SYSTEMATIC REVIEW OF DIGITAL LITERACY IN THE IMPLEMENTATION OF INDONESIAN LANGUAGE LEARNING

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ABSTRACT

KEYWORDS
Digital Literacy, Indonesian Language Learning

This research aims to collect, summarize, analyze, and synthesize information about digital media in learning from journal articles published between 2020 and 2024. The researcher conducted a literature search on several online databases, including Crossref and Google Scholar. The selection process resulted in 30 articles for analysis. The research findings indicate that among various learning media discussed in the articles are ICT devices, e-learning, animated videos, social media, Canva applications, Google Sites, Google Docs, pop-up books, flip classrooms, and coding.

INTRODUCTION

The era of the 4.0 Revolution, often referred to as the digital revolution, allows for rapid and real-time access to information anytime and anywhere. The presence of search engines enables quick retrieval of necessary reference materials. The digitization of information exchange and media has been facilitated by technological advancements. Friedman, as cited in Affandi et al. (2007), describes this change as "the world is flat," referring to a situation where technological developments eliminate borders between nations or time zones (Afandi et al., 2016). The progress in information technology has created an artificial and virtual "new space" known as the virtual world (Piliang, 2012).

In response to the development of information technology, the prevalence and usage behavior of the Internet in Indonesia have been steadily increasing. According to the APJII survey (Association of Internet Service Providers in Indonesia), the number of internet users in Indonesia has been on the rise since 2016, marking the beginning of the digital revolution era in Indonesia. Its rapid development has the potential to significantly impact and dominate various sectors of society, including the field of education. This imposes diverse academic requirements for each education level in Indonesia (Akbar & Anggaraeni, 2017). The digital era in education, especially in higher education, brings about changes in learning design through the utilization of digital media as a means to expand students' knowledge. Digital media can present learning materials contextually, acoustically, and visually in an engaging and interactive manner (Umam, 2013). All educational levels need to prepare for the adoption of digital-based learning processes. The latest advancements in information technology and the Internet have provided rich digital information sources (Kurnianingsih et al., 2017). On the other hand, the development of information technology has both positive and negative impacts on society. Digital literacy education cannot be avoided.

Achieving literacy in all aspects of life is a crucial prerequisite for the progress of a nation's civilization. Indonesia has a large population, but its quality is low, indicating an imbalance between quantity and quality. This reflects that the quality of Indonesia's human

resources is still insufficient and declining year by year. One factor contributing to this decline in the quality of human resources is the low level of literacy education. This situation is further exacerbated by the dominance of oral culture over reading culture. In general, the ability to use technology and information from digital devices helps humans perform tasks effectively and efficiently in various life situations, including school, career, and daily life (Gilster, 1997). The concept of literacy has undergone a long evolution and is used in various forms, including digital literacy, the ability to understand and use information from various digital sources (A'yuni, 2015).

Bawden presents a new understanding of digital literacy based on computer literacy and information literacy (Bawden, 2001). In the 1980s, microcomputers became widespread not only in business environments but also in society, leading to the development of computer literacy. Meanwhile, information literacy expanded in the 1990s when networked information technology facilitated the organization, access, and distribution of information. On the other hand, according to Martin (2008), digital literacy is a combination of various forms of literacy, such as information literacy, computer literacy, visual literacy, and communication literacy. According to Gilster, cited by Ayuni, digital literacy is expected to be the ability to understand and use information in different formats (Ayuni, 2015; Gilster, 1997). Gilster explains that digital literacy is not just about the ability to read but also about reading with meaning and understanding digital literacy is about mastering ideas, not just pressing buttons. Therefore, Gilster emphasizes critical thinking over technical skills as a core competency when working with digital media. Additionally, Gilster stresses the critical evaluation of what is found through digital media compared to the technical skills required to access it.

