Evolving trend of media literacy research: A bibliometric analysis

Nese Kutlu-Abu

Amasya University, Turkey

Rumiye Arslan

Amasya University, Turkey

OPEN ACCESS

ABSTRACT

In the digital internet age, media literacy (ML) continues to be updated to accommodate change and keep up with the times. Discovering the most recent developments and trends in this field is essential to provide new research perspectives. In this study, 776 ML studies spanning 21 years (2000-2021) were analyzed using the VOS viewer, a program for bibliometric analysis. In tandem with the high number of citations, the research indicates that the interest of researchers in this topic is growing. In the past six years, media and information literacy, citizenship, anti-colonial, and communication and education have been the most frequently cited keywords in media literacy studies. The most frequently cited authors in the study are the focal point of the discussion. The new subtopics broaden the study topic's scope and foundation. Penn State University Harrisburg, University of California, Los Angeles, Salzburg Global Seminar, and Emerson College are the most frequently cited institutions. On this basis, the study discusses the future direction of media literacy research and makes corresponding recommendations.

Keywords: *media literacy, education research, bibliometric analysis.*

INTRODUCTION

Since Gutenberg's (1440) invention of the printing press that ushered in the era of mass media communication, the concept of "literacy" has evolved considerably. Literacy today involves more than just the ability to read and write to comprehend and communicate information (Aufderheide, 1993; Kress, 2003; Daley, 2003; Pereira & Moura, 2019). Diverse modes of meaning transmission necessitated the expansion of literacy as a result of the development of media technology (Hobbs, 1997; Kress, 2003). Beginning with the printing press and extending to radio, television, film, recorded sounds, the Internet, and digital tools, it has altered the notion of texts (Hobbs, 2010). In the last few decades, the concept of media has also evolved. It has shifted from the media where information flows to the media where processes accumulate, represent, disseminate, and manage knowledge among interacting people (Livingstone, et al., 2013; Schmid, 1997). As McLuhan (1967; 1994) predicted, it would be impossible in the future to comprehend content without first understanding the medium through which it was conveyed and its influence on human behavior and thought. Every tool has a distinct meaning and impact on individuals, necessitating the development of distinct competencies, skills, and abilities (Kress, 2003). Since media plays a significant role in all facets of contemporary individuals' and society's lives (Pereira & Moura, 2019), it is widely discussed in a variety of academic fields (Potter, 2010). This manifests itself in the diversity of definitions of media literacy (Potter, 2010). Accessing, analyzing, evaluating (Hobbs, 2001; Aufderheide, 1993), judging (Silverblatt & Eliceiri, 1997), critiquing (Considine et al., 2009; Kellner & Share, 2005), grouping, induction, deduction, synthesis, abstracting (Potter, 2013), producing (Hobbs & Jensen, 2009) and interacting (Barton & Hamilton, 2012). As demonstrated previously, media literacy is multifaceted (Potter, 1998) and multilayered, and it cannot be said to be fully attained because media literacy development must coexist with media development. Media literacy in this study refers to "many skills including the ability to read, evaluate, analyze, imagine possibilities, deconstruct messages, recognize patterns, challenge meanings, judge credibility, decipher sender intent, counter-argue, dig for truth, avoid influence, and produce messages" (Potter, 2022, p. 41). Digital and analog media are not only information sources and disseminators but also sources and distributors of disinformation. Current trends in media education indicate that in the information age, media literacy must be combined with information literacy.

Media literacy is a necessary skill that plays an important role in both society and education (Erstad & Amdam, 2013). Due to the variety of approaches that have been developed over the decades and that deal with media literacy, there are numerous international and interdisciplinary implementations in educational practice. In addition to education, media literacy is intertwined with a number of disciplines, including communication, sociology, psychology, politics, and history (Yildiz, 2019).

Two distinct discourse streams address appropriate skills, abilities, and competencies associated with media behavior. German-speaking media education research considers all media-related activities in the context of communicative competencies (Baacke, 1996; Tulodziecki & Grafe, 2012; Zylka et al., 2011), whereas English-speaking media education research classifies it under the discourse of literacy, which refers to the ability to read and write in the shared language of a culture (Park, 2017). The media-related nature of communication is central to the concept of media literacy, according to Ganguin, Gemkow, and Haubold (2020), whereas the German-speaking discourse favors a subjective and idealistic understanding of competence.

From a global perspective, media literacy approaches vary by country and level of development, ideology, politics, and technological innovations. However, international academic discourses have a positive influence on the discussion and development of media literacy at the national level. The perspectives and stances of various researchers, as well as their approaches to media literacy, are primarily influenced by their respective paradigms and media literacy understandings (Erstad & Amdam, 2013). According to Erstad and Amdam (2013), there are more than two opposing viewpoints within the field of media research. In addition to media protectionist and literacy-based approaches, there are also approaches that view social inclusion, empowerment, civic participation, and creative communities as the primary objectives of media literacy education (Lunt & Livingstone, 2012).

Global crises, which have affected people significantly in recent years, have shown how digitally processed information, data, and technological convergence can determine the human future. In this context, the restructuring and the changes in the production and distribution of information have brought about various challenges that need to be overcome

(Jandrić and Hayes, 2021). One of the challenges of digital development is the gathering of personal data by various institutions and virtual companies that are used to observe people, which is known as surveillance capitalism (Zuboff, 2019). Several studies approaching these challenges and the production and distribution of knowledge from post-digital and bio-digital perspectives have been discussed by Peters, Jandrić, and Hayes (2022). They point out that the convergence of technology and biology will have extensive consequences on a social, political, economic, scientific, and philosophical level. These developments will reveal new trends in the future in the context of media and digital literacy. On the other hand, according to Jandrić (2019), critical media literacy plays a crucial role in understanding, developing, and conceptualization of the convergence of different disciplines with digital technology and the new forms of intelligence with which we must live in the future. New literacies such as data literacy, the scope of which is beginning to become clear, may emerge, and it will also change the institutional structure of education such as 'ecopedagogies', learning, and life (Jandrić and Knox, 2021). At the same time, the interdisciplinarity and transdisciplinary enabled by digital convergence will transform and deepen scholarly exploration - or exploration via artificial intelligence - of new issues in literacy and international academic (or artificial) collaboration.

Literature review

Library and information science measurement methods such as scientometrics, bibliometrics, webometrics, informetrics, and altmetrics (Chellappandi & Vijayakumar, 2018) are currently attracting the interest of librarians and researchers from a variety of scholarly fields (Chellappandi & Vijayakumar, 2018). This interest is also fueled by the fact that researchers are increasingly required to demonstrate the impact of their work beyond the institution's walls (Esh & Ghosh, 2021). Scholars anticipate a quantitative and qualitative overview of the status and trend of research, including relationships between authors, concepts, and citations, as well as a multitude of other data. Methods such as bibliometric and scientometric analysis are of particular importance to this paper, as they were used to document research on media literacy. The development of media technology, the expansion of media forms and media content, and the increasing media consumption and new individual production of media content in all spheres of life have led to an increase in media literacy research. Both bibliometric and sociometric analyses were conducted to provide an overview of the emerging research on media literacy. The following media literacy studies were conducted as examples.

