover, in an era where misinformation and digital polarization pose serious threats to democratic societies, understanding how MIL is being conceptualized and taught becomes a matter of urgent educational and civic concern. Finally, this bibliometric synthesis contributes to the larger discourse on digital transformation in education. As MIL becomes a cornerstone of future-ready education systems, empirical clarity on its research trajectory ensures that pedagogical interventions are not only innovative but also evidence-based and globally contextualized.

Literature Review: Media and Information Literacy (MIL) is a multidimensional and evolving concept that encapsulates the competencies needed to access, evaluate, use, and create information and media content ethically and effectively. The term combines two traditionally separate areas, media literacy and information literacy, into a holistic framework essential for modern education and civic participation. According to UNESCO, MIL is defined as a set of competencies that empower citizens to access, understand, evaluate, and use information and media critically and responsibly. It encourages informed decision-making, freedom of expression, intercultural dialogue, and democratic participation (Alcolea-Díaz et al., 2020). UNESCO has been one of the major global actors promoting MIL as a foundational element of 21st-century education and digital citizenship. Similarly, the European Commission defines media literacy as the ability to access the media, to understand and critically evaluate different aspects of the media and media content, and to create communications in a variety of contexts. In its framework, information literacy complements media literacy by emphasizing the need to locate, assess, and ethically use information, especially in digital environments (Fraillon et al., 2013). In the United States, the American Library Association (ALA) describes information literacy as the ability to “recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information effectively” (Mounce, 2005). The merging of media and information literacies acknowledges the changing digital landscape, where media content and information sources are increasingly integrated across platforms.

The intersection of media literacy and information literacy has become particularly critical due to the digital transformation of education, where students increasingly engage with online resources, digital tools, and multimedia content (Cisneros Sánchez et al., 2025). MIL supports students in becoming critical thinkers, discerning consumers, and ethical producers of content. It helps students navigate the challenges of misinformation, algorithmic bias, digital echo chambers, and privacy concerns. MIL education has thus become a cornerstone of fostering digital citizenship, enabling young learners to critically analyze media messages, engage in online discourse responsibly, and understand the ethical implications of their digital actions. Scholars such as Frau-Meigs (Frau-Meigs, 2012) and Hobbs (Hobbs, 2017) emphasize that teaching MIL not only equips students with practical skills but also cultivates a civic mindset, preparing them to participate meaningfully in a digital democracy. In response to growing concerns over disinformation and online manipulation, several national education systems have incorporated MIL into curricula. For example, Finland's education policy includes MIL as a strategy to develop

critical thinking and civic competence (Kupiainen, 2013). Likewise, the Philippines became the first country to adopt UNESCO's MIL curriculum in secondary schools (Alcolea-Díaz et al., 2020), positioning itself as a regional leader in MIL-based education policy.

Past Reviews and Meta-Studies: Over the past two decades, a variety of narrative and systematic reviews have sought to chart the development of MIL-related research, focusing on specific dimensions such as digital literacy, misinformation, and educational technology. However, while valuable, these reviews have often been limited in scope, methodology, or geographic reach. One of the earliest systematic reviews in the field was conducted by Potter (Potter, 2010), who analyzed media literacy interventions and identified a lack of longitudinal studies and consistent definitions. More recently, researchers like McDougall et al. (McDougall et al., 2018) offered a narrative synthesis of media literacy education in the UK, highlighting policy inconsistencies and the need for teacher training. Meanwhile, Erstad, Voogt (Erstad, Voogt, 2018) reviewed digital literacy in schools across Europe and concluded that MIL was unevenly integrated into pedagogical practices and often overshadowed by technical ICT training. Recent systematic reviews have attempted to explore the broader educational context. For instance, Sakdiyah (Sakdiyah, 2025) used a bibliometric and systematic approach to study mathematical literacy but noted that information literacy was under-represented in pedagogical strategies, indicating a need for broader conceptual integration across subjects. Likewise, Mustafa (Mustafa, 2025) conducted a systematic review on the role of social media in fostering academic literacy and critical thinking, emphasizing the importance of MIL in university-level curricula. Ataniyazova, Panicker (Ataniyazova, Panicker, 2025) explored the influence of social media on declining reading habits among youth and concluded that media education can be a crucial mechanism for reinvigorating deep reading and critical engagement with content. This aligns with Zaymoglu (Zaymoglu, 2025), who stressed the visual and data literacy dimensions of MIL in journalism education, underscoring the growing complexity of digital content interpretation.

Despite the growing interest, one consistent gap across these studies is the absence of a comprehensive bibliometric mapping of global MIL research in education. Existing reviews are either limited to specific countries (like Poland, Indonesia, the UK), specific educational levels, or narrow themes like digital tools or misinformation. Moreover, few reviews have adopted bibliometric techniques, such as co-citation analysis, keyword co-occurrence, or thematic clustering, which can reveal deeper patterns in knowledge production and intellectual structure.

Another noticeable limitation in prior reviews is the underrepresentation of global South perspectives, despite significant MIL policy initiatives in regions like Southeast Asia and Sub-Saharan Africa. As Shibambu, Mojapelo (Shibambu, Mojapelo, 2024) point out in their scoping review of climate change literacy, African students are often excluded from global conversations about digital competencies despite being profoundly impacted by information ecosystems.

Furthermore, many prior studies neglect the interdisciplinary nature of MIL research, which spans fields such as education, communication, information science, and sociology. A bibliometric approach is uniquely suited to unraveling these intersections, mapping collaboration networks, and identifying leading institutions and authors. The absence of a holistic, global bibliometric synthesis of MIL in education from 2000 to 2025 represents a critical research gap. By analyzing publication trends, intellectual structures, thematic clusters, and leading contributors, a bibliometric study can provide a panoramic view of the field's development. It also allows for evidence-based recommendations for researchers, educators, and policymakers aiming to strengthen MIL integration across education systems.