Gilster mentioned that besides critical thinking, the required competencies include the ability to learn how to organize knowledge, build, and convey ideas. Three aspects need to be developed and researched: 1) what is meant by digital literacy, 2) why digital literacy is needed in building a nation's civilization, and 3) how to develop digital literacy skills. Several studies have examined digital literacy using systematic review techniques. Some previous systematic review studies have examined digital literacy. These systematic reviews are presented in the form of journal articles published in several databases. Reddy et al., (2023) studied a digital literacy model to narrow the gap in digital literacy skills. The research examined prominent education models, namely OECD, E3, P21, TPACK, and SAMR, currently used to facilitate technology-based learning. It proposed a validated digital literacy model that educators or stakeholders can use to address the challenges of digital skills gaps among individuals and the identified gaps in the comparative analysis. Additionally, Tinmaz et al., (2022) discussed digital literacy by conducting a systematic review of literature on digital literacy, including annual distribution of papers, research methods used, main themes identified, and concentrated categories within those themes. Digital transformation readiness is discussed in Deja's research (2021). The study explains the concepts of information literacy and digital literacy related to academic librarianship and will be used as a basis for self-efficacy and empowerment needed to achieve individual success during digital changes in academic communication.

Based on the above exposition, it can be stated that digital literacy and the use of digital media have been extensively studied. However, the author has not found journal articles using the systematic review technique that specifically investigates how the implementation of digital literacy skills in Indonesian language learning. Therefore, the author is interested in conducting a systematic review of the implementation of digital literacy in language learning. The research will focus on the implementation of digital literacy. The research problem is the use of digital media in learning, but this usage is not effective because the digital literacy skills of students are still very lacking. Digital literacy should be more than just the ability to use various digital sources effectively; it should also be a specific way of thinking rooted in computer literacy and

information literacy. Although digital literacy has been implemented at all education levels, the competence of educators and students is still lacking. The lack of proficiency in utilizing digital media is due to the insufficient competence of teachers, but it is not only that; the availability of networks or internet connections also significantly affects the use of digital media. This research aims to collect, summarize, analyze, and synthesize information about digital media in learning from journal articles published between 2020 and 2024. The author hopes that the results of this research can contribute to digital media in learning. Through a systematic review, we can also identify limitations and gaps in the use of digital media in learning, providing ideas for topics that have not been extensively researched.

RESEARCH METHOD

This research is a systematic review with a qualitative approach to understand the meaning of the phenomenon and its relationships through in-depth investigation (Gough et al., 2017). A systematic review can be defined as a systematic and transparent method of collecting, synthesizing, and evaluating research findings on a specific topic (Sweet et al., 2007). This research is presented considering the PRISMA 2020 Checklist (Page et al., 2021).

The objective of this research is to collect, summarize, analyze, and synthesize information about the implementation of digital literacy in Indonesian language learning. To achieve this goal, the author formulated research questions using the PICO (Population, Intervention, Comparison, and Outcome) strategy (Cristina, 2007). The following is the description of the PICO components in the systematic review regarding the implementation of digital literacy.

Table 1. Description of PICO Components

Component	Description	Keywords
Population	Digital Literacy Learning	Digital learning, in school, digital literacy, learning, madrasah
Intervention	Use of media in digital literacy	learning Media learning Podcase, e-learning, TikTok, Padlet, Canva, flipbook, Pop Up Book
Comparison		
Outcame	Activities of media usage in digital literacy learning	

Based on the table above, the author formulated several research questions as follows:
1. What types of learning media are used?
2. How is the use of various media in digital literacy learning?

Inclusion and Exclusion Criteria

Inclusion and exclusion criteria are developed to ensure that selected documents contain topics related to the research. Documents collected are journal articles in Indonesian and English published between 2020 and 2024, related to the topics of digital literacy, digital media in Indonesian language learning. The following are the inclusion and exclusion criteria for the research.

