



# Exploring Trends in New Media Literacy (NML) Field: A Bibliometric Analysis Using Bibliometrix R-Tool

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## Abstract

In the context of rapidly evolving digital technologies, the dissemination of information in new media is accompanied by a number of challenges, including the proliferation of disinformation, fake news, and information pollution. Notwithstanding the growing importance of new media literacy (NML), its integration into educational programs and public policies remains insufficient. Moreover, research often focuses on narrow aspects or specific audiences, which limits the understanding of NML's societal impact. The objective of this study is to conduct a bibliometric analysis of extant research on new media literacy with a view to identifying key trends, research gaps and priority directions. A review of 217 publications from the Scopus database revealed that the primary research topics include the use of new media, social media, combating fake news, and fostering participatory culture. A geographic analysis identified the United States, Türkiye, and China as the countries with the most research output in this field. The study highlights the need for more in-depth educational programs, greater awareness among diverse social groups, and the use of interactive technologies to develop critical thinking skills. The findings are intended for researchers in media literacy, educators, policy-makers, and program developers interested in advancing NML and integrating it into societal and educational practices.

## Keywords

Media Literacy; New Media Literacy (NML); New Media; Social Media; Fake News; Disinformation; Education; Bibliometric Analysis; Scopus; Bibliometrix



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# Изучение тенденций в области новой медиаграмотности (NML): библиометрический анализ с использованием инструмента **Bibliometrix** для R

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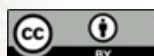
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## Аннотация

В условиях стремительного развития цифровых технологий распространение информации в новых медиа сопровождается такими вызовами, как дезинформация, фейковые новости и информационное загрязнение. Несмотря на возрастающую важность новой медиаграмотности (NML), её интеграция в образовательные программы и государственную политику остаётся недостаточной, а исследования часто сосредоточены на узких аспектах или определённых аудиториях, что ограничивает понимание влияния NML на общество. Цель исследования — провести библиометрический анализ существующих исследований в области новой медиаграмотности для выявления ключевых тенденций, исследовательских пробелов и приоритетных направлений. Анализ 217 публикаций из базы данных Scopus показал, что основные темы исследований включают использование новых медиа, социальные медиа, борьбу с фейковыми новостями и развитие культуры участия. Географический анализ выявил, что США, Турция и Китай являются лидерами в данной области. Исследование подчёркивает необходимость внедрения более глубоких образовательных программ, повышения осведомлённости среди различных социальных групп и использования интерактивных технологий для развития критического мышления. Результаты адресованы исследователям, занимающимся медиаграмотностью, педагогам, политикам и разработчикам образовательных программ, заинтересованным в продвижении NML и её интеграции в общественные и образовательные практики.

## Ключевые слова

медиаграмотность; новая медиаграмотность (NML); новые медиа; социальные медиа; фейковые новости; дезинформация; образование; библиометрический анализ; Scopus; Bibliometrix



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## Introduction

Media has been regarded as a significant force to be dominated and controlled by both governments and elite individuals or interest groups since it emerged. Those who recognize the power of mass communication to persuade and mobilize target audiences have made great efforts to monopolize the media and produce content and communication aligned with their interests. In this context, media literacy and new media literacy (NML) have emerged as critically important concepts for individuals to become aware of and develop resistance against these manipulative forces.

Traditionally, literacy is defined as the ability to understand and interpret a text (Kress, 2003). Historically, media literacy emerged from the idea of protecting children from the harmful effects of mass communication (Gün & Kaya, 2017). The term 'media literacy', which is considered the result of children's interactions with media during their leisure time and organized learning activities in schools, has garnered increasing global attention in recent years through policy initiatives, research projects, and educational practices (Erstad, 2010, p. 15).

The media is not only a tool that shapes culture but also constitutes culture itself (Wu & Chen, 2007). With new media technologies, the roles and experiences of users have transformed, leading to the necessity of being literate in new media environments, which are increasingly uncontrolled and susceptible to various dangers. Developments in new media technologies have also transformed the concept of literacy. As a relatively new concept and field of research, new media literacy (NML) is in a continuous process of development (Jocson, 2020, p. 49).

The subject of this research, NML encompasses a broad scope, and there is no clear consensus in the literature regarding its exact definition. NML is found to be used interchangeably and in conjunction with various concepts such as cyber literacy, social media literacy, digital literacy, information literacy, and network literacy. In this research, the concept of NML has been chosen, as it is believed to be of increasing importance and requires further contemplation now and in the future. Given the widespread use and significance of new media technologies, the need for new media literacy becomes evident. However, there are only few studies that provide a comprehensive approach to what new media literacy should be. This bibliometric study aims to examine the literature in the field of new media literacy, revealing the characteristics of existing research. The primary objectives of the current research are to understand the concept and scope of new media literacy, identify current research trends and focal points, and offer suggestions for future research areas. The longstanding inadequacy of studies on media literacy, coupled with the multifaceted and complex nature of new media, has resulted in a significant gap in this field. To address this gap and identify trends in new media literacy, this study seeks to answer the following questions:

**RQ1.** How is the concept of new media literacy (NML) being discussed?





**RQ2.** What is the distribution of research conducted on NML in terms of years, countries, authors, citations, and collaborations?

**RQ3.** What are the emerging topics and trends in NML research?

## **Literature Review**

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### ***Media Literacy***

Media literacy is defined as a concept and practice essential for individuals to be knowledgeable and competent in an environment filled with increasingly diverse media tools, social networks, and messages (Aufderheide, 1993). Another definition characterizes media literacy as a discipline aimed at critically examining the content and production processes of media and contributing to media production (Jolls & Wilson, 2014, p. 68). In the first half of the 20th century, in the United Kingdom, the distinction between high culture and popular culture proposed by Leavis & Thompson (1950) and taught to students can be considered the beginning of media literacy. During this period, a protective approach was adopted against the increase of popular culture in the print media era, with an aim to promote high culture (Buckingham, 2013). In the 1950s, in the United States, the concept of media literacy was introduced as the impact of mass communication tools such as radio and television on people's daily lives and education became increasingly apparent.