2. Materials and methods

This study adopts a bibliometric methodology to analyze global research trends in Media and Information Literacy (MIL) within the field of education, covering the period from 2000 to 2025. The data was sourced from the Web of Science (WoS) Core Collection, a widely recognized and reputable bibliographic database known for its extensive indexing of high-quality scholarly literature across disciplines. The decision to use WoS was based on its robust citation indexing, coverage of influential journals, and compatibility with bibliometric analysis tools such as Bibliometrix and VOSviewer (Mongeon, Paul-Hus, 2016).

The data collection process began by querying the database using a combination of keywords relevant to the study: “media literacy,” “information literacy,” “media and information literacy,” “MIL,” and “digital literacy,” all in conjunction with the term “education.” These keywords were

searched in all fields to ensure comprehensive retrieval of relevant publications. The initial query returned with 7,177 documents.

Subsequently, a stepwise filtering approach was applied to refine the dataset. First, the document type filter was used to include only peer-reviewed journal articles, reducing the dataset to 5,675 articles. This step ensured the quality and scholarly relevance of the material included in the analysis. Next, a language filter was applied to select only articles published in English, bringing the dataset down to 5,160. Finally, the dataset was limited to specific research areas closely aligned with the objectives of this study, including Education, Communication, Information Science & Library Science, Computer Science, and Social Sciences. After this final refinement, the dataset comprised 2,866 English-language journal articles published between 2000 and 2025. This corpus served as the foundation for the subsequent bibliometric analysis.

Data Cleaning: To ensure the accuracy and reliability of the analysis, a rigorous data cleaning process was undertaken before applying bibliometric methods. This involved the removal of duplicate records, which commonly occur in large bibliographic datasets due to overlapping indexing or re-publication. Identifying and eliminating such duplicates prevented inflation of publication counts and co-authorship metrics.

Author names were standardized to resolve inconsistencies, such as different spellings, use of initials, or formatting differences (like “Smith, J.” vs. “Smith, John”). Normalization of author names ensured the correct attribution of publications and accurate mapping of collaboration networks. Institutional names were also harmonized to avoid errors in the affiliation analysis; for example, variations such as “Harvard University,” “Harvard Univ,” and “Harvard Med Sch” were unified. In terms of keywords, spelling differences, synonyms, and conceptually similar terms like “media literacies” and “media literacy” were consolidated for consistency. This was particularly important for co-word analysis, where precision in keyword labeling directly affects thematic clustering results (Zupic, Čater, 2015).

The cleaned and standardized dataset was exported in formats compatible with analytical software tools such as R and VOSviewer, allowing for seamless integration into the bibliometric workflow.

Bibliometric Tools and Analytical Methods: The bibliometric analysis was conducted using a combination of R-based software and visualization tools, primarily Bibliometrix and Biblioshiny, along with VOSviewer (Cobo et al., 2011). Bibliometrix, an open-source R package developed by Aria, Cuccurullo (Aria, Cuccurullo, 2017), is designed specifically for science mapping and bibliometric analysis. Biblioshiny, its web-based graphical interface, was used for interactive exploration of trends, networks, and thematic structures. In addition, VOSviewer, developed by Van Eck, Waltman (Van Eck, Waltman, 2010), was employed for generating high-quality network visualizations of co-authorship, keyword co-occurrence, and co-citation patterns. Its strength lies in graphical clarity and clustering accuracy, making it particularly effective for representing large bibliographic networks.

Ethical Considerations: As this study is based entirely on secondary data derived from publicly available bibliographic records in the Web of Science Core Collection, there are minimal ethical risks involved. No personal, sensitive, or identifiable human subject data was collected, and therefore, formal ethical clearance or institutional review board (IRB) approval was not required. However, ethical standards were upheld by ensuring the accurate attribution of all scholarly work cited or analyzed. The analysis respected intellectual property rights by using metadata solely for research purposes in accordance with the terms of use of the Web of Science database and software tools such as Bibliometrix and VOSviewer. The interpretations made from the data are transparent, reproducible, and aligned with responsible research conduct principles.

3. Discussion

The bibliometric findings of this study reveal several significant trends and structural dynamics in the global research landscape of Media and Information Literacy (MIL) in education. The growth trajectory, thematic evolution, and institutional dominance observed over the past two decades highlight both the maturing of the field and the persistent challenges related to global equity, interdisciplinarity, and knowledge transfer from research to practice.

One of the most prominent trends is the sharp increase in scholarly output after 2010, particularly accelerating after 2016. This rise aligns closely with the proliferation of social media platforms like Facebook, Twitter, and YouTube, and the resulting transformation in how individuals,

particularly youth, access, create, and share information. The digital media environment significantly expanded the scope of MIL, transitioning it from a niche pedagogical concern into a global educational and policy imperative. Platforms that enabled user-generated content brought forth complex challenges related to misinformation, disinformation, media manipulation, and algorithmic bias, thereby increasing the urgency for integrating MIL into educational systems. These developments prompted researchers, educators, and policymakers to re-evaluate traditional notions of literacy and adapt to the dynamic realities of digital communication.

Another key insight from the analysis is the dominance of institutions and researchers from the Global North, especially the United States, the United Kingdom, Spain, Germany, and Canada. Universities like Nanyang Technological University, University of Amsterdam, Stanford University, and University of Huelva emerged as influential hubs in MIL research. This geographical concentration of scholarly influence raises critical concerns about knowledge equity and inclusivity. While the Global North continues to shape much of the theoretical and methodological discourse, emerging participation from countries like China, South Africa, Pakistan, and Malaysia shows encouraging signs of global diffusion. Nevertheless, the limited representation of countries from regions such as Sub-Saharan Africa, Central Asia, and the Middle East reflects structural barriers, such as a lack of research funding, limited access to academic networks, and language constraints, that hinder broader participation in global knowledge production.