Table 2. Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria

• Document is a journal article	• Journal articles and other documents that do not meet the inclusion criteria
• Available in full-text form	
• Digital document is published online in databases accessed through Publish or Perish	• Not available in full-text form
	• Document is only available in print version
• Published between 2020-2024	• Published before 2020
• In Indonesian or English	• Written in a language other than Indonesian and English
• Related to the research topic	
	• Not related to the research questions

Information Sources

The researcher conducted a literature search on several online databases using Publish or Perish (Crossref and Google Scholar) related to digital literacy, digital media, and learning media. These databases and sites were selected because they have relevant and comprehensive information related to digital literacy topics.

Search Strategy

Based on the PICO component description in Table 1, the author formulated literature search keywords. Synonymous vocabulary is combined using 'or' (Boolean operator OR), while vocabulary with different meanings is combined using 'and' (AND). The following are the search keywords used to make the search results more specific and relevant to the research topic.

Table 3. Search Keywords

Component	Keywords	Search Keywords
Population	Digital Literacy	Learning, digital learning, digital literacy, school OR madrasah
Intervention	Implementation of digital literacy	Media learning Podcase, e-learning, and YouTube

In addition to using Boolean operators, filters can also be used to narrow down search results. The keywords in Table 3 along with filter menus were used to search for journal articles in the Crossref and Google Scholar databases, followed by manual exclusion and inclusion without the assistance of filter menus.

Table 4. Search Strategy on Crossref and Google Scholar Databases

Database	Search Location of Keywords	Used Filters
Crossref	Title, abstract, and keywords	Access: Full text Type: Article Year of publication: 2020-2024
Google Scholar	Title, abstract, and keywords	Access: Full text Type: Article Year of publication: 2020-2024

To ensure that documents are relevant to the research questions, a quality assessment was conducted, adapted from Busalim, (2016), consisting of two criteria. Based on the assessment

results in Table 5, one document was excluded, namely with code D3 because the title and discussion are the same as code D30.

Table 5. Document Quality Assessment

Code	Author	P1	P2	P3	P4
D1	Nurul Lailatun Nifsah, Ermawati Zulikhatin Nurroh 2020	√	√	√	√
D2	Iim Putri, ER Ningsih 2020	√	√	√	√
D3	M Yusron, Ami Puspita 2020 (excluded)	√	√	√	√
D4	(Dewi, 2021)	√	√	√	√
D5	(Naila et al., 2021)	√	√	√	√
D6	Winda W, et al 2021	√	√	√	√
D7	Cindy O., et al 2021	√	√	√	√
D8	Elkana, et al 2021	√	√	√	√
D9	Ismani Rahayu 2021	√	√	√	√
D10	Dwi R, dkk 2022	√	√	√	√
D11	Lukman H, et al 2022	√	√	√	√
D12	Yossinya I, et al 2022	√	√	√	√
D13	Muhammad W.N 2022	√	√	√	√
D14	Winda S, et al 2022	√	√	√	√
D15	Debora, et al 2022	√	√	√	√
D16	(Murniati, 2022)	√	√	√	√
D17	Awalinda D, et al 2022	√	√	√	√
D18	I Kadek B, et al 2022	√	√	√	√
D19	Richo Budi Santoso 2022	√	√	√	√
D20	(Darmawati, 2022)	√	√	√	√
D21	(Yahzunka & Astuti, 2022)	√	√	√	√
D22	(Mastoah et al., 2022)	√	√	√	√
D23	Ersha A, et al 2023	√	√	√	√
D24	Muhendra, et al 2023	√	√	√	√
D25	Adbdul W.M 2023	√	√	√	√
D26	Shela S, et al 2023	√	√	√	√
D27	M Afifulloh, et al 2023	√	√	√	√
D28	S Aziz 2023	√	√	√	√
D29	D Anjani, et al 2023	√	√	√	√
D30	D Kirana, et al 2023	√	√	√	√
D31	FA Yaqin 2023	√	√	√	√

Assessment Criteria:

Q1: Is the research topic related to the use of digital media in learning?