Based on Scopus reports, Asadzandi et al. (2013) conducted a scientometric analysis of media literacy literature published through 2011. In their study, they analyzed the publication date, the type of document, the language of the documents, the source of the publications, the subject matter, the authors and their affiliations, and the countries that contributed to the production of the articles. As English is the predominant language of publication for media literacy research, they discovered that the rate of media literacy research publications increased steadily from 1996 to 2011. According to Asadzandi et al. (2013), Comunicar, American Behavioral Scientist, and Simile have published the greatest number of articles on media literacy. Wang, Zhong, and Chen (2019) analyzed bibliographic information on media literacy education for a network and cluster analysis of 2000-2019 research. Its objective was to identify the evolution of subject knowledge and its research hotspots and trends. Zhang, Zhang, and Wang (2020) conducted a review of media literacy research conducted over the past three decades, focusing on media literacy for educational purposes and the integration of media literacy and curriculum. They noted that there was scant systematic research on this subject at the time. On the basis of European and non-European nations, they conducted a narrative analysis of the relevant studies on the incorporation of media literacy education into the school curriculum. One of the differences they observed was whether media literacy education was implemented across disciplines or offered as a subject-specific course. In addition, they discovered that implementing media literacy education as an isolated subject was less effective than implementing it as an integral approach. However, educators face a challenge when attempting to incorporate media literacy programs into the curriculum. According to them, it was important not only to incorporate media literacy education into curricula but also to train teachers for this purpose.

A recent study by Bapte (2021) based on a scientometric analysis of a total of 1,038 Web of Science (WoS) documents on the global research findings in the field of media literacy from 1989 to 2020. This study examined media literacy in its broadest sense. In this study, elements including the most prolific authors, collaborations, the most frequently used keywords, the

leading countries in terms of citations received, and the most productive journal were analyzed. Kumar et al. conducted a recent study utilizing bibliometric analysis to investigate media literacy (2021). In this study, studies from the SpringerLink database published in the last ten years were selected. They calculated and presented the Annual Growth Rate, Cumulative Growth Rate, Compound Annual Growth Rate, Relative Growth Rate, and Doubling Time of the literature, followed by indicators such as the degree of collaboration, the collaboration coefficient, and the collaborative index.

Education in media literacy is crucial for 21st-century education reform, professional education, and the development of global literacy. Though media literacy is a well-known concept, it appears there is need for further systematic research highlighting its evaluation and trends. Therefore, systematic review could become a useful and up-to-date resource for media education researchers as it photographs and interprets media literacy research published over the past two decades. This study is significant because it allows media educators and researchers to draw attention to media education and conduct a comprehensive evaluation. In this study, the following are the research questions (RQ) for media literacy (ML) studies in the Web of Science (WoS) database between 2000 and 2021:

RQ 1. What is the language and publication year distribution?

RQ 2. How are the top keywords, countries, and organizations distributed?

RQ 3. Who are the most-cited authors and journals?

METHOD

This study uses the Web of Science (WoS) database to conduct a bibliometric analysis of media literacy (ML) articles. The WoS core collection includes over 21,000 magazines in various fields, over 76 million records, over 111,000 books, and over 8 million conference papers (Clarivate Analytics, 2020). Bibliometric methods are used for a variety of scientific purposes and applications in various fields (Mongeon & Paul-Hus, 2016). WoS literature-based bibliometric analysis is gaining popularity as a means of visualizing the structure of scientific fields (Zhang et al., 2016). Indicators based on bibliometric metrics have gained popularity in recent years (Confraria & Godinho, 2015). Trends in publications and citations are a strong indicator of a field's or discipline's development patterns (Hernandez-Torrano & Ibrayeva, 2020). The

bibliometric method does not replace other types of research, even in cases where the same research goals are shared (understanding the trends of a specific area of knowledge). The bibliometric method is spreading given the availability of digital tools allowing this type of approach (Zawacki-Richter et al., 2020). Using this method, international research trends from the past to the present are determined comprehensively. This study, which is limited to the analysis of WoS data only, allows the findings in this database to be compared with other databases.

Identification of sources

The term "media literacy" was examined using the advanced search (AS) function of the WoS database. There was a total of 3,216 studies viewed that related to this key concept. The selection of publications for the research was based on the following search methodology.

> AS: "media literacy"(topic)
> Refined by: WoS categories: [Ok] Education and Educational Research.
> Document type: [Ok] Articles.
> Excluded by: [Not] Publications years: 2022 or 1990, 1991, 1992... 1999. [Not] Book chapters, proceeding papers, editorials, and others.
> Indexes: [Ok] Social Sciences Citation Index (SSCI), Emerging Sources Citation Index (ESCI) Book Citation Index-Social Sciences & Humanities (BKCI-SSH), Science Citation Index Expanded (SCI-EXPANDED), Book Citation Index – Science (BKCI-S), Arts & Humanities Citation Index (A&HCI), Conference Proceedings Citation Index – Social Science & Humanities (CPCI-SSH).

In selecting publications, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines were followed (Moher et al., 2009). Publications were chosen based on identification, screening, and eligibility, as well as other criteria (Hallinger & Kulophas, 2019). Figure 1 depicts the steps for identifying and scanning resources using the PRISMA flowchart.

From 3,216 ML publications, 776 ML education articles published between 2000 and 2021 were considered for this study (March 2022). Since some studies have not yet been published in 2022, these studies are excluded from the scope. All studies in the geographical context published in the WoS database are included.
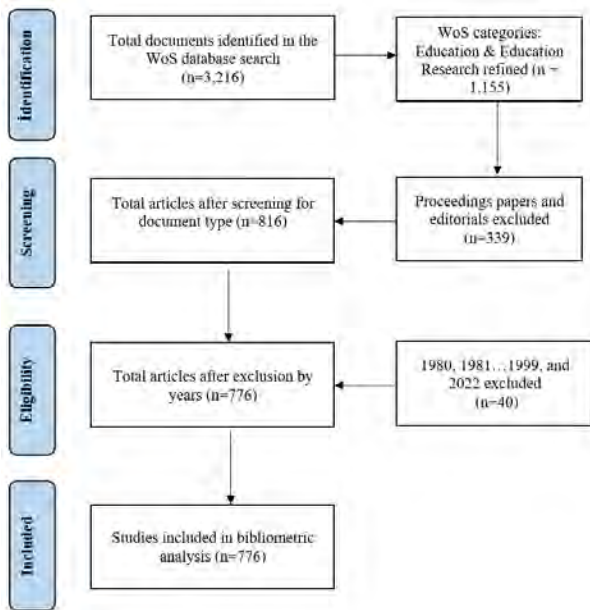
Figure 1. *Using the PRISMA flowchart to identify and examine resources*