The thematic evolution revealed in the keyword analysis and document coupling reflects the shifting conceptualization of MIL. Initially rooted in frameworks of media awareness and critical reading (often grounded in traditional media studies), MIL has evolved into a dynamic, multidimensional competence that includes digital literacy, health literacy, social media navigation, and fact-checking skills. The keyword co-occurrence maps show how recent research increasingly incorporates themes like "misinformation," "health misinformation," "disinformation," and "media manipulation" particularly during the COVID-19 pandemic, which intensified the urgency of equipping citizens with critical evaluative skills in a rapidly changing media landscape. This shift illustrates how MIL is no longer seen as a static set of skills but as an evolving capacity essential for democratic participation, health decision-making, and civic engagement in digital societies.

However, despite the growing academic and policy attention, a gap remains between MIL research and its practical implementation in educational systems. Several countries have introduced national frameworks or curriculum guidelines for MIL, like Finland, Sweden, and Canada, and organizations like UNESCO have played a critical role in advocacy and capacity-building. Yet, the practical integration of MIL into everyday classroom practice, particularly in under-resourced education systems, remains inconsistent and fragmented. Many educators still lack the training, resources, or institutional support to embed MIL effectively in their teaching. The persistence of this policy-practice gap suggests that while research has effectively defined the scope and urgency of MIL, more attention is needed on implementation strategies, teacher professional development, and culturally responsive pedagogies that consider local contexts.

When compared with earlier literature reviews and meta-studies, this study offers a more holistic and quantitative perspective. Prior reviews, such as those by Frau-Meigs et al. (Frau-Meigs et al., 2017) and Mihailidis (Mihailidis, 2018), have examined MIL from a qualitative or conceptual lens, focusing on curriculum design, pedagogical models, or ideological critiques. While valuable, such studies often rely on selective samples and may not capture the full scope of global research activity. By using bibliometric tools, this study provides empirical evidence of publication trends, thematic clusters, institutional dominance, and citation dynamics, thereby complementing existing reviews with a data-driven overview. Moreover, the analysis underscores that the intellectual structure of the field is increasingly interdisciplinary, with contributions from education, communication studies, information science, health communication, and digital humanities, highlighting the need for more integrated approaches to both research and practice.

Implications: The findings of this study hold several important implications across education, policy, and research domains. For educators, the evolution of MIL demands the integration of flexible, critical, and participatory pedagogical approaches that not only teach digital skills but also foster critical thinking, civic responsibility, and ethical media engagement among students. MIL curricula must be localized, age-appropriate, and inclusive of diverse digital contexts. For policymakers, the study provides evidence to support the development of national literacy strategies that are aligned with global frameworks like those from UNESCO, ensuring that MIL is

embedded not just as a competency but as a lifelong learning objective. For researchers, the analysis highlights opportunities to explore underrepresented regions, such as Africa, the Middle East, and parts of South America, and to address emerging challenges like algorithmic bias, deepfakes, and AI-driven misinformation. Strengthening global scholarly collaboration and expanding the interdisciplinary scope of MIL may be critical for building a more equitable and resilient information society.

4. Results

This section presents a comprehensive bibliometric analysis of the research landscape surrounding Media and Information Literacy (MIL) in Education from 2000 to 2025. Through visualizations and quantitative insights, the analysis explores patterns in publication trends, citation impact, key sources, influential authors, institutional and country-level collaborations, and evolving research themes. By leveraging bibliometric tools such as VOSviewer and Bibliometrix, the study identifies the most active contributors, thematic clusters, and trending topics, offering a detailed understanding of how the field has matured and diversified over time. These findings provide a foundation for recognizing scholarly progress, highlighting research gaps, and informing future academic inquiry and policy development in MIL.

Figure 1 illustrates the annual scientific production on Media and Information Literacy in Education from 2000 to 2025. The trend shows minimal activity before 2010, followed by a gradual increase until 2015. After 2016, research output began rising sharply, with a substantial surge from 2019 onward, peaking in 2024 at over 450 articles. This rapid growth reflects the increasing global importance of MIL in education, likely driven by digital transformation, misinformation crises, and policy emphasis. The sharp decline in 2025 is likely due to incomplete indexing for the current year rather than an actual drop in research output.