Interdisciplinary by nature, media literacy is associated with four fundamental theoretical approaches: (a) protecting against the negative effects of mass media, (b) challenging the dominant power of mass media, (c) understanding the constructed nature of media messages, and (d) acknowledging elements such as play, identity, voice, and subjectivity in media consumption and production practices (Hobbs, 1999). (Livingstone, Van Couvering & Thumin (2004), outlined three primary purposes of implementing media literacy: (a) promoting democracy, participation, and active citizenship, (b) enhancing competition and choices within the knowledge economy, and (c) fostering lifelong learning, cultural expression, and personal satisfaction. However, globally, the greatest obstacle threatening the future of media literacy is the perception and attitudes that it is not sufficiently prioritized or taken seriously. Some researchers view media literacy as a tool to minimize potential negative impacts of media, such as media violence, cyberbullying, stereotyping, or consumer culture, when examining how media influences people's attitudes, beliefs, and behaviors. Media literacy has been presented as a solution to the need for children and young people to cope with the risk of being deceived or misled by advertisements, news, and media messages from Hollywood. According to this approach, users vulnerable to negative media messages must possess the necessary knowledge and skills to protect themselves against these dangers and adopt a critical attitude (Hobbs et al., 2019). In this context, for the future of media literacy studies, five recommendations are proposed (Bulger & Davison, 2018, p. 4):



1. Efforts to enhance understanding of media tools are crucial. With the emergence of new technologies and rhetorical techniques, existing programs need to be updated accordingly.
2. Interdisciplinary collaboration should be fostered. While media literacy is often perceived as a limited pedagogical field, research and findings from other disciplines such as social psychology, political science, and sociology can generate new insights and benefits for media literacy.
3. As contemporary issues like misinformation and fake news continue to rise, media stakeholders should be brought together to seek cohesive solutions.
4. Establishing a central and stable database would provide the opportunity for accurate and reliable assessments.
5. Media literacy education has traditionally focused on interpreting, critiquing, and analyzing media content. However, with the widespread use of social media, it is crucial to not only address media content but also examine the behaviors exhibited by users on media platforms. Therefore, media literacy curricula should evolve to not only interpret media content but also emphasize action, by considering interactions and posts of users on social media platforms.

These recommendations are optimistic, yet they fall short in addressing the constantly evolving new media technologies and user experiences, which differ significantly from traditional media. While studies in NML offer valuable suggestions for enhancing understanding of new media technologies, increasing interdisciplinary collaboration, combating misinformation, and expanding the scope of media literacy education, they often lack practical implementation. There is an urgent need for more practical applications specific to this field, increased collaboration, policy support, and resource allocation to effectively address these challenges.

### ***New Media Literacy (NML)***

Computer games to websites, virtual and augmented reality applications to 3D animated films, many new technological developments are defined as new media (Manovich, 2002). One distinguishing feature of new media compared to traditional media is its ability to compress, digitize, process, store, and transmit texts, data, sounds, and images (McQuail, 2010, p. 137). Another characteristic of new media is user-generated content, unlike traditional media and mass communication tools (Nakayama, 2017, p. 70). Users quickly adopt new media technologies and transition from passive consumers in traditional media to active roles as prosumers (Chen et al., 2018).

NML, as a result of the fundamental changes in the ways of accessing, producing, and sharing information in the digital age, has strong intersections with different types of literacy. Examining these intersections within a more robust theoretical framework requires a simultaneous consideration of topics such as digital





platform management, algorithmic literacy, and the social dynamics of media consumption. The literature connecting these topics illuminates the complex structure of the digital media environment while also highlighting why NML necessitates distinct attention compared to other literacies. Zuboff (2019) explains how the functioning of digital platforms guides individuals' media experiences. Users are defined as digital participants who, while being content producers and consumers, are also exposed to the algorithms and commercial strategies of these platforms. In this context, NML encompasses individuals' understanding of the functioning of digital platforms, management policies, and the ways user data is utilized. A critical examination of the management processes on digital platforms facilitates the development of more conscious user behavior regarding participation culture (Jenkins, 2006) and content production.

Another significant intersection at the heart of NML is algorithmic literacy. It involves the ability of individuals to understand how algorithms function and how these algorithms influence media consumption habits (Livingstone & Sefton-Green, 2016). Digital media users need to be active participants who move consciously against content filtering by understanding the impact of algorithms rather than being merely passive consumers. In this framework, NML enables individuals to comprehend how algorithms guide media content and contribute to the spread of misinformation (Noble, 2018).

Furthermore, NML serves as a tool that helps individuals to understand the role of social interactions in their media consumption and the way these interactions shape thought patterns. McLuhan (1994) examines the effects of media tools on society and emphasizes that media transforms society through its form rather than its content. According to this theory, the technological structure of media shapes social relationships and influences individuals' thought processes. Castells (2009) argues that digital platforms operate through social networks and explains how individuals reorganize social relations by sharing media content through these networks. As content circulates within social networks, it influences interactions between individuals and groups, leading to the intertwining of social dynamics with media content. In this context, NML plays a critical role in understanding how media content intersects with social dynamics and enables individuals to become more effective and conscious participants in the digital environment.

Today, ordinary people have the ability to create and publish content that reflects their own thoughts, values, beliefs, and ideologies, much like website and social media platform owners or managers. This blurs the distinction between sender and receiver roles in a classic communication process. Therefore, considering the transformations occurring in both society and media, there is a need to reconceptualize media literacy by incorporating new experiences and user skill sets emerging on new media platforms (Ugurhan et al., 2020, p. 161). This is because easy access to new media applications and smart devices by users does not necessarily imply that they use new media correctly and effectively.



With the rising role of digital media, the terms defining the concept of “media literacy” have become increasingly complex and interrelated. There is a growing overlap among concepts such as Information and Communication Technologies (ICT) literacy, digital literacy, information literacy, and UNESCO’s Media and Information Literacy (MIL). For instance, the term ‘digital literacy’ is often used synonymously with ‘information literacy’ and generally refers to the “capacity to create new knowledge by effectively and critically evaluating information from different sources, particularly digital sources.” This process involves the use of various tools and digital technologies (UNESCO, 2013, p. 29). The concept of NML, while integrating critical thinking and the ability to exist effectively and consciously in the digital world alongside concepts like digital literacy and information literacy, emphasizes creativity and productivity by focusing on new media and user-generated content (Livingstone, 2004). The uniqueness of NML lies in its expansion of traditional media literacy concepts to encompass the multifaceted and interactive nature of digital technologies, social media platforms, and user-generated content. This involves individuals participating not only as consumers of media content but also as active content producers.

The concept of literacy has evolved from classical literacy (reading and writing) to visual-literacy and digital literacy. Lately, a more comprehensive approach known as new media literacy (NML) has emerged distinctively (Livingstone, Van Couvering & Thumin, 2004). NML is defined by the ability to access, critically assess, analyze, and generate various forms of online information including sound, text, images, and video in online environments (Park, Kim & Na, 2015; Zhang, Zhu & Sang, 2014). All concepts of literacy, including digital literacy, traditional literacy, information literacy, visual literacy, that have been produced from the past to the present are synthesized by NML. A conceptual framework that includes critical consumption, critical production, and functional consumption literacies is used to explain this type of modern literacy. The process of accessing and understanding media content falls within the scope of functional consumption literacy. With critical consumer literacy, people may examine the intentions, meanings, and consequences of media information and gain a deeper understanding of this concept. While critical production literacy requires taking cultural, social, and political factors into account in developing media material, functional production literacy provides people to actively participate in the process of creating media content (Wu & Wang, 2011).

Xiao et al. (2021, p. 2) state that traditional media literacy is insufficient to explain the profound changes in new media. Elements such as disinformation, fake news, and hate speech particularly contribute to the spread of misinformation among users and foster political polarization (Lorenz-Spreen et al., 2022, p. 83; Rahyadi, 2019).