Analysis of data

The data for 776 ML articles was downloaded as a plain text file containing full records and citations. The VOSviewer Software Program was used to conduct citation, co-citation, and bibliographic coupling analyses on research data (Van Eck & Waltman, 2010). Different analyses of publication networks, such as the most cited countries, institutions, and authors, reveal a deeper comprehension of the research topic (Chang, et al., 2015). While co-citation analysis determines the frequency with which two documents are cited (Benckendorff & Zehrer, 2013), bibliographic coupling groups changes in literature usage (Weinberg, 1974). Figure 2 depicts bibliographic coupling and co-citation analysis in science mapping.
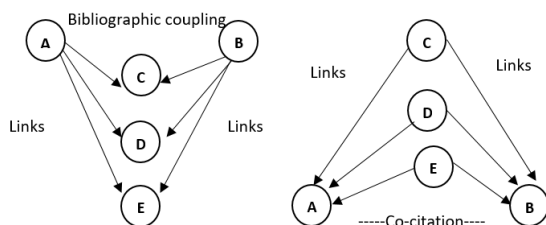

Figure 2. *Bibliographic coupling and co-citation analysis in science mapping (Surwase et al., 2011)*

Citation analysis is a technique for evaluating the academic output of a nation, author, or institution (Moed, 2005). On the other hand, co-citation analysis

associates authors and studies based on their frequency of use (Zupic & Ater, 2015). Bibliographic coupling analysis refers to instances in which two different sources cite the same publication. Additionally, bibliometric matching utilizes the common citation numbers of two distinct publications as a measure of similarity (Egghe & Rousseau, 1990).

The results of the analysis of citations, co-citations, and bibliographic coupling are displayed using scientific network maps, graphs, and tables.

FINDINGS

Language and publication year

Citations for ML articles in the Web of Science Core Collection during 2000-2021 have increased in recent years. Although there was a small decrease in the number of publications in 2017 (f=63, Citation=617), 2018 (f=65, Citation=694), and 2019 (f=62, Citation=885) compared to 2016 (f=75, Citation=476), the number of publications and citations is the highest in 2020 (f=81, Citation=1262), and 2021 (f=78, Citation=1364). The number of publications and citations by year is shown in Figure 3. The 776 studies included in the study were published in English (f =582), Spanish (f =153), Russian (f=9), Portuguese (f = 8), German (f = 7), Turkish (f = 6), Slovenian (f=4), Bulgarian (f=2), Ukrainian (f=2), Chinese (f=1), Estonian (f=1), French (f=1), and Norwegian (f=1).
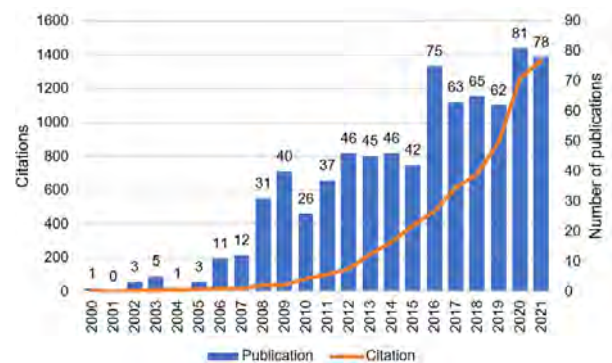

Figure 3. *Number of publications and citations by year*

The most cited keywords

In the VOSviewer software tool, the minimum number of occurrences of a keyword option is set to one, and 140 keywords are selected. Figure 4 depicts the most cited keyword networks for ML articles. Media literacy

(f=29), media education (f=61), critical pedagogy (f=23), education (f=3), attitudes (f=3), digital media literacy (f=2), prospective teachers (f=2), and students (f=2) are thus the most frequently used keywords. Table 1 shows the occurrences and total link strength of the most cited keywords.
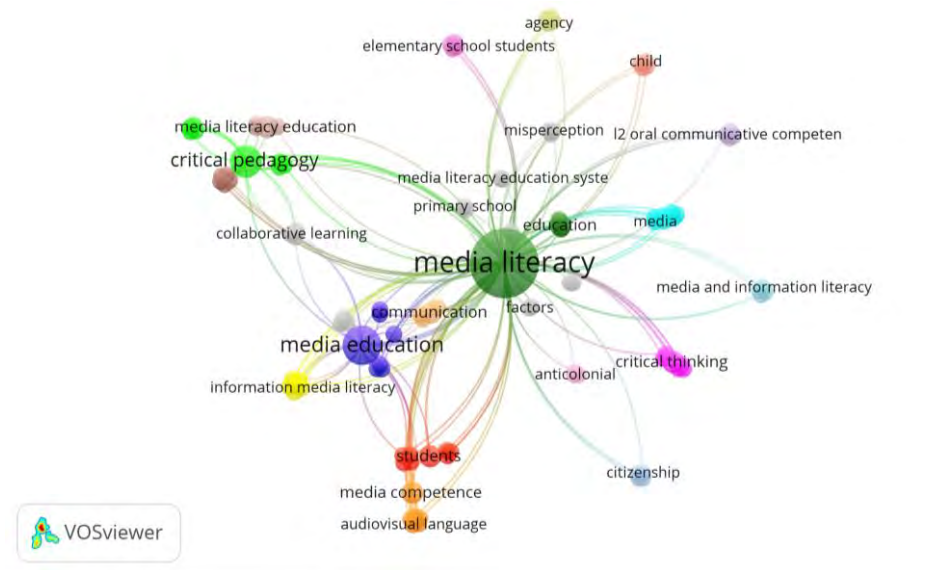

Figure 4. *The most cited keywords in ML publications*

Table 1. *The most-cited-keyword occurrences and total link strength*

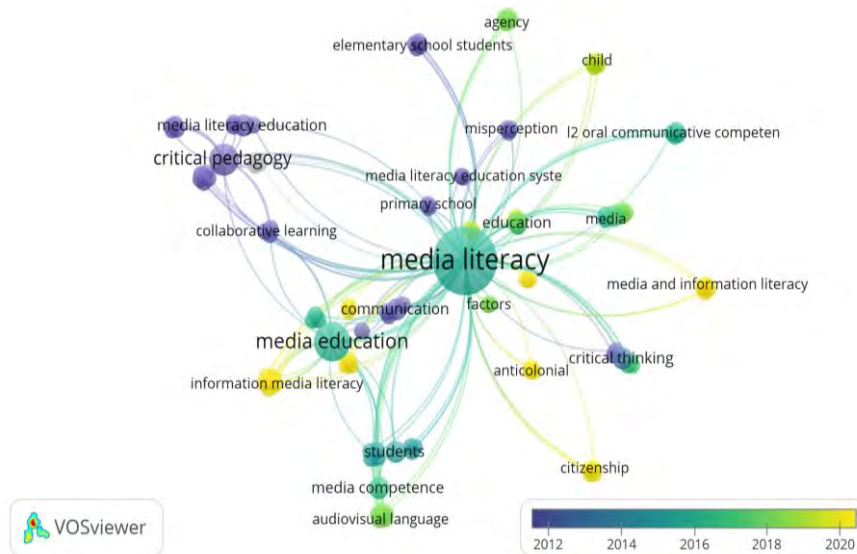| Keywords	Occurrences	Total link strength	Keywords	Occurrences	Total link strength
media literacy	29	136	prospective teachers	2	7
media education	10	61	digital media literacy	2	7
critical pedagogy	5	23	primary school	2	8
education	3	14	media	2	9
attitudes	3	22	critical media literacy	2	10
media literacy skills	2	6	student	2	11