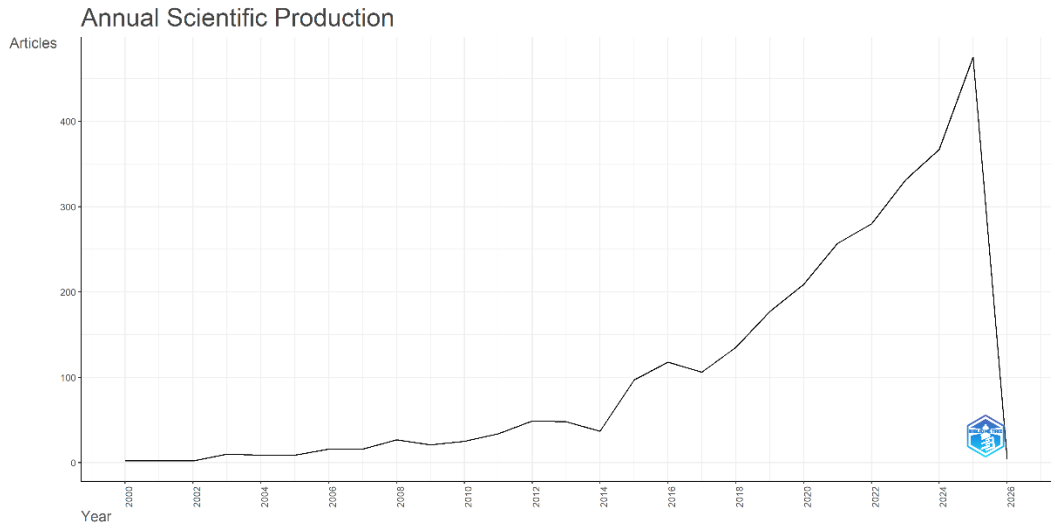

Fig. 1. Annual Scientific Production

Figure 2 shows the average citations per year for publications related to Media and Information Literacy in Education from 2000 to 2025. A notable peak is observed in 2002, indicating that early publications received high citation impact, likely due to fewer competing works and foundational contributions. From 2004 to 2023, citation averages remain relatively steady, fluctuating modestly between 2 and 5 citations per year. A sharp rise appears again in 2025, though this spike is likely a statistical artifact caused by a small number of recent articles receiving early attention. Overall, the graph reflects both early seminal influence and a possible resurgence in interest in newer publications.

Figure 3 highlights the most relevant academic journals contributing to the field of Media and Information Literacy in Education. The leading source is Media Literacy and Academic Research with 70 documents, followed closely by Media Education-Mediobrazovanie (69 documents). Other influential journals include Education and Information Technologies (57) and Information Communication & Society (51), indicating strong interdisciplinary engagement.

The presence of journals from literacy studies, library science, communication, and education shows the diverse academic interest in MIL. This distribution reflects both pedagogical and socio-technical approaches to MIL in global educational research.

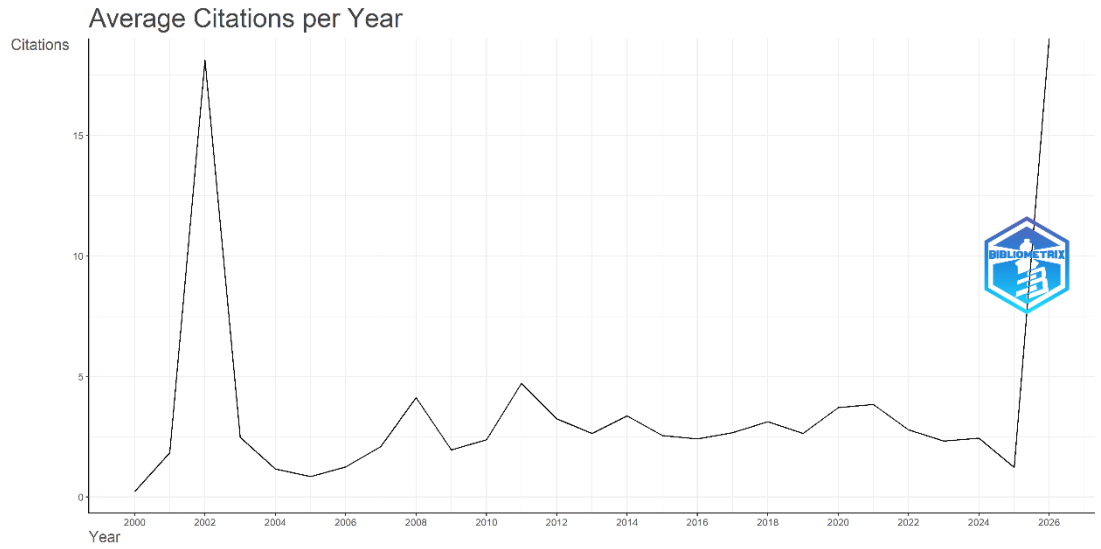

Fig. 2. Average Citations per Year

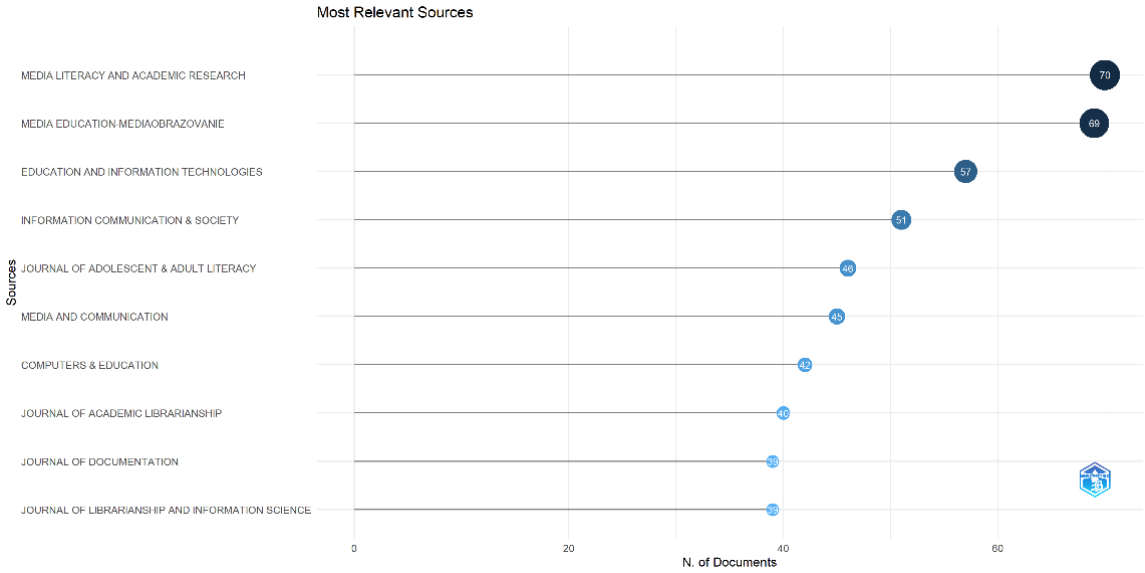

Fig. 3. Most Relevant Sources

Figure 4 visualizes the most relevant academic affiliations based on co-authorship networks in Media and Information Literacy in Education research. Prominent institutions such as Nanyang Technological University, University of Amsterdam, and Stanford University appear as central hubs, indicating their strong research output and collaborations. European institutions like University of Huelva, University of Granada, and University of Zurich also form significant clusters, reflecting regional research communities. The dense interlinkages suggest an increasingly global and collaborative research landscape, with diverse participation from universities in Asia, Europe, Africa, and North America. This network reveals key institutional contributors shaping the MIL discourse worldwide.