While new media technologies empower advocates of democracy to amplify their voices and unite for social change, they are equally exploited by organized groups, including hate groups, to further their agendas (Laub, 2019). This situation





deepens the discussions around freedom of expression while simultaneously increasing the importance of new media literacy. Individuals' abilities to analyze and evaluate media content help them understand the dissemination of both positive and negative discourses and challenge opposing viewpoints. Therefore, effective NML can serve as a shield against hate speech and disinformation while promoting democratic participation.

People who use social media and new media technologies face numerous risks, including manipulation, fraud, cyberbullying, fake news, and disinformation. Users must get information and content with a critical and logical perspective in order to overcome these risks (Chiu, Liang & Tsai, 2016; Warner-Søderholm et al., 2018). This viewpoint is associated with epistemological beliefs, which involve evaluating the correctness and reliability of knowledge (Celik, 2019). Epistemological beliefs are likely to play a basic part in evaluating data sourced from social media. Questioning the source of knowledge is an ability expected from new media literates and therefore, individuals' epistemological beliefs can provide an insight into their level of new media literacy (Lin et al., 2013).

Social media users are constantly confronted with an endless stream of news and content, accompanied by an ever-updating timeline. This overwhelming flow of information can make it difficult to discern credible sources, prioritize important issues, or even take a mental break, as the platforms are designed to keep users engaged at all times. Disinformation on social media regularly spreads more quickly, profoundly, and broadly than truth, to a great extent encouraged by algorithmically curated news bolsters on social media systems (Vosoughi, Roy & Aral 2018). In addition, due to reasons such as need of oversight and unintentional content dissemination, disinformation has gotten to be a critical and far-reaching issue nowadays. Within the challenge against disinformation, users require different abilities to recognize truth from fiction (Miller, Menard & Bourrie, 2024, p. 2). These skills are defined as NML. The basic components of NML include important skills such as access, analysis, evaluation, criticism, production, and engagement with media content (Lee et al., 2015, p. 85). New media literate users are aware of issues such as how and for what purposes messages are created, disseminated, and commercialized (Thoman & Jolls, 2004). In addition to being able to use different media tools effectively, they can also critically evaluate messages and become content producers in new media (Kellner & Share, 2007). In the future, given that technology will continue to advance rapidly, NML will gain even more importance and become a critical skill for all segments of society. Developing this skill will enable individuals to communicate confidently and effectively in the digital world.

## **Research Methodology**

The current research deals with NML, which has become an increasingly important topic in recent years. The main purpose of the research is to reveal the trends of research on NML, to identify existing gaps and to provide a guide





for future research. In this context, bibliometric analysis was used to answer the research questions and to reveal the literature quantitatively. Compared to other review methods such as systematic literature review or meta-analysis, bibliometric analysis generally adopts a broad approach that reveals the structure and dynamics of a research field (Ozturk, 2021). As it is more powerful and versatile than other software (Arruda et al., 2022), bibliometric analyses were performed through *Biblioshiny* – a web-based interface of Bibliometrix as an open source coded in R programming language (Aria & Cuccurullo, 2017).

In the data collection process, the Scopus database was used for bibliometric analysis, which uses a wide scope of publications and a system of subject categories and subcategories for content organization (Pranckutė, 2021). However, the reliance solely on the Scopus database plays the most notable limitation of this study. While Scopus is a comprehensive database that includes numerous academic journals and publications, it does not have the capacity to reflect the entirety of the literature related to NML.

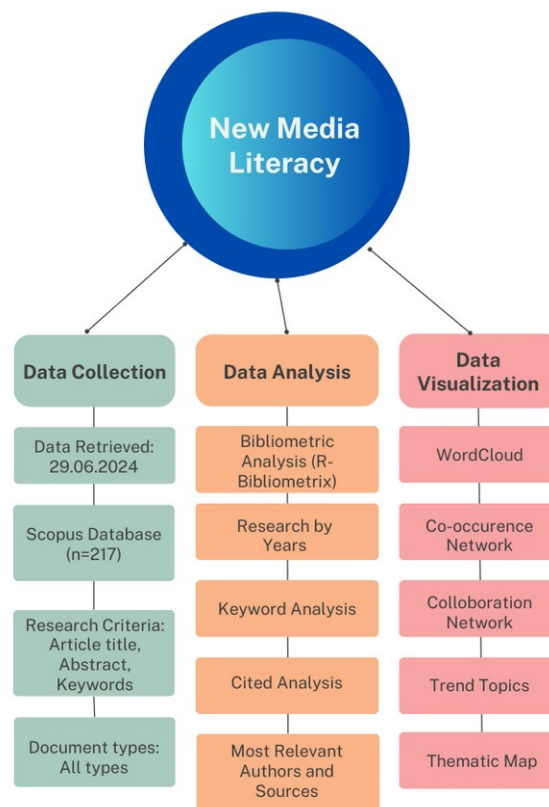


Figure 1. Research design



In the search conducted in Scopus with the word group “new media literacy” dated 29 June 2024, filtering was made to be found in research titles, abstracts or keywords and a total of 225 academic research were reached. No restriction was made in terms of document type and all document types such as research articles, book chapters, books, conference proceedings were included in the analysis. The results were exported in BibTeX format; duplicates were excluded, resulting in 217 studies, which were then subjected to analysis based on keywords, publication years, citations, countries, authors, and collaborative partnerships. The obtained data was visualized and interpreted to reveal current trends.

## Results

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The first research in the field of New Media Literacy (NML) was published in 1997 in the Scopus database. A total of 217 studies authored by 409 researchers and cited in 178 different sources, have been identified. NML has predominantly been studied within the fields of social sciences (193 studies) and computer sciences (64 studies). Research predominantly takes the form of research articles (134) and book chapters (47). Approximately 18.89% of the studies involved international collaboration among authors, indicating global interest in the topic and collaborative efforts among researchers from various countries. The studies employed a total of 596 keywords, reflecting the diverse subtopics within the field and multiple perspectives explored by researchers. Furthermore, the annual growth rate of research in this area is 9.97%, highlighting increasing annual interest in new media literacy and a growing number of studies conducted in this field. Key findings from the research are summarized in Table 1.

The data in Table 1 indicates that NML research has been conducted over a period of 27 years, underscoring the development of NML as an area of growing academic interest. It can be argued that NML studies gained momentum starting from 1997, coinciding with the increasing prevalence of digital technologies and new media tools. Additionally, an average of 20.19 citations per document suggests that NML research has had a significant impact on the scientific literature. The high citation rate implies that studies in this field serve as key reference points for other researchers. In summary, the data in Table 1 demonstrates that NML has become an important academic research field and continues to grow. The diversity of studies and international collaborations further prove that NML is a globally discussed topic.