Figure 5. *The most cited keywords in ML publications by year*

Figure 5 depicts the most frequently used keywords in ML publications by year. Recent media literacy topics include "media and information literacy (media competence, media skills, teacher training), information media literacy (student competence, professional training), citizenship (political action, Colombia, vulnerable population), anti-colonial (critical race theory, settler colonialism), communication and education (Latin America), and digital internet era."

The most-cited countries

The bibliometric networks of the publications included in the study were illustrated on a map to identify the countries with the most citations. In VOSviewer software, the minimum number of source documents and a minimum number of citations for a country were adjusted to 1 and 1 respectively (total of 23 countries). Figure 6 depicts the number of publications and citations for the ten most cited nations.
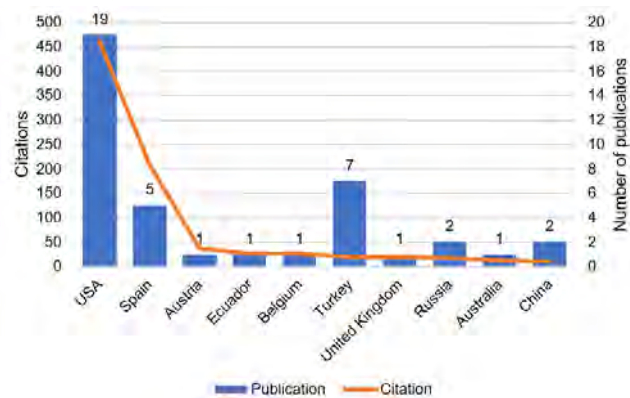

Figure 6. *Distribution of the top ten countries in terms of citations*
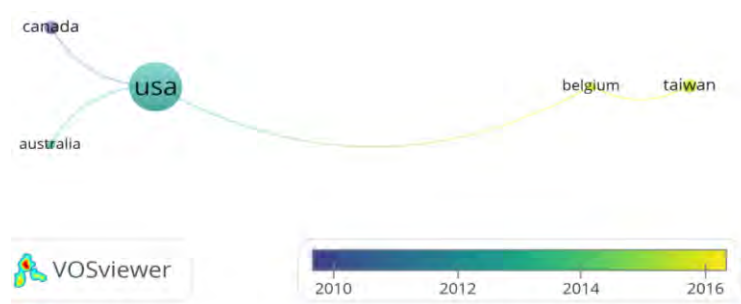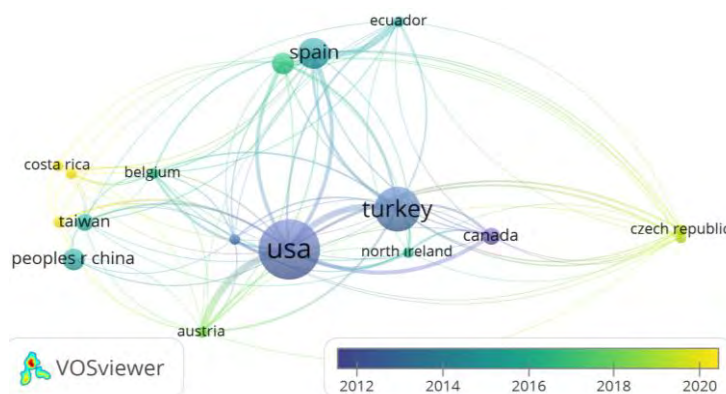

Figure 7. *The most-cited countries*

Figure 8. *The bibliographic coupling countries*

Figure 7 indicates that the United States is the most cited country (f=19, Citation=462), followed by Spain (f=5, Citation=210) and Austria (f=1, Citation=38). Figure 6 illustrates the bibliographic networks of the most cited countries. Figure 8 depicts the bibliographic coupling of countries and distribution by year. As a result, it is evident that the Czech Republic, Costa Rica, and Taiwan will be bibliographic coupling nations in 2019-2020.

The most-cited organizations

For citation analysis, the minimum number of documents and citations for an organization were both set to 1. Figures 9 and 10 illustrate the most-cited organizations. Consequently, Penn State University, Harrisburg (Citations=64, Documents=1), University Calif., Los Angeles (Citations=46, Document=2), Salzburg Global Seminar (Citations=38, Document=1), Emerson Coll (Citations=38, Document=1), University Tech Particular Loja (Citations=26, Document=1), and Univ Jaen (Citations=27, Document=1) are the most-cited institutions. VRJE University Brussels has recently received the most citations (Citations=27, Document=1) The bibliographic coupling organizations are illustrated in Figure 10.
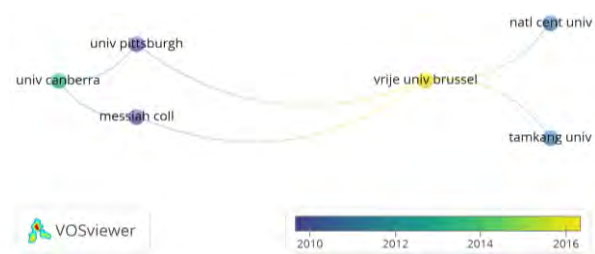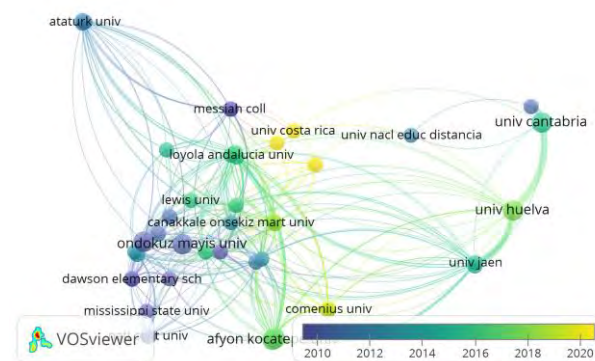