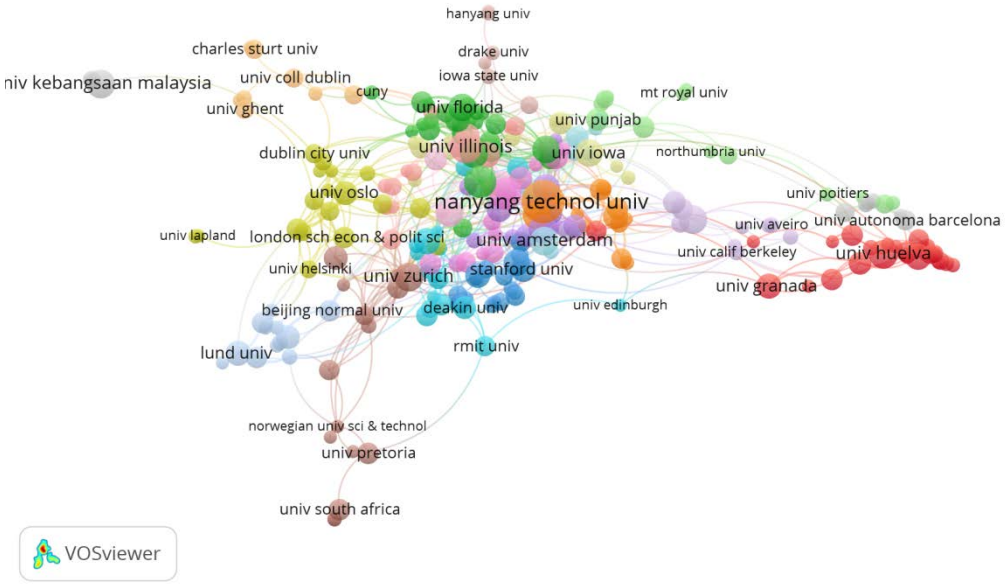

Fig. 4. Most Relevant Affiliations

Figure 5 displays the co-authorship network among countries in the field of Media and Information Literacy in Education. The United States, People's Republic of China, and Spain emerge as the most prominent contributors, indicated by their large node sizes and extensive connections. European nations like Germany, Portugal, Italy, and Finland also form dense collaborative clusters. Notably, countries such as South Korea, South Africa, Pakistan, and Canada exhibit strong transcontinental linkages, reflecting growing global collaboration. This map underscores the internationalization of MIL research, with both Global North and Global South countries contributing to their scholarly discourse.

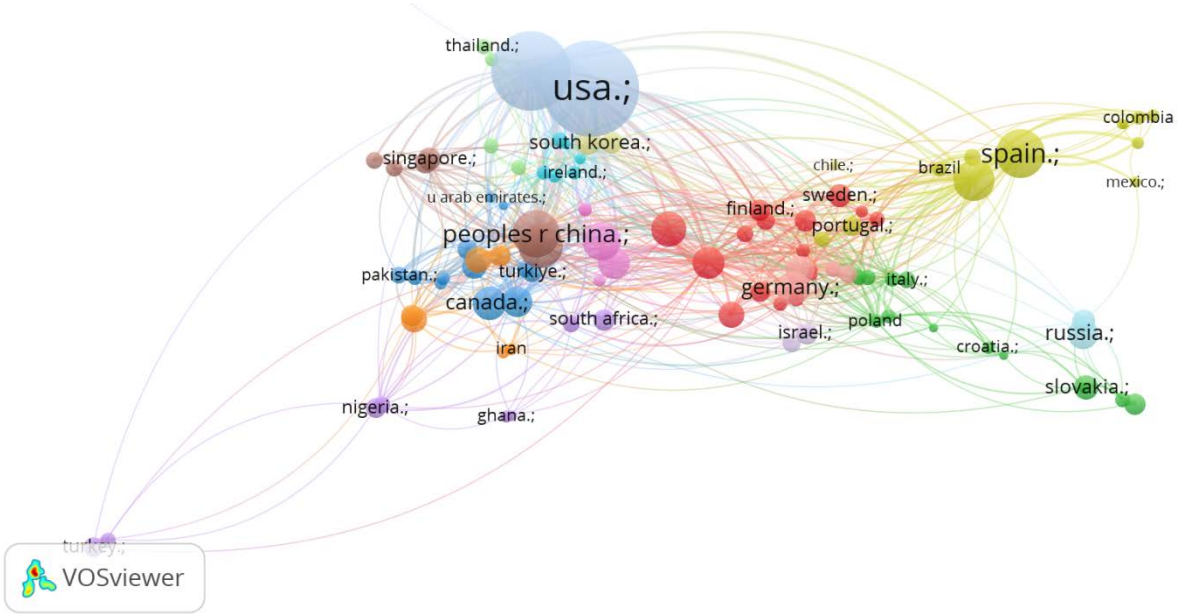

Fig. 5. Co-Authorship Network Among Countries

Figure 6 presents the most globally cited documents in the field of Media and Information Literacy in Education. The top-cited paper is Papacharissi (Papacharissi, 2002) in New Media & Society, with 810 citations, followed by van Deursen and van Dijk (van Deursen, van Dijk 2011) also in New Media & Society with 591 citations, indicating these foundational works' continued relevance. Other influential works include Falloon (Falloon, 2020) in ETR&D (425 citations) and Jones-Jang et al. (Jones-Jang et al., 2021) in American Behavioral Scientist (393 citations). These documents reflect

key theoretical, empirical, and methodological contributions that have shaped the MIL discourse, particularly in digital literacy, media effects, and educational technology contexts.