Q2: Is the research methodology clearly described?

Q3: Are data collection methods clearly described?
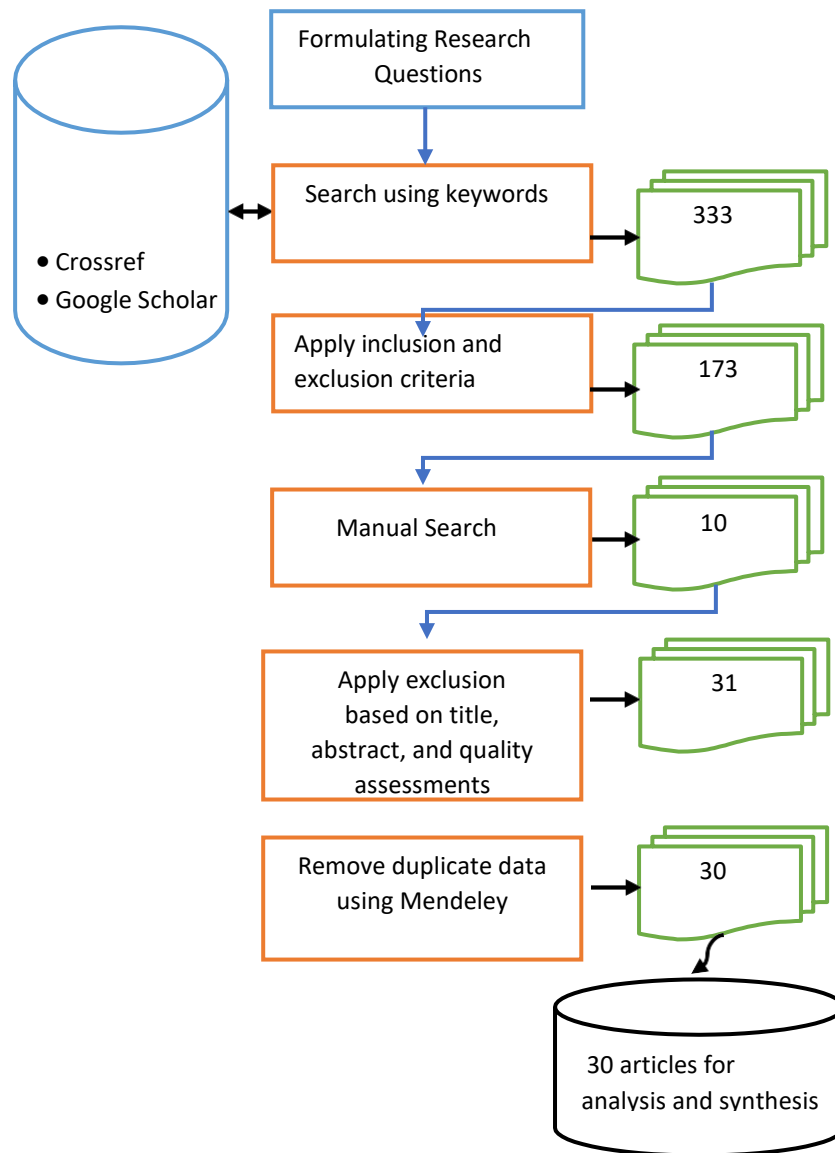
Q4: Is the data analysis phase clearly described?

Figure 1. Document Selection Process
Diagram adapted from Ahmed et al

After obtaining articles that meet the inclusion and exclusion criteria, the next step is to eliminate duplicate data using the Mendeley reference management application. The selection process resulted in 30 articles for analysis and synthesis. The following is the final number of documents selected based on the database.