Figure 9. *The most-cited organizations*

Figure 10. *The bibliographic coupling organizations*

The most-cited journals

The VOSviewer co-citation minimum number of citations of source options is set to 5 for the most cited journals; consequently, bibliometric mapping has been created for 1,182 journals. Figure 11 depicts the most-cited publications. Accordingly, Computer & Education (Citations = 27), Journal of Communication (Citations = 22), J Adolescent Adut Lit (Citations = 20), Comunicar (Citation = 26), and Media Literacy Reader (Citation = 10) are the most cited journals.
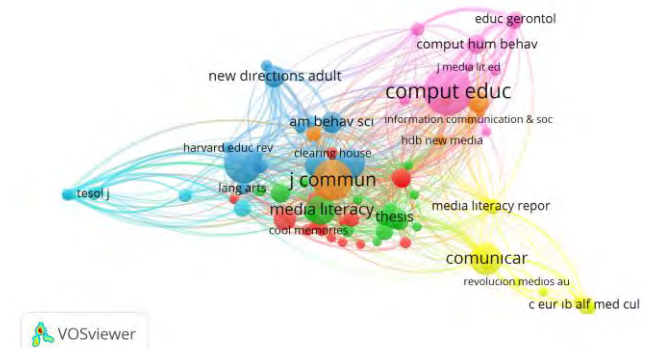
Figure 11. *Most cited journals (co-citation analysis)*

The most-cited authors

Figure 12 depicts the bibliometric network of the authors most frequently cited. According to the results of the citation analysis, the authors most frequently cited are Tisdell (Documents=1, Citations=63), Share (Documents=2, Citations=46), Mihailidis (Documents=1, Citations=37), Marin-Gutierrez (Documents=1, Citations=26), Diaz-Parejo (Documents=1, Citations=26), and Kellner (Document=1, Citations=24). Table 2 provides a listing of the works of the most cited authors.

Figure 12. *The most-cited authors (citation analysis)*

Figure 13. *The bibliographic coupling authors*

Table 2. *The data regarding the most-cited authors and articles*

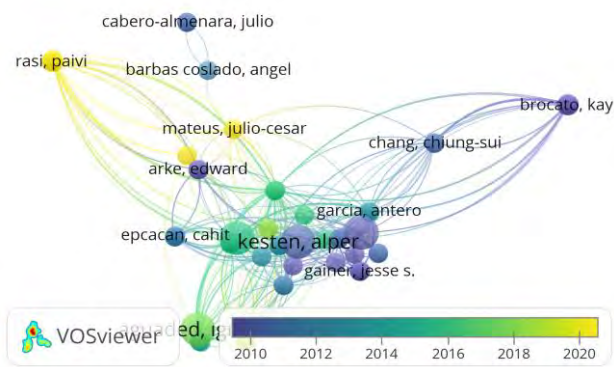| Paper	Citation
Tisdell, E. J. (2008). Critical media literacy and transformative learning: Drawing on pop culture and entertainment media in teaching for diversity in adult higher education. *Journal of transformative education*, *6*(1), 48-67.	63
Kellner, D., & Share, J. (2007). Critical media literacy, democracy, and the reconstruction of education. Media literacy: A reader, 3-23.	46
Mihailidis, P. (2011). New civic voices & the emerging media literacy landscape. *Journal of Media Literacy Education*, *3*(1), 3.	37
Marín-Gutiérrez, I., Díaz-Pareja, E., & Aguaded, I. (2013). La competencia mediática en niños y jóvenes: La visión de España y Ecuador. *Chasqui. Revista latinoamericana de comunicación*, (124), 41-47.	26
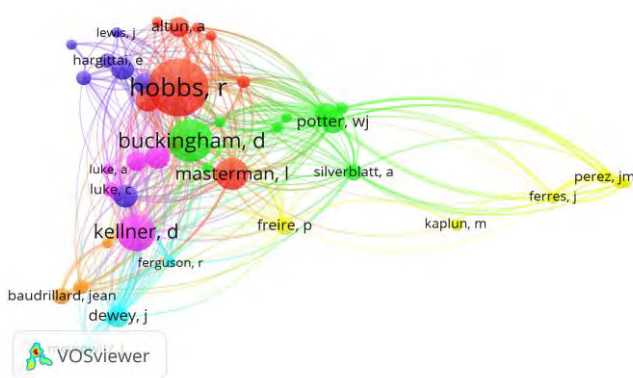
Figure 14. *The most-cited authors (co-citation analysis)*

The authors' illustrated bibliographic coupling in Figure 13. Rasi and Mateus are the most cited authors in bibliographic coupling analysis recently.

On the most-cited authors, co-citation analysis was conducted. Figure 14 illustrates bibliographic networks of the most cited authors. As a result, Hobbs (Citations=32), Kellner (Citations=24), Buckingham (Citations=22), Masterman (Citations=16), and Thoman (Citations=11) are the most-cited authors.

DISCUSSION AND CONCLUSION

Bibliometric analysis was used in this study to examine media literacy publications in the field of education found in the WoS database between 2000 and 2021. While there were only four studies on ML in 2000, the number of publications increased to 67 in 2019. Despite a slight decline in the number of publications in 2019, 2020, and 2021, the number of citations has increased steadily since 2012. Especially over the past three years, citation values have reached their peak. Due to the high rate of citations, it has been determined that this topic is regarded as significant in the field of education and that global interest is high. The acceptance of media literacy as an essential component of 21st-century skills and the emphasis on literacy in curricula and policies may have led researchers to investigate this topic (Grizzle, 2011; Grizzle & Calvo, 2014). González-Zamar et al. (2020) discovered in their bibliometric analysis that the number of studies on digital education increased significantly from 2017 to 2019. According to a bibliometric study by Chen et al. (2021), the number of information literacy studies increased between 2016 and 2020.

Media literacy, media education, critical pedagogy, media competence, critical thinking, digital media literacy, and prospective teachers are the most cited terms from 2000 to 2021. Recent popular search terms include "information and media literacy, media skills, teacher training, student competence, professional training, and citizenship." The findings indicate that the concept of media literacy has been used with different concepts such as media competence, media and information literacy, and digital media literacy from the 2000s to the present. The fact that media literacy and these concepts are most frequently mentioned together demonstrates that the concept of media literacy has morphed into multiple concepts or literacy concepts. One of the reasons for this situation is that some types of literacy are most required with the increasing use of technologies that support media exchanges. Wuyckens et al. (2022) discovered in a systematic meta-review that the definitions of media literacy, information literacy, and digital literacy were inadequate. It is recommended

that the components, categories, dimensions, and internal structure of these three concepts, as well as their interrelationships, be revealed and operationalized using a multidisciplinary approach. When other recently mentioned concepts are examined, the concept of citizenship comes to the forefront. Some visions, such as providing citizens with information and media literacy (Sjostrom et al., 2017), may have broadened the scope of this subject. In contrast, anti-colonial (critical race theory, settler colonialism) concepts are among the most frequently used search terms in recent years. The rise in racist incidents in the mainstream media, the ease with which young people can access this content, and the negative impact of these occurrences on society may have increased interest in these important topics within the concept of media literacy (Garcia et al., 2021, p. 338-340). Critical media literacy emphasizes the relationships between media, identity, and power. Power and identity issues are concealed behind all circulating information, according to the critical media literacy approach. In recent years, the National Association for Media Literacy Education (NAMLE) has emphasized that media-related issues such as race, equality, and social justice require a critical approach, and it has developed projects in this vein[1]. Tyner stated as early as 1992 that the concept of media literacy education in the United States has spawned numerous approaches due to the variety of definitions and application areas, and that media education could not be practiced adequately. Today, researchers criticize the inadequacy of media literacy education against social injustice, racism, prejudice, and colonialism (Mihailidis, Ramasubramanian, Tully, Bhusari, Johnson, and Riewestahl, 2021). Therefore, they incorporate critical theory, race literacy, and anticolonial media literacy concepts into media literacy. Critical race media literacy and anticolonial media literacy are two new concepts in addition to critical media literacy (Yosso, 2020; Cordes & Sabzalian, 2020).