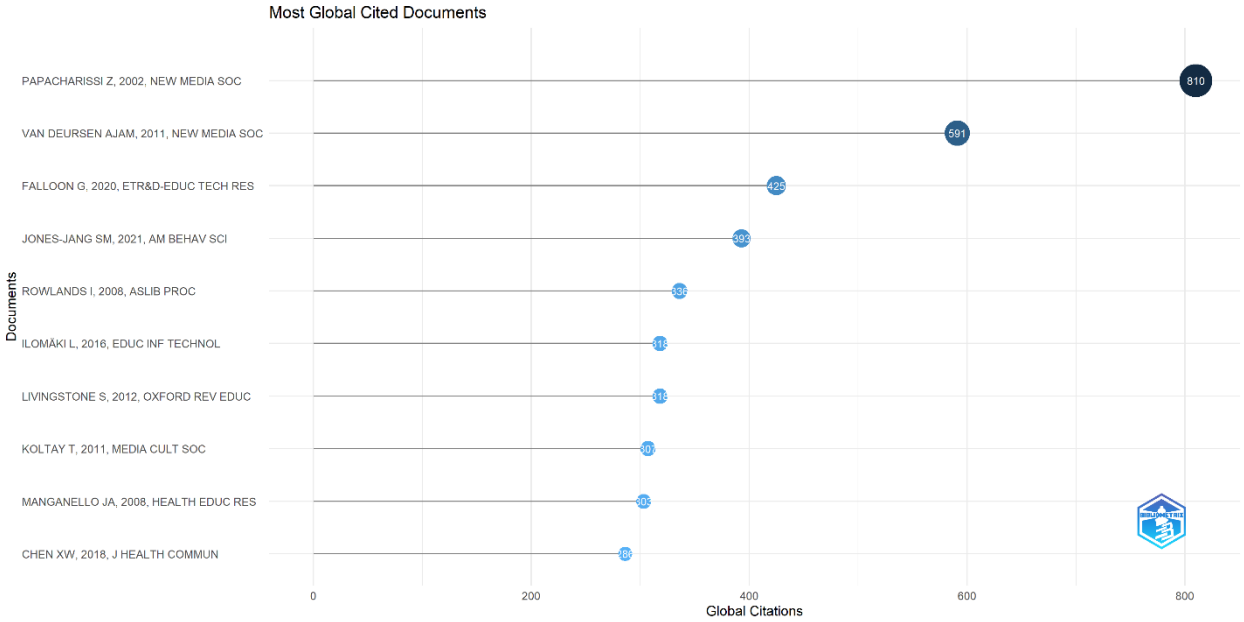

Fig. 6. Most Globally Cited Documents

Figure 7 presents a keyword co-occurrence network, offering insights into the conceptual structure of the research on Media and Information Literacy (MIL) in education. The most prominent keywords include "media literacy," "digital literacy," "social media," "students," and "internet," indicating core thematic areas. The color gradient (from blue to yellow) represents the average publication year of documents using those keywords, highlighting a chronological shift in focus. Recent studies (in yellow) concentrate on "disinformation," "fact-checking," "health literacy," and "media manipulation," reflecting growing concerns about misinformation and the role of media literacy during global events like the COVID-19 pandemic. Older themes (in blue), such as "new literacies," "childhood," and "methods," illustrate foundational pedagogical and developmental concerns. This evolution signifies a transition from traditional literacy pedagogy to contemporary digital and socio-political challenges in media education.

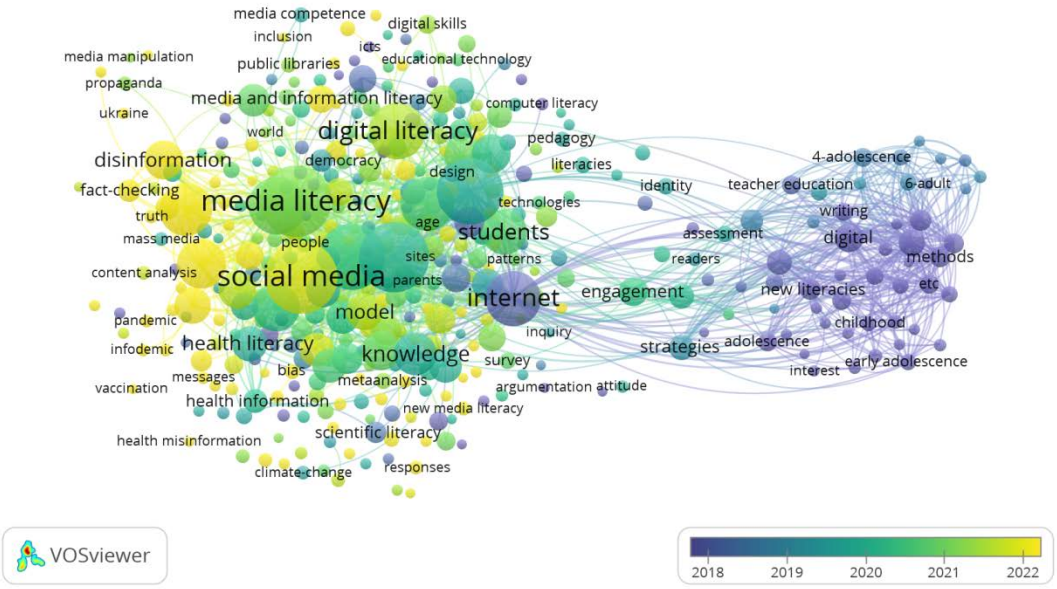

Fig. 7. Keyword Co-Occurrence Network

Figure 8 illustrates the evolution of trending terms in Media and Information Literacy in Education research from 2015 to 2025. Early terms like “internet,” “information literacy,” and “education” have remained foundational, while more recent keywords such as “misinformation,” “fake news,” “covid-19,” and “disinformation” show a thematic shift toward socio-political and public health concerns. High-frequency terms like “social media” and “digital literacy” have dominated research from 2019 onwards, reflecting the digital transformation of education and growing concerns over online content credibility. This trend analysis reveals a shift from foundational literacy education to more complex, real-world challenges involving digital platforms, trust, and media manipulation.