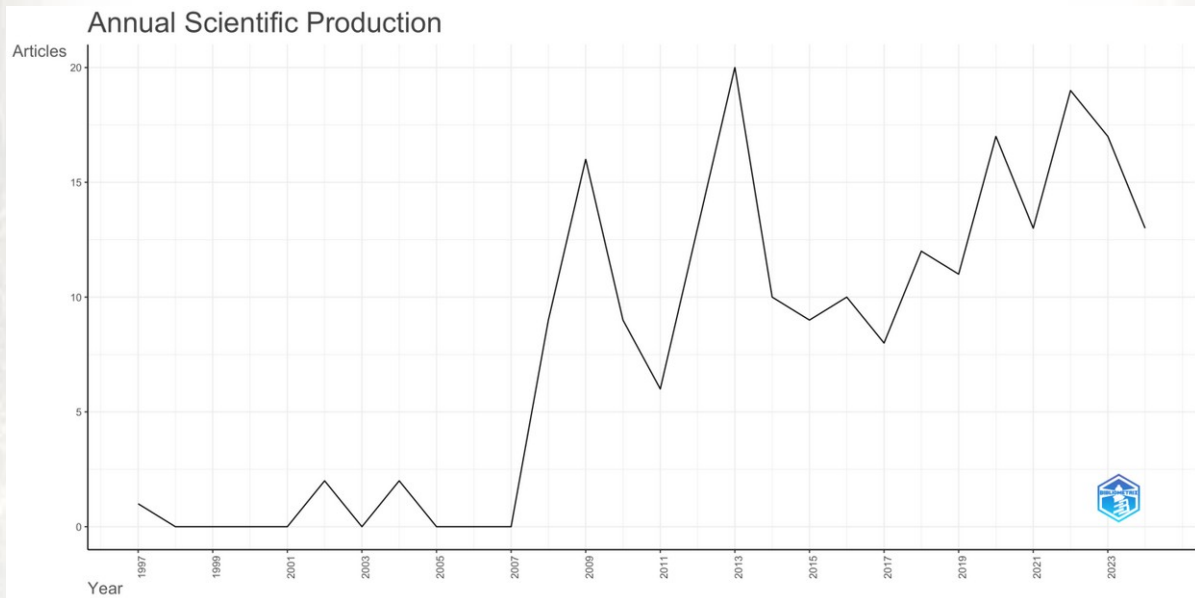




**Table 1. Main information data of new media literacy (NML) research**

Main Information	Results
Timespan	1997-2024
Documents	217
Sources	178
Authors	409
Author's Keywords (DE)	596
International Co-Authorship	18.89%
Average Citations per document	20.19
Annual Growth Rate	9.97%

Figure 2 depicts the distribution of NML research over the years. Particularly since 2007, there has been an increase in the number of studies, with the highest number of publications on the subject occurring in 2013 (n=23). Overall, NML research shows a fluctuating trend over the years. Moreover, the significant increase in NML research since 2007 can be primarily attributed to the widespread adoption of new media platforms and their global reach in terms of user numbers starting from this year.



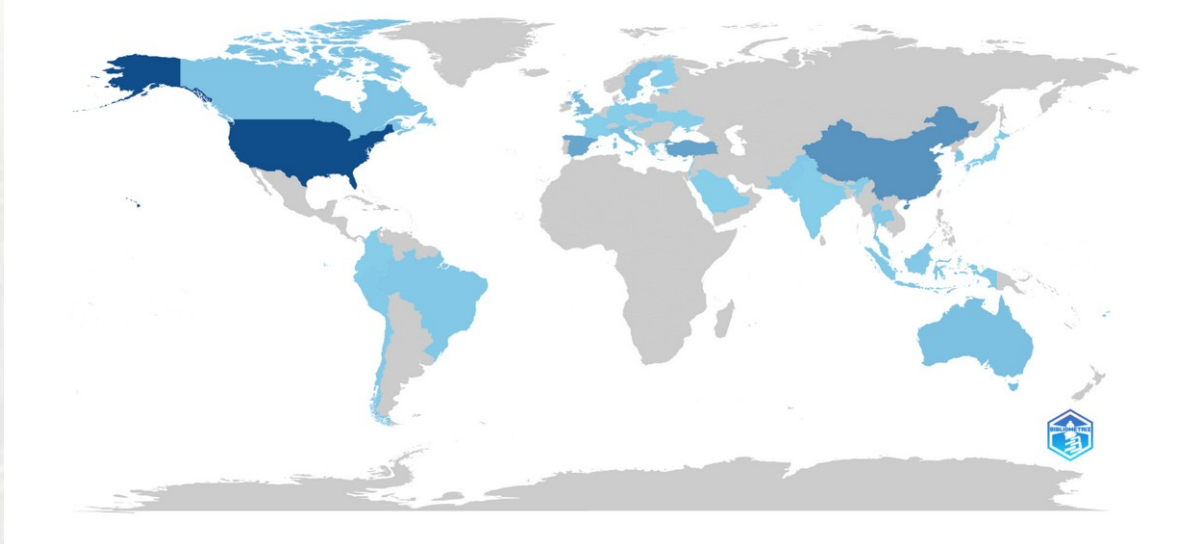
**Figure 2. Annual scientific production of NML research**

When the distribution of NML research by country is examined, the United States (USA) is identified as the leading country in terms of publications in this field. This demonstrates that the U.S. serves as one of the key academic centers



pioneering NML research. The country's leadership in media and digital technologies has contributed to a heightened awareness of media literacy, positioning NML as a significant focus within both educational policies and academic work. The U.S. is followed by countries such as China, Turkey, Spain, the United Kingdom, Taiwan, and Australia. As shown in Figure 3, NML research is primarily concentrated in North America, Asia, and Europe. The lack of research from regions such as Africa and Russia is particularly noticeable. In Africa, limitations in access to digital media and technology, infrastructure issues, and economic challenges are believed to have contributed to the underrepresentation of NML research. It is observed that NML research is also insufficiently represented in countries such as Russia, Argentina, and Greenland, in addition to Africa. Therefore, further research and initiatives aimed at encouraging critical analysis of media content are needed to foster the development of NML in these regions.