According to the results, the countries most frequently mentioned are the United States, Spain, and Austria. In 2010-2012, the United States, Canada, and Australia were the most cited countries; in 2014-2016, it was Belgium and Taiwan. In 2019-the 2020s, the Czech Republic, Costa Rica, and Taiwan are observed to be collaborating. These results indicate that media literacy is increasing in a variety of nations, and researchers are interested in this topic. This may be due to the fact that media has no borders in the digital age, its widespread

use, and the significance of an inquiry-based critical perspective in educational practices. Penn State University, Harrisburg (United States), University Calif., Los Angeles (United States), Salzburg Global Seminar (Australia), Emerson Coll (United States), University Tech Particular Loja (Ecuador), and Univ Jaen are the most-cited institutions (Spain). In recent times, the institution most frequently cited is VRJE University Brussels (Belgium). The issue of media literacy in education is also studied by prominent organizations in the United States, Belgium, Australia, Spain, and Ecuador, as is evident.

Tisdell, Share, Mihailidis, Marin-Gutierrez, and Diaz-Paraejo are the most-cited authors, according to the results. The authors' most-cited works pertain to one or two studies. (Tisdell, 2008; Share, 2009; Mihailidis, 2011; Marn-Gutiérrez & Daz-Pareja, 2013) When these authors' studies are examined, the issues of creating diversity in universities for adults through critical media literacy, acquiring critical reading and media competence in primary schools, and participatory citizenship are discussed. In the co-citation analysis, the most frequently cited authors are Hobbs, Buckingham, Kellner, Masterman, and Thoman. These authors' works examine this issue's fundamental sources, theories, the development of media literacy among young people, policies, and political and personal conflicts (Masterman, 1993; Hobbs et al., 2013; Buckingham, 2006; Kellner & Share, 2005; Thoman & Jolls, 2004). Rasi and Mateus are the most cited authors in bibliographic coupling analysis. The work of these authors has centered on the development of critical media literacy in young children, promoting and reinforcing participatory citizenship in media policies (Rasi, Vuojarvi, & Rivinen, 2021; Mateus, 2022). The findings indicate that this field is developing in a participatory manner. The most frequently cited authors are the focal point of the discussion. They laid the groundwork for the development and coverage of new subtopics and the diversification of the subject's research interests. This is a positive indicator of the caliber of media literacy studies.

Consequently, Computer Education (Elsevier), Journal of Communication (Oxford Academic), Journal of Adolescent & Adult Literacy (International Literacy Association, Wiley), and Comunicar are the most cited publications (Media Education Research Journal). These media literacy-focused journals published on WoS have high impact factors and are of high quality

---

[1] https://namle.net/race-equity-and-social-justice-resources

(Q1) Orbay, Karamustafaolu, and Miranda (2021) discovered that education articles published in the first quarter of a journal had higher average citations and lower citation rates than articles published in other quarters.

This study provides information on key areas that could be the focus of future work. However, this study has some limitations. First, significant studies may have been overlooked in the WoS database. Second, the analysis utilized only bibliometric analysis. On the basis of these restrictions, the data in the Eric and Scopus databases can be utilized in future research or the most cited ML articles can be contextually analyzed. Finally, given the time span considered while selecting the research articles, future work could focus on more recent trends (last ten and last five years) where more specific topics and relationships between authors could be uncovered.

REFERENCES

Asadzandi, S., Shahbodaghi, A., Sajjadi, S., Kamkarhaghighi, M., & Hemmat, M. (2013). A scientometric study of media literacy literature based on Scopus record through 2011. *Archives of Advances in Biosciences*, *4*(1).

Aufderheide, P. (1993). *Media Literacy. A Report of the National Leadership Conference on Media Literacy*. Aspen Institute, Communications and Society Program, 1755. Massachusetts Avenue: Washington, DC.

Baacke, D. (1996). Medienkompetenz–Begrifflichkeit und sozialer Wandel. *Medienkompetenz als Schlüsselbegriff, 114*.

Bapte, V. D. (2021). Media literacy: A scientometric study based on a web of science during 1989-2020. *Journal of Library & Information Technology, 41*(4).

Barton, D., & Hamilton, M. (2012). *Local literacies: Reading and writing in one community*. Routledge.

Benckendorff, P., & A. Zehrer. (2013). A Network Analysis of Tourism Research. *Annals of Tourism Research, 43,* 121-149. https://doi.org/10.1016/j.annals.2013.04.005

Bergsma, L., Considine, D., Culver, S. H., Hobbs, R., Jensen, A., Rogow, F., & Thoman, E. (2007). Core principles of media literacy education. Denver, CO: Alliance for a Media Literate America.

Buckingham, D. (2006). Defining digital literacy-What do young people need to know about digital media? *Nordic Journal of Digital Literacy*, *1*(4), 263-277. https://doi.org/10.18261/ISSN1891-943X-2015-Jubileumsnummer-0

Confraria, H., & Godinho, M. M. (2015). The impact of African science: A bibliometric analysis. *Scientometrics, 102*(2), 1241-1268. http://doi.org/10.1007/s11192-014-1463-8

Considine, D., Horton, J., & Moorman, G. (2009). Teaching and reaching the millennial generation through media literacy. *Journal of Adolescent & Adult Literacy, 52*(6), 471-481. https://doi.org/10.1598/JAAL.52.6.2

Chellappandi, P., & Vijayakumar, C. S. (2018). Bibliometrics, scientometrics, webometrics/cyber metrics, informetrics, and altmetrics-An emerging field in library and information science research. *Shanlax International Journal of Education*, *7*(1), 5-8. https://doi.org/10.5281/zenodo.2529398

Chang, Y. W., Huang, M. H. & Lin, C. W. (2015). Evolution of research subjects in library and information science based on keyword, bibliographical coupling, and co-citation analysis. *Scientometrics, 105*(3), 2071-2087. https://doi.org/10.1007/s11192-015-1762-8

Chen, C. C., Wang, N. C., Tu, Y. F., & Lin, H. J. (2021). Research trends from a decade (2011–2020) for information literacy in higher education: Content and bibliometric mapping analysis. *Proceedings of the Association for Information Science and Technology, 58*(1), 48-59. http://doi.org/10.1002/pra2.435

Clarivate Analytics (2020). Web of Science platform: Web of Science: Summary of coverage. June 24, http://clarivate.libguides.com/webofscienceplatform/coverage.