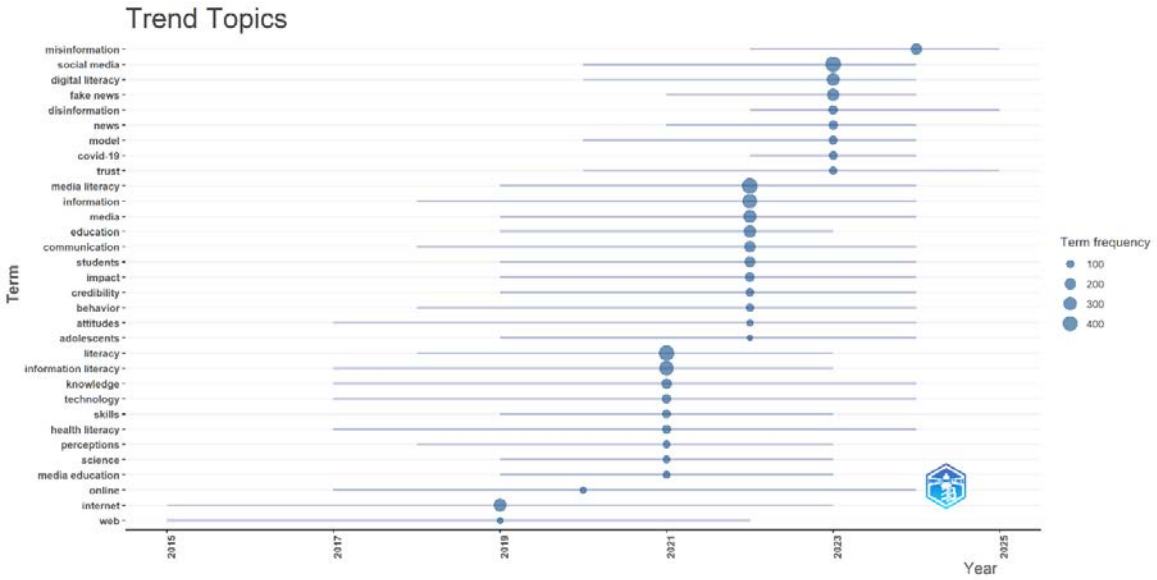

Fig. 8. Trend Topics

Figure 9 shows a strategic diagram of thematic clusters based on document coupling, mapped by centrality (relevance) on the x-axis and impact (development) on the y-axis. The upper-right quadrant highlights dominant and well-developed themes, particularly “misinformation,” “fake news,” and “media literacy”, which are both central and impactful in the field. The bottom-left quadrant features foundational but less-developed themes such as “digital literacy” and “information literacy,” suggesting potential for future research reinforcement. Clusters like “social media” lie near the center, indicating emerging or transversal topics bridging different areas. The coupling analysis reveals that current scholarly discourse is intensely focused on combating misinformation in digital environments, while earlier core literacies remain structurally important yet under-explored in impact.

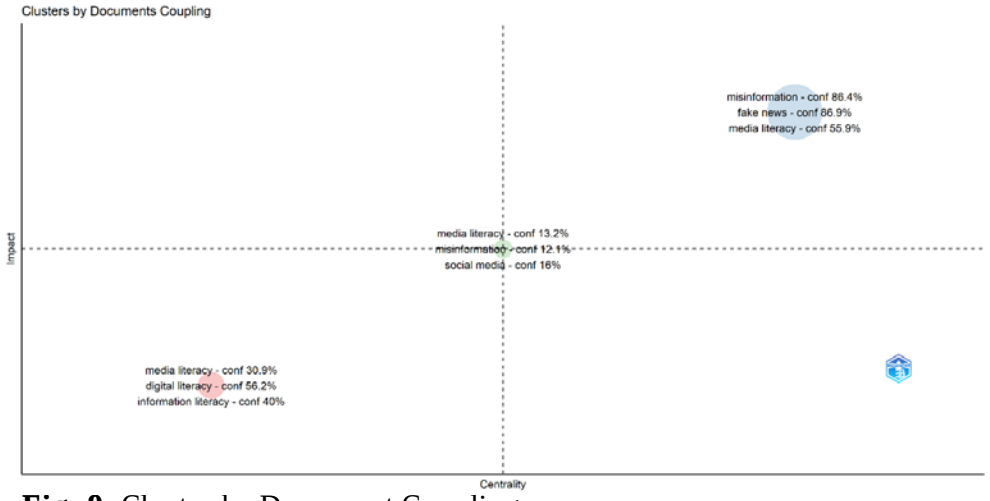

Fig. 9. Cluster by Document Coupling

Figure 10 visualizes the bibliographic coupling network of authors in the Media and Information Literacy in Education research landscape. Authors such as Alexander Fedorov, Sonia Livingstone, Emily K. Vraga, and Alexander J.A.M. van Deursen emerge as central figures, indicating their works are frequently cited alongside others. The node colors represent the average year of publication, showing the temporal evolution of author contributions, ranging from foundational scholars (darker nodes, earlier years) to emerging voices (lighter nodes, recent years like 2023–2024). The presence of both Western and non-Western scholars, such as Shaohai Jiang, Rida Afriliyasanti, and Petro Katerynych, reflects the field's growing international scope. This network highlights intellectual linkages and the authors shaping key dialogues in MIL, particularly across topics like misinformation, digital literacy, and education policy.