Table 6. Number of Selected Documents Based on the Database

Database	Total
Crossref	23 Journal Articles
Google Scholar	7 Journal Articles

RESULTS AND DISCUSSION

From the search and selection process, 30 articles were identified for analysis. The collected data includes document codes, article titles, journal names, authors, objectives, and outcomes. After gathering the required data, the author analyzed and compared the findings, leading to conclusions that fulfill the research objectives.

Overview

All 30 articles selected for analysis are in the Indonesian language. These articles were published between 2020 and 2024, with the following distribution: two articles in 2020 (D1, D2), six articles in 2021 (D4, D5, D6, D7, D8, D9), thirteen articles in 2022 (D10, D11, D12, D13, D14, D15, D16, D17, D18, D19, D20, D21, D22), and nine articles in 2023 (D23, D24, D25, D26, D27, D28, D29, D30, D31).
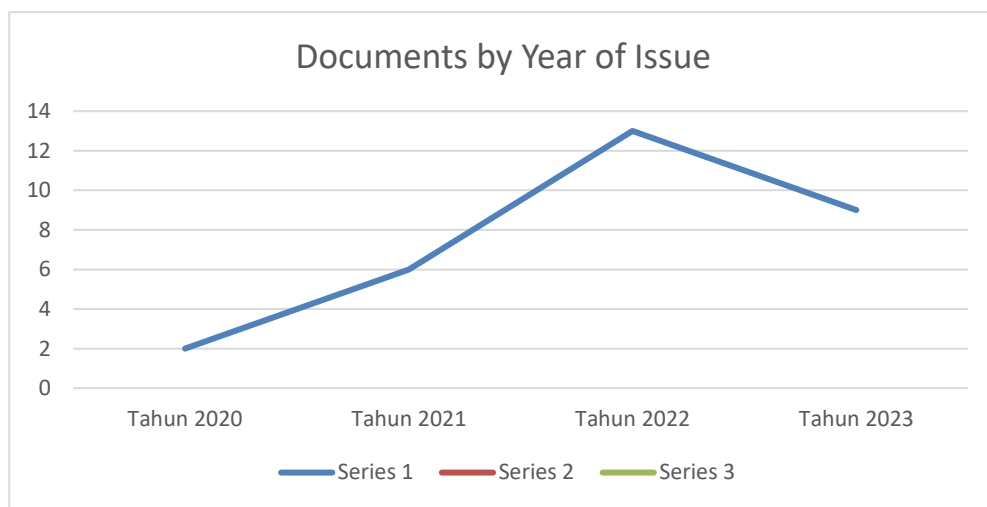

Figure 2. Number of Documents by Year of Issue

Digital Media in Learning

The use of digital-based learning media has significant benefits in enhancing educational quality. Firstly, it facilitates students' access to learning, enabling them to learn independently and flexibly without time and place constraints. Secondly, digital-based learning media allows students to review materials, deepen understanding, and accelerate learning according to their pace. This accommodates each student's unique learning speed and style. Thirdly, the use of digital media creates an innovative and interactive learning environment. Interactive multimedia content engages students actively in learning, enabling them to solve problems, collaborate with classmates, and participate in virtual experiments.

Digital-based learning media represents a revolutionary idea in the education world. Digital technology makes learning more engaging, interactive, and innovative. It provides broad access, flexible learning, and a creative learning environment for participants. These media enable deep and realistic learning experiences. With further development and integration of digital learning media, digital literacy in education can be enhanced, preparing the younger generation for a future increasingly connected with technology.