#### Country Scientific Production

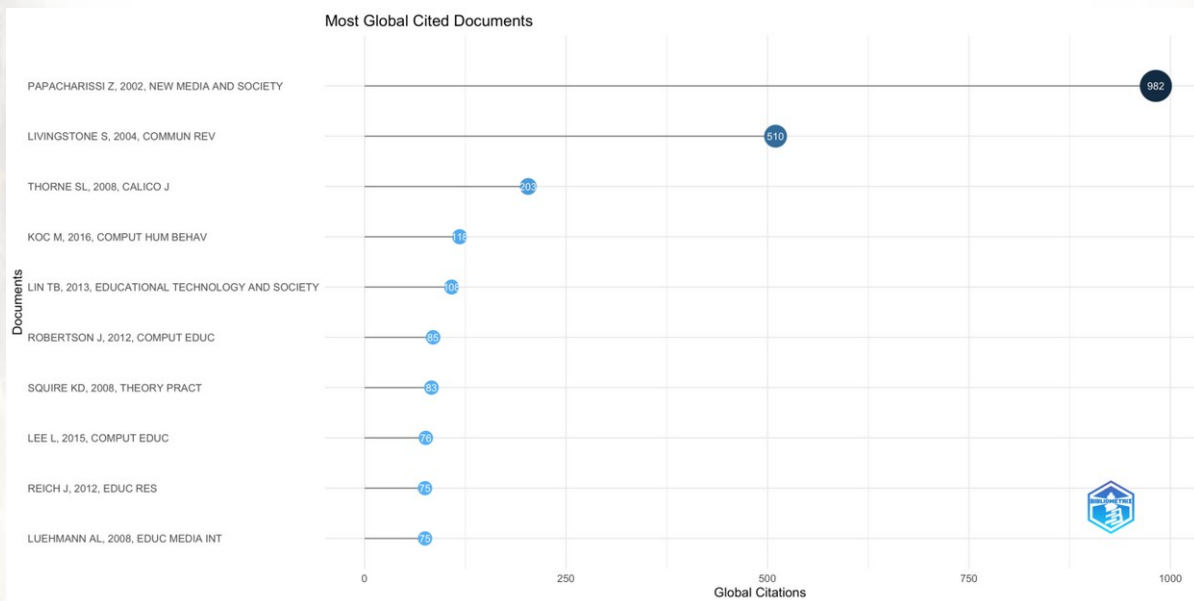


**Figure 3. Countries scientific production of NML research**

In global NML research, the most cited author is Papacharissi (2002) with 982 citations, followed by Livingstone (2004) with 510 citations, and Thorne & Reinhardt (2008) with 203 citations. Additionally, it is observed that older studies tend to have more citations compared to more recent research.

Based on Table 2, which outlines the sources where NML research is most frequently published, it can be inferred that the field of NML is closely associated not only with communication sciences but also with computer sciences and education. This suggests that NML is an interdisciplinary subject, drawing connections between these fields.



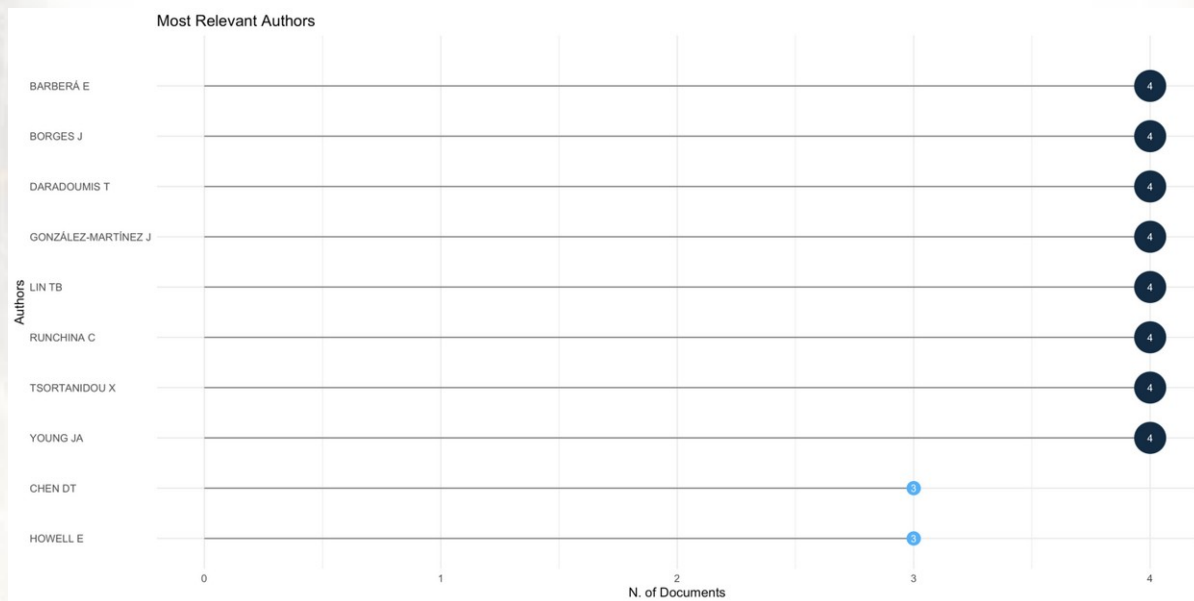


**Figure 4. Most global cited of NML research**

**Table 2. Most relevant sources of NML research**

Sources	Number of Publications
Computers and Education	6
Handbook of Research on New Media at the K12 Level Issues and Challenges	6
New Media and Society	5
Computers and Composition	3
Education and Information Technologies	3
Media Literacy Education in Action Theoretical and Pedagogical Perspectives	3
Oxford Handbook of Information and Communication Technologies	3
Communication in Computer and Information Science	2

The top 10 researchers with the most publications in the field of NML are shown in Figure 5. Leading the list with 4 publications each are “Barberá, E.,” “Borges, J.,” “Daradoumis, T.,” “González-Martínez, J.,” “Lin, T.B.,” “Runchina, C.,” “Tsortanidou, X.,” and “Young, J. A.”



**Figure 5. Most relevant authors of NML research**

The word cloud depicted in Figure 6 reflects the core focus areas and significant topics within NML research. Among the most frequently used keywords by authors in NML research are “new media literacy,” “social media,” “new media,” “technology,” “digital literacy,” “fake news,” “information literacy,” “participatory culture,” “pedagogy,” “higher education,” “university students,” and “transmedia learning.” This word cloud emphasizes subjects such as digital media, information sharing, disinformation, methods used in media education, and effective information management in the digital world. Furthermore, it highlights that NML is not only limited to the use of technology but also encompasses critical thinking in digital environments, distinguishing reliable information sources, and effective communication skills. Therefore, NML emerges as an essential competence for educators, students, and media professionals to succeed in modern society.