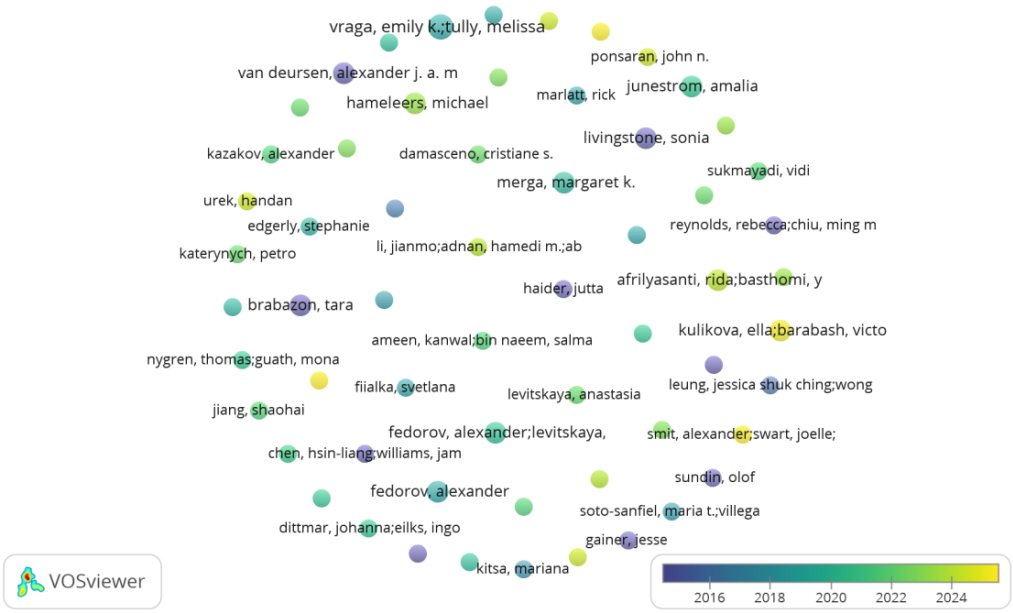

Fig. 10. Bibliographic Coupling Network of Authors

Figure 11 presents a global collaboration map illustrating international research partnerships in the field of Media and Information Literacy (MIL) in education. The map reveals that the United States, Spain, China, the United Kingdom, Australia, and Germany are the most active countries, both in terms of research output (darker red shading) and collaborative linkages (blue connecting lines). Strong bilateral and multilateral collaborations are evident among Western nations, especially across North America and Europe. Notably, there is increasing participation from emerging contributors such as India, Brazil, South Africa, and Malaysia, highlighting MIL's expanding global relevance. The density of blue lines connecting countries reflects a growing international research network, emphasizing MIL's recognition as a cross-border educational and policy issue. However, minimal activity is seen from several regions in Africa and the Middle East, suggesting the need for more inclusive global engagement.

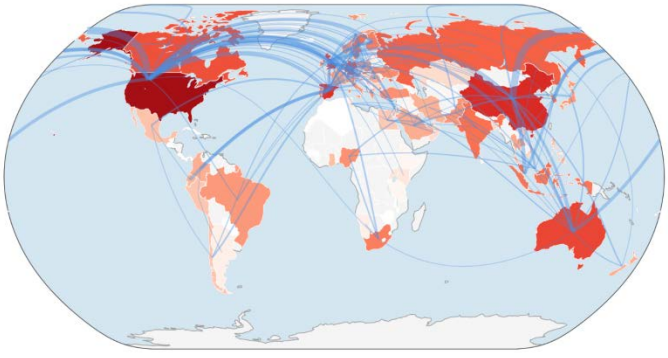

Fig. 11. Countries Collaboration Map

5. Conclusion

This bibliometric analysis of Media and Information Literacy (MIL) in Education from 2000 to 2025 provides a comprehensive overview of the field's growth, thematic evolution, and intellectual landscape. The study reveals a significant rise in research activity post-2010, largely driven by the digitalization of education and the increasing societal need to navigate complex information ecosystems. From foundational concerns with critical reading and media awareness, MIL has expanded to encompass dynamic competencies such as digital citizenship, misinformation resilience, and online ethical behavior. Prominent scholars, journals, and institutions from the Global North dominate the field, indicating both leadership and an imbalance in global knowledge production. Meanwhile, emerging contributions from the Global South signal a shift toward greater inclusivity and diversification of perspectives. Despite the maturity of the field, several challenges remain. The gap between MIL policy frameworks and classroom implementation continues to limit its real-world impact. Likewise, while research volume has grown, thematic fragmentation and geographical imbalance persist. The field must now pivot toward deeper interdisciplinary integration and practical application.

Looking ahead, future research should prioritize three key directions. First, there is a need for context-sensitive empirical studies that evaluate the effectiveness of MIL programs in diverse educational settings, particularly in low-resource or marginalized communities. Second, researchers should explore emerging MIL challenges such as AI-generated content, algorithmic bias, deep-fake technology, and data privacy concerns, areas that are underexplored but increasingly relevant in the digital age. Third, greater emphasis should be placed on South-South and North-South scholarly collaborations, ensuring more equitable participation in shaping the MIL research agenda. Mixed-methods studies, longitudinal impact assessments, and cross-cultural pedagogical research may also be essential in driving the field forward. Ultimately, MIL is no longer a supplementary skill but a foundational component of 21st-century education. Strengthening its research base, diversifying its voices, and ensuring its integration into formal and informal learning systems may be key to empowering future generations to critically engage with media and information in an increasingly complex world.

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