Cordes, A., & Sabzalian, L. (2020). The Urgent Need for Anticolonial Media Literacy. *International Journal of Multicultural Education*, *22*(2), 182-201.

Daley, E. (2003). Expanding the concept of literacy. *Educause Review*, *38*(2), 32-40.

Egghe, L. and Rousseau, R. (1990). Introduction to informetrics: Quantitative methods in library, documentation, and information science. Elsevier Science Publishers, 15, 2003-2018.

Erstad, O., & Amdam, S. (2013). From protection to public participation: A review of research literature on media literacy. *Javnost-The Public*, *20*(2), 83-98. https://doi.org/10.1080/13183222.2013.11009115

Esh, M., & Ghosh, S. (2021). Tracing the global trend on the study of digital literacy: a scientometric analysis. *International Journal of Digital Literacy and Digital Competence, 12*(3), 1-15.\ https://doi.org/10.4018/IJDLDC.291971

Ganguin, S., Gemkow, J., & Haubold, R. (2020). Medienkritik zwischen Medienkompetenz und Media Literacy: Medien-und subjektspezifische einflüsse auf die medienkritische decodierungsfähigkeit. *MedienPädagogik: Zeitschrift für Theorie und Praxis der Medienbildung, 37*, 51-66.\ https://doi.org/10.21240/mpaed/37/2020.07.03.x

Garcia, A. G., McGrew, S., Mirra, N., Tynes, B., & Kahne, J. (2021). Rethinking digital citizenship: learning about media, literacy, and race in turbulent times. Carol D. Lee, Gregory White, and Dian Dong, Editors, *Educating for Civic Reasoning & Discourse*. National Academy of Education Washington, DC.

González-Zamar, M. D., Abad-Segura, E., Luque de la Rosa, A., & López-Meneses, E. (2020). Digital education and artistic-visual learning in flexible university environments: Research analysis. *Education Sciences, 10*(11), 294. http://doi.org/10.3390/educsci10110294

Grizzle, A. (Ed.). (2011). *Media and information literacy curriculum for teachers*. United Nations Educational, Scientific and Cultural Organization.

Grizzle, A., Moore, P., Dezuanni, M., Asthana, S., Wilson, C., Banda, F., & Onumah, C. (2014). *Media and information literacy: policy and strategy guidelines*. UNESCO.

Hallinger, P. & Kulophas, D. (2019). The evolving knowledge base on leadership and teacher professional learning: A bibliometric analysis of the literature, 1960-2018. *Professional Development in Education*, 1-20. https://doi.org/10.1080/19415257.2019.1623287

Hernandez-Torrano, D., & Ibrayeva, L. (2020). Creativity and education: A bibliometric mapping of the research literature (1975-2019). *Thinking Skills and Creativity, 35*, 100625. https://doi.org/10.1016/j.tsc.2019.100625

Hobbs, R. (1997). Expanding the concept of literacy, media literacy in the information age: Current perspectives. *Information and Behaviour, 6,* 163-183.

Hobbs, R. (1998). The seven great debates in the media literacy movement. *Journal of Communication, 48*(1), 16-32.

Hobbs, R. (2001). Improving reading comprehension by using media literacy activities. *Voices from the Middle, 8*(4), 44.

Hobbs, R., & Jensen, A. (2009). The past, present, and future of media literacy education. *Journal of media literacy education, 1*(1), 1.

Hobbs, R. (2010). *Digital and Media Literacy: A Plan of Action. A White Paper on the Digital and Media Literacy Recommendations of the Knight Commission on the Information Needs of Communities in a Democracy*. Aspen Institute. 1 Dupont Circle NW Suite 700, Washington, DC 20036.

Hobbs, R., Donnelly, K., Friesem, J., & Moen, M. (2013). Learning to engage: How positive attitudes about the news, media literacy, and video production contribute to adolescent civic engagement. *Educational Media International, 50*(4), 231-246. https://doi.org/10.1080/09523987.2013.862364

Jandrić, P. (2019). The postdigital challenge of critical media literacy. The International Journal of Critical Media Literacy, 1(1), 26-37.

Jandrić, P., & Hayes, S. (2021). Postdigital education in a biotech future. Policy Futures in Education, 14782103211049915.

https://doi.org/10.1177/14782103211049

Jandrić, P., & Knox, J. (2021). The postdigital turn: Philosophy, education, research. Policy Futures in Education, 14782103211062713. https://doi.org/10.1177/14782103211062713

Kellner, D., & Share, J. (2007). Critical media literacy, democracy, and the reconstruction of education. Media literacy: A reader, 3-23.

Kellner, D., & Share, J. (2005). Toward critical media literacy: Core concepts, debates, organizations, and policy. *Discourse: Studies in the Cultural Politics of Education, 26*(3), 369-386. https://doi.org/10.1080/01596300500200169

Kellner, D., & Share, J. (2005). Media Literacy in the US. *MedienPädagogik: Zeitschrift für Theorie und Praxis der Medienbildung, 11*, 1-21. https://doi.org/10.21240/MPAED/11/2005.09.15.X

Kumar, A., Pachuau L., Deka M., Buragohain D. (2021). Media literacy and its significance for the past one decade: a study of literature published by Springer link database through the bibliometric lens. *Library Philosophy and Practice*, 1-24.

Kress, G. (2003). *Literacy in the new media age*. Routledge.

Livingstone, S., Wijnen, C. W., Papaioannou, T., Costa, C., & del Mar Grandío, M. (2013). 13 situating media literacy in the changing media environment. *Audience transformations: Shifting audience positions in late modernity*, 210.

Lunt, P & Livingstone, S. (2012). *Media Regulation: Governance and the Interests of Citizens and Consumers*. Sage: London.

Marín-Gutiérrez, I., Díaz-Pareja, E., & Aguaded, I. (2013). La competencia mediática en niños y jóvenes: La visión de España y Ecuador. Chasqui. *Revista latinoamericana de comunicación, 124,* 41-47.

Mateus, J. C. (2021). Media literacy for children: Empowering citizens for a mediatized world. *Global Studies of Childhood, 11*(4), 373-378. https://doi.org/10.1177/20436106211014903

Masterman, L. (1993). The media education revolution. *Canadian Journal of Educational Communication, 22*(1), 5-14. https://doi.org/ 10.21432/T2JS5S

Mihailidis, P. (2011). New civic voices & the emerging media literacy landscape. *Journal of Media Literacy Education, 3*(1), 4-5.