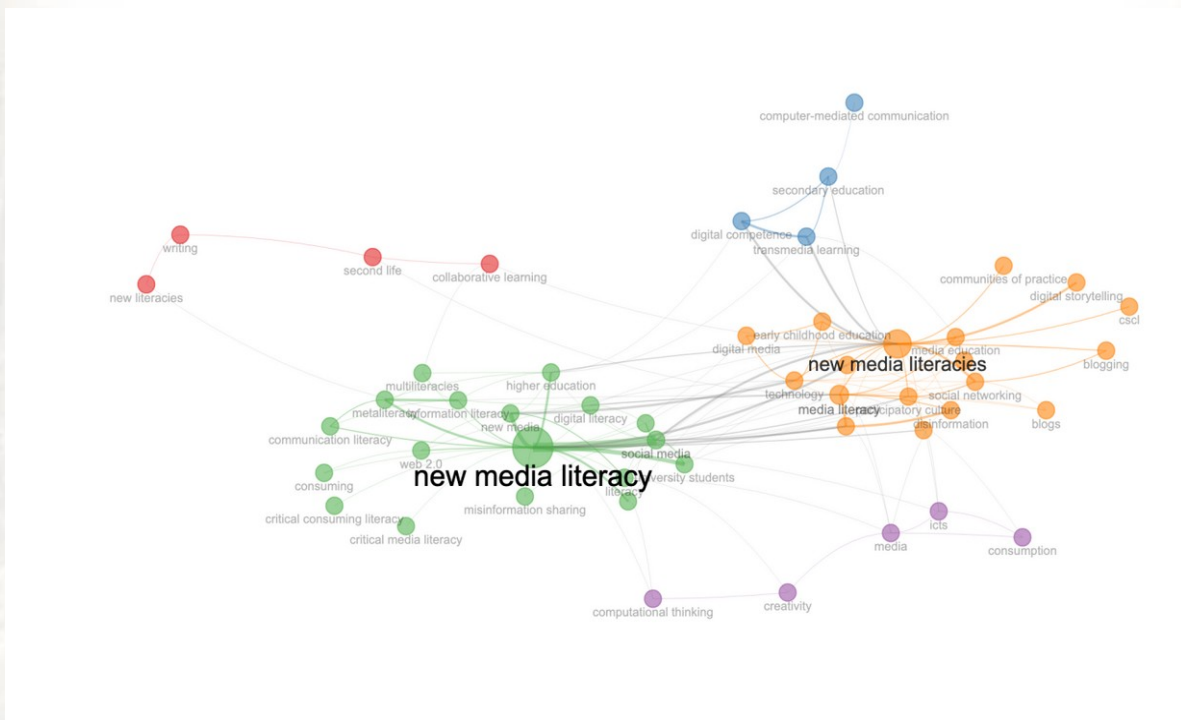


**Figure 6. Word cloud of NML research**





Co-occurrence analysis is a powerful tool for uncovering hidden patterns and relationships within data, providing valuable insights across various fields. Figure 7 illustrates the co-occurrence of keywords used in the research. In the network, elements of the same color represent clusters, while the size of the nodes indicates the frequency of the terms. Additionally, the proximity of nodes within the same cluster signifies an increased frequency of co-occurrence. The data reveal that certain nodes occupy central and critical positions in the network, establishing strong connections with other nodes. Notably, the clusters for “new media literacy” and “new media literacies” are situated at the center of the network and have a high impact. In Cluster 3 (new media literacy), the most frequently used keywords include new media literacy, new media, social media, higher education, digital literacy, literacy, information literacy, and internet. In Cluster 5 (new media literacies), it is observed that keywords such as media literacy, fake news, technology, participatory culture, social networks, misinformation, and digital literacy are used together. Other notable keywords in the research include collaborative learning, computational thinking, transmedia learning, social media, metaliteracy, and misinformation sharing, which are prominent in other clusters.

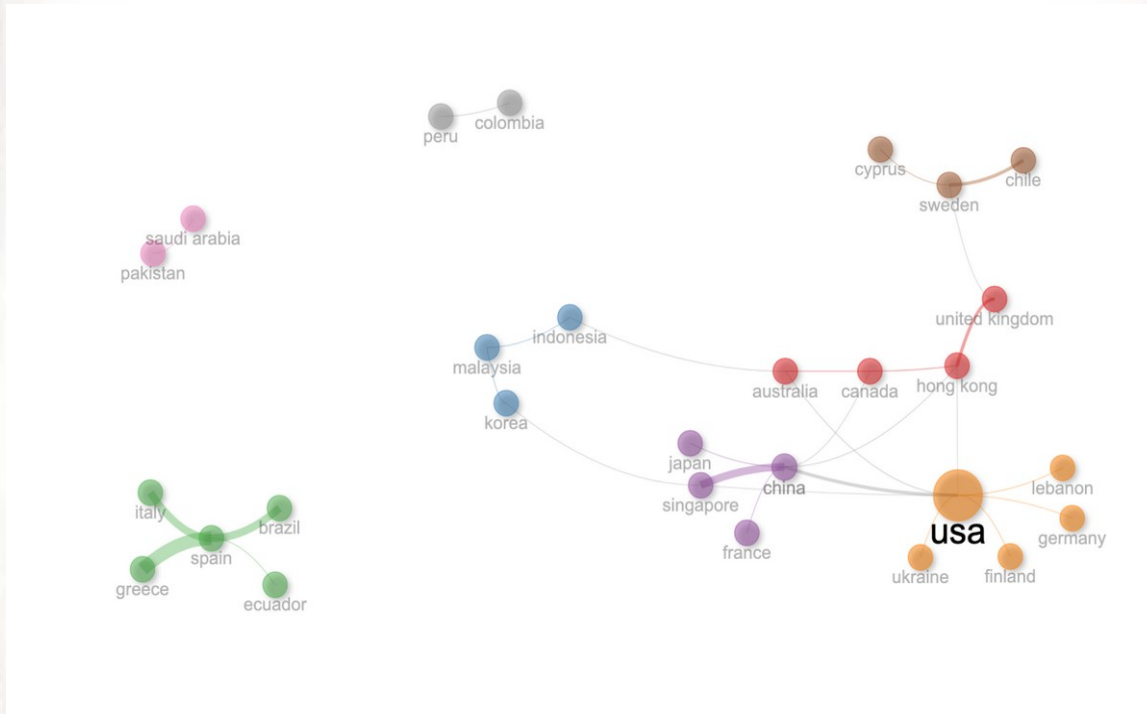


**Figure 7. Co-occurrence network of NML research**

Figure 8 illustrates the countries that collaborate in NML research. The United States, as the country with the most publications, has a broad collaboration network extending from Ukraine to Lebanon and China. China typically collaborates with



nearby Asian countries, while other countries often publish research through partnerships within their own regions.



**Figure 8. Collaboration network of NML research**

Trend topics are used to understand how certain subjects evolve over time and which topics become popular in scientific publications or academic literature. Figure 9 presents the trend topics related to terms in NML research. “Fake news” and “higher education” have emerged as the most frequently used terms in recent years. In NML research, the term “fake news” is often associated with the study of how fake news is produced, disseminated, and perceived on social media and other digital platforms. These studies aim to understand how people can identify fake news, distinguish reliable sources, and approach information with a more critical mindset. The term “higher education” typically encompasses education and research conducted at universities or higher education institutions. In the context of NML research, these topics are examined to explore how students and academics handle digital media and information, and what education and skills are necessary for them to develop critical thinking abilities.

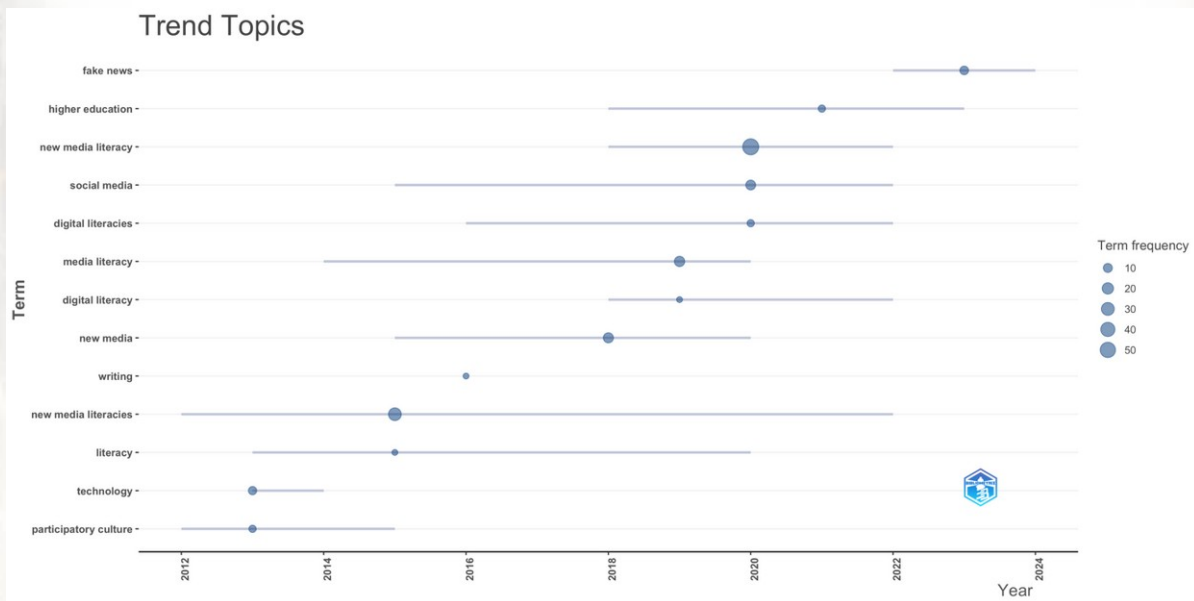


Figure 9. Trend Topics of NML research

The thematic map in Figure 10 visually presents the development and importance of themes within the NML field. The relevance degree (centrality) indicates how central a theme is to the field: the further to the right, the higher the centrality. The development degree (density) shows the level of development of the themes, indicating how extensively they are studied or how advanced they are; the higher up, the greater the development degree. Some themes on the map are larger and darker, indicating they are more intensely studied or given more importance. The map is divided into four main quadrants: **Niche themes** (1): Located in the upper left section of the map, these themes have a high development degree but low centrality, indicating they are well-developed but not central to the field. **Motor themes** (2): Found in the upper right corner, these themes have both high development and centrality degrees, representing important and advancing topics in the field. **Emerging or declining themes** (3): Located in the lower left section, these themes have low centrality and development degrees, suggesting they are either emerging or declining in importance. **Basic themes** (4): The themes in the lower right corner of the map are topics with high centrality but low degree of development. These themes represent the core and widely recognized topics of the field.

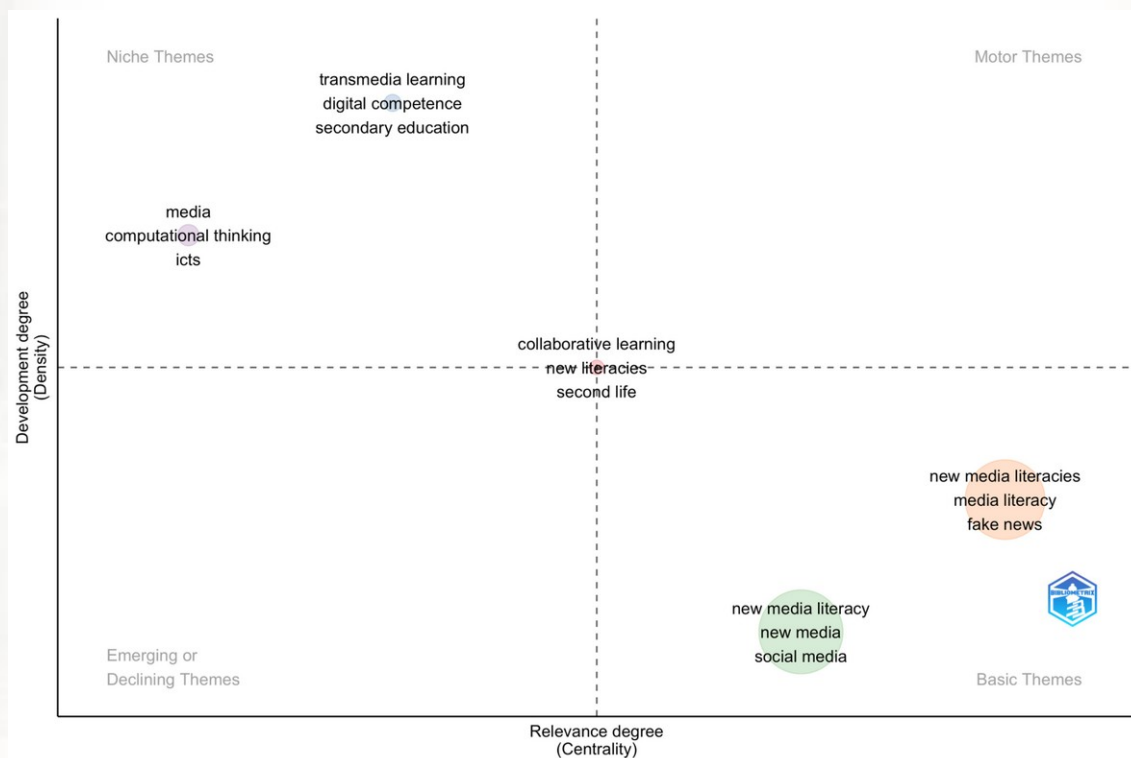
In the case of NML research, prominent 'niche' themes include transmedia learning, digital competence and secondary education, and computational thinking and ICTs. *Transmedia learning* refers to the dissemination and integration of learning experiences through different media platforms and formats. This method increases students' access to information and offers a more comprehensive learning experience. *Digital competence* is the ability of individuals to use digital technologies effectively, efficiently, and ethically. *Computational thinking* is the process of using





computer science concepts to solve problems and communicate solutions effectively. This includes skills such as algorithmic thinking, pattern recognition, abstraction, and automation. When combined with information and communication technologies (ICTs), students can apply these skills using a variety of digital tools and platforms. This helps students to become not only technology users but also technology creators. The importance of NML within the theme of secondary education starts with developing students' skills to access, evaluate, and share information. This process covers various competences such as internet safety, digital communication, critical thinking, and media production. By acquiring these skills, students become aware and responsible individuals in the digital world. Moreover, integrating NML into the education curriculum enables students to make informed decisions and develop innovative solutions using digital tools. Thus, new media literacy enables students in secondary education to acquire 21st century skills and take part effectively in the digital world. These themes are expected to show further development in the field of NML.

Media literacy, new media literacy, new media, social media, and fake news themes are seen as basic concepts in NML research. Collaborative learning, new literacies and second life themes in the center of the map represent the central topics of the field. These topics have an average position in terms of both development and centrality. That is, there is a continuous development in these areas, but they are not yet fully mature or the most central topics.



**Figure 10. Thematic map of NML research**



## Discussion

The current study focuses on the concept of NML, and the trends related to NML antecedents and successors. The fact that researchers from various fields such as social sciences (Alper, 2011; Tugtekin & Koc, 2019; Xiao & Yang, 2024), psychology (DiSessa, 2007; Xu, Wang & Hsu, 2022), computer sciences (Long, Zu & Chen, 2023; Plester & Wood, 2009) and educational sciences (Nixon, 2021) have examined NML indicates that it is an interdisciplinary concept.