Mihailidis, P., Ramasubramanian, S., Tully, M., Bhusari, B., Johnson, P., & Riewestahl, E. (2021). *Equity and Impact in Media Literacy Practice: Mapping the Field in the United States*. National Association for Media Literacy Education.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analysis: the PRISMA statement. *Annals of Internal Medicine, 6*(7), 1-6. https://doi.org/10.1371/journal.pmed.1000097

Mongeon, P., & Paul-Hus, A. (2016). The journal coverage of Web of Science and Scopus: A comparative analysis. Scientometrics, 106(1), 213-228. https://doi.org/10.1007/s11192-015-1765-5

Moed, H.F. (2005). *Citation analysis in research evaluation,* Dordrecht: Springer Science and Business Media.

McLuhan, M. (1994). *Understanding media: The extensions of man*. MIT Press.

McLuhan, M., & Fiore, Q. (1967). The medium is the message. *New York*, *123*(1), 126-128.

Park, J. (2017). Media literacy, media competence, and media policy in the digital age. In *Proceedings of the 2017 Arts, Humanities, Social Sciences, and Education Conference*, 7, 3-6.

Pereira, S., & Moura, P. (2019). Assessing media literacy competencies: a study with Portuguese young people. *European Journal of Communication*, *34*(1), 20-37. https://doi.org/10.1177/0267323118784821

Peters, M. A., Jandrić, P., & Hayes, S. (2022). Biodigital philosophy, technological convergence, and postdigital knowledge ecologies. In Bioinformational Philosophy and Postdigital Knowledge Ecologies (pp. 3-22). Springer, Cham.

Potter, W. J. (2010) The state of media literacy. *Journal of Broadcasting & Electronic Media, 54*(4), 675-696. https://doi.org/10.1080/08838151.2011.521462

Potter, W. J. (2013). Review of literature on media literacy. *Sociology Compass*, *7*(6), 417-435. https://doi.org/10.1111/soc4.12041

Potter, W. J. (1998). *Media literacy*. London: Sage.

Potter, W. J. (2022). Analysis of definitions of media literacy. *Journal of Media Literacy Education, 14*(2), 27-43.

Orbay, M., Karamustafaoglu, O., & Miranda, R. (2021). Analysis of the journal impact factor and related bibliometric indicators in education and educational research category. *Education Information, 37,* 315-336. https://doi.org/10.3233/EFI-200442.

Rasi, P., Vuojärvi, H., & Rivinen, S. (2021). Promoting media literacy among older people: A systematic review. *Adult Education Quarterly, 71*(1), 37-54. https://doi.org/10.1177/0741713620923755

Surwase, G., Sagar, A., Kademani, B. S., & Bhanumurthy, K. (2011). Co-citation analysis: an overview.

Schmid, B. (1997). The Concept of Media. In Lee, R., et al. (Eds.) *Proceedings of the Fourth Research Symposium on Electronic Markets: Negotiation and Settlement in Electronic Markets*, Maastricht, Rotterdam: Erasmus University of Rotterdam, 78-89.

Silverblatt, A., Eliceiri, E. M., & Eliceiri, E. M. E. (1997). *Dictionary of media literacy*. Greenwood Publishing Group.

Share, J. (2009). Media literacy is elementary: Teaching youth to critically read and create media (Vol. 41). Peter Lang.

Sjöström, J., Frerichs, N., Zuin, V. G., & Eilks, I. (2017). Use of the concept of Bildung in the international science education literature, its potential, and implications for teaching and learning. *Studies in Science Education, 53*(2), 165-192. https://doi.org/10.1080/03057267.2017.1384649

Tisdell, E. J. (2008). Critical media literacy and transformative learning: Drawing on pop culture and

entertainment media in teaching for diversity in adult higher education. *Journal of Transformative Education, 6*(1), 48-67. https://doi.org/10.1177/1541344608318970

Tulodziecki, G., & Grafe, S. (2012). Approaches to learning with media and media literacy education–trends and current situation in Germany. *Journal of Media Literacy Education*, *4*(1), 5.

Thoman, E., & Jolls, T. (2004). Media literacy-A national priority for a changing world. *American Behavioral Scientist, 48*(1), 18-29. https://doi.org/10.1177/0002764204267246

Tyner, K. (1992). The tale of the elephant: Media education in the United States. In C. Bazalgette, E. Bevort, & J. Savino (Eds.), New directions: Media education worldwide (pp. 170-176). London: British Film Institute.

Van Eck, N. J., & Waltman, L. (2010). Software survey: Vosviewer, a computer program for bibliometric mapping*, Scientometrics, 84*(2), 523-538. https://doi.org/10.1007/s11192-009-0146-3

Wang, S., Zhong, Z., & Chen, L. (2019, December). The Past, Present, and Future of Media Literacy Education Research Theme: A Network and Cluster Analysis of Literature. In *2019 International Joint Conference on Information, Media and Engineering (IJCIME)* (pp. 78-82). IEEE.

Weinberg, B. H. (1974). Bibliographic coupling: A review. *Information Storage and Retrieval*, 10(5-6), 189-196. https://doi.org/10.1016/0020-0271(74)90058-8

Wuyckens, G., Landry, N., & Fastrez, P. (2022). Untangling media literacy, information literacy, and digital literacy: A systematic meta-review of core concepts in media education. *Journal of Media Literacy Education, 14*(1), 168-182. https://doi.org/10.23860/JMLE-202214-1-12

Yildiz, M. N. (2019). Educational Media, History. *The International Encyclopedia of Media Literacy*, 1-8. https://doi.org/10.1002/9781118978238.ieml0084

Yosso, T. J. (2020). Critical race media literacy for these urgent times. *International Journal of Multicultural Education*, *22*(2), 5-13.

Zawacki-Richter, O., Kerres, M., Bedenlier, S., Bond, M., & Buntins, K. (2020). Systematic reviews in educational research: Methodology, perspectives and application (p. 161). Springer Nature.

Zhang, J., Yu, Q., Zheng, F., Long, C., Lu, Z., & Duan, Z. (2016). Comparing keywords plus of WOS and author keywords: A case study of patient adherence research. *Journal of the Association for Information Science and Technology, 67*(4), 967-972. http://dx.doi.org/10.1002/asi.23437

Zhang, L., Zhang, H., & Wang, K. (2020). Media literacy education and curriculum integration: A literature review. *International Journal of Contemporary Education, 3*(1), 55-64.

Zylka, J., Müller, W., & Martins, S. W. (2011, April). Media literacy worldwide. Similarities and differences between theoretical and practical approaches. In *2011 IEEE Global Engineering Education Conference (EDUCON)* (pp. 726-73).

Zupic, I., and Čater. T. (2015). Bibliometric methods in management and organization. Organizational Research Methods, 18(3), 429-472.