In recent years, the frequent use of the term “fake news” in NML research has attracted attention. This reflects intensive research on the production, dissemination, and perception of fake news in new media environments. These studies aim to improve the public’s ability to recognize fake news, increase the capability to distinguish reliable sources and adopt a more critical approach to information. Since the spread of fake news poses a major threat to democratic processes and public safety, research on this topic is crucial. The need for research to co-operate with real-life practices and regulations, and for concrete steps to be taken by both policymakers and platform owners, remains a major challenge. Therefore, new mechanisms should be developed to increase the reliability and transparency of information disseminated on platforms and effective verification systems should be implemented to prevent the spread of fake news. Furthermore, educational materials and programmes should be provided more effectively to equip users with NML and critical thinking skills. The widespread use of new media technologies recommends that academic institutions, civil society organizations and governments collaborate with these platforms and seek ways to improve users’ experiences.

The fact that there are different definitions and classifications related to the concept of NML in the literature and that the concept is used instead of or together with other concepts causes NML research to be inadequate both quantitatively and qualitatively. Within the scope of the current research, it is thought that clarifying the differences between NML and concepts such as social media literacy, digital literacy, information literacy, e-literacy, visual literacy.

Bringing them together under the umbrella of NML will be crucial for enhancing the effectiveness of the concept’s significance and regulatory framework. In the current research, the importance, and fundamental characteristics of NML are grouped under the following 8 headings:

**Being Present in the Digital World:** It is crucial to be digitally literate to effectively exist on social media, blogs, podcasts, and other new media platforms. **Disinformation and Fake News:** Due to the nature of today’s digital environment, information pollution and the spread of fake news have become a serious problem. NML improves the ability of individuals to detect such misleading and manipulative content and to recognize accurate information. **Comprehensive Critical Thinking:** New media consists of multimodal content such as text, audio, video, and graphics. This situation reveals the need for individuals to improve their critical thinking skills





with NML and to increase their ability to analyze and evaluate various media contents. **Effective Communication and Content Creation:** NML enables individuals to communicate more effectively and make their voices heard by improving their ability to produce and share their own content. **Social Participation and Citizenship:** New media environments increase the participation of individuals in social and political processes. NML helps individuals to become more active and conscious citizens by developing their digital citizenship skills. **Privacy and Security:** Currently, the protection of personal data and online security is an important issue. NML helps individuals to use new media consciously and increases their awareness in combating negative situations in the digital environment. **Business and Career:** NML helps individuals acquire the necessary digital skills to succeed in their jobs and careers. **Cultural Diversity:** New media provides access to content from diverse cultures and perspectives. NML equips individuals with the ability to understand and appreciate different cultures.

## **Conclusion and Implications**

In the new media ecosystem, the dissemination of information is rapid and extensive. This situation brings about problems such as fake news, disinformation, and information pollution. NML aims to enhance individuals' abilities to access accurate information, verify sources, and develop critical thinking skills. Particularly, the spread of disinformation through new media further underscores the importance of NML.

While NML research has certain impacts on public policy, education, and media management, there are notable deficiencies in the studies conducted in this field. The integration of NML into public policies often remains superficial. Policymakers lack definitive and adequate data regarding the feasibility and sustainability of the strategies they develop to promote NML. From an educational perspective, NML has not been sufficiently integrated into most curricula. Although some schools offer media literacy courses, these classes often remain superficial and do not provide content deep enough to enhance students' critical thinking skills. The absence of a systematic approach to NML limits students' abilities to effectively analyze and evaluate media content. Additionally, the lack of sufficient knowledge among educators about NML is a significant factor affecting its implementation. Many teachers are not familiar with current information and pedagogical methods related to media literacy. Consequently, there is a pressing need to update educational curricula and develop more comprehensive training programs for educators.

NML research has shown that the needs of individuals from diverse socio-economic and cultural backgrounds are not adequately addressed. Disadvantaged groups, in particular, face challenges in accessing new media and NML, which threatens their right to equitable access to information. Most studies tend to focus on a specific audience and should address the effects of broader factors, such as gender, age, and economic status, in a more comprehensive manner.





For example, as illustrated in the word cloud in Figure 6, it has been found that research is generally biased towards university students. However, university students represent a specific demographic group, which raises questions about the generalizability of NML research. Adolescents, seniors, and individuals across all age categories exhibit different characteristics in terms of new media usage, experiences, and access to information. The insufficient consideration of NML experiences among individuals from various age groups, socio-economic backgrounds, and cultural contexts narrows the scope of the research. This limitation complicates the understanding of NML's impact on society as a whole. In this regard, potential future steps for NML research could include:

1. In the field of education, customized NML programs should be developed for students of different age groups and socio-economic backgrounds. For instance, engaging and interactive methods can be employed for elementary school children, while university students may benefit from a focus on in-depth analysis and critical thinking skills. Additionally, new technologies and digital platforms should be effectively utilized in NML education. Learning should be supported through tools such as online courses, mobile applications, and social media platforms.
2. Policymakers should organize awareness campaigns to enhance the importance of media literacy in society. This will encourage individuals to use media more consciously. Additionally, campaigns can be organized in collaboration with educational institutions, civil society organizations, and media companies to promote NML. Such partnerships increase the potential to reach broader audiences and create social impact.
3. New media platforms should develop interactive tools that enable users to enhance their critical thinking skills. For example, simulations and games could be created to help users identify fake news, analyze media content, or assess media effects.
4. New media platforms could develop tools that allow users to evaluate the content they encounter. For example, algorithms that analyze the credibility of content or systems that enable users to comment on the content could enhance NML.

In future research, involving content creators in NML studies will facilitate the development of a more comprehensive and effective approach that addresses all aspects of media literacy. Providing content creators with training on ethical standards and responsibilities will promote the production of accurate and reliable information. Research should emphasize the importance of content creators being knowledgeable about media ethics, disinformation, and propaganda. Enhancing NML among content creators encourages not only consumers but also producers to contribute to the media ecosystem. In this way, it will help improve the quality and reliability of media content, combat disinformation, and foster social awareness.



Finally, NML is of great importance in developing individuals' ability to approach content on new media platforms with a critical eye. In this context, negative content encountered, especially on social media – such as cyberbullying, hate speech, fraud, unauthorized sharing of personal data, pornographic content, drugs, and illegal gambling – poses serious risks to users due to a lack of NML. Cyberbullying threatens individuals' safety in their online interactions, while fraudulent attempts can lead to the compromise of users' financial and personal information. Similarly, unauthorized sharing of personal data can violate individuals' privacy and lead to various consequences. The spread of illegal content, such as pornography and drugs, negatively impacts especially young individuals, while illegal gambling activities exacerbate societal issues. Therefore, enhancing individuals' NML has become a critical necessity for them to cope with such adversities and to navigate the digital world consciously and safely.

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