Table 7. Digital Media Used in Learning

Media Digital	Referensi

Laptop, Projector, Speaker, and Wi-Fi	Nurul Lailatun, dkk (2020), Iim Putri, dkk (2020), I Kadek B.S., dkk (2022), Abdul Wakhid, dkk (2023), M Afifulloh, dkk (2023)
E-Learning	Candra Dewi (2021), Cindy O.A., dkk (2021), Dwi R, dkk (2022), Lukman H, dkk (2022), Winda S, dkk (2022)
Animation Videos, Social Media, Website	Ishmatun N, dkk (2021), (Linggarsari, 2021)
Canva Application	Winda W, dkk (2021), Muhendra H, dkk (2023)
Zoom, Google Classroom, WAG, Youtube, Powerpoint, and e-book	Ismani Rahayu (2021), Yossinta, dkk (2022), Ersha A, dkk (2023), Shela Sonia, dkk (2023), FA Yaqin (2023)
Instagram Application	(Nugroho, 2022)
Tik Tok Application	Debora, dkk (2022), Awalinda Dea K, dkk (2022)
Google Sites, Google Docs	Tri Murniati (2022), S Aziz (2023)
Padlet Learning Media	(Santoso, 2022)
Fliiped Classroom	N.W.S. Darmawati (2022)
Media Pop Up Book	AN Yahzunka, dkk (2022), D Kirana, dkk (2023)
Game education	I Mastoah, dkk (2022)
Coding	D Anjani, dkk (2023)

Discussion

Sutarno & Mukhidin, (2013) explain that learning material can be well understood by learners if the delivery media is made interesting and interactive. Based on the Cone of Experience theory, vision and hearing affect the process of acquiring knowledge or learning experiences by 50 percent. Therefore, multimedia that combines both senses is needed to facilitate learners in achieving targeted competencies and understanding (Putri & Ningsih, 2020). Audiovisual learning using media is essential to support the implementation of both offline and online learning. In the educational context, media serves as an effective tool to present information, stimulate minds, focus, and enhance students' skills. Media is a determining factor in the success of the learning process (Qurrotaini et al., 2020).

Media plays a unique role in the success of the learning process. Having more knowledge about learning media makes the learning process easier and more supportive. Learning media is one of the factors influencing learning success. The use of engaging media helps students feel more comfortable while learning and aids in understanding its content (Rokhaani et al., 2014). As civilization advances over time, the influence of technology becomes crucial in the progress of education. Educators must play an active role in developing learning media beneficial for motivating students and enhancing their ability to master learning content. In education, the roles of educators, learners, and learning media unite to support the success of the learning process. Visual media presenting attractive features and ease of use become alternatives for designing learning.

In line with this, Asyhar, (2021) explains that any intermediary forms used by humans to convey or disseminate ideas to the intended recipients are referred to as media. These intermediaries are used by educators to learners or vice versa to deliver materials or topics to be discussed; learning media is used to realize advanced and technology-based education. The data grouping results from several articles reveal a variety of learning media, including ICT devices, E-Learning, animation videos, social media, Canva application, Google sites, Google docs, pop-up books, flipped classrooms, and coding.

The results of the research grouping presented above include a study by Ishmatun et al., which explains that the use of media in learning is not just about explaining abstract concepts more concretely but goes further to unearth various skills possessed by students. The development of technology, especially ICT, and its openness in utilization are important phenomena predicted to be the main characteristics and have implications for changing the paradigm of 21st-century learning (Al Farisi, 2018). 21st-century technology provides opportunities for users to reshape learning spaces and other learning infrastructure. The emergence of Web 2.0 tools, such as webcasting TV, blogging, social networks, or wikis, has facilitated content sharing, collaboration, and communication across geography, time zones, and cultures. Therefore, everyone can gain personal, cultural, or political interests, as long as it is published on the web and can be seen by others. Additionally, content creation is a powerful means to engage people and voice their concerns: engagement with ICT brings individual creativity and new opportunities to express oneself through different channels (Pischeto, 2011).

Widyaningrum & Sondari, (2021), in their research titled "Implementation of Digital Literacy in Designing Learning Using Canva Application," explain that features on the Canva application can be used to create learning media, with the hope of enhancing innovation in designing engaging, effective, and interactive learning media to achieve planned learning targets. The results obtained are 50% very understanding, 21% understanding, and 29% not understanding. Thus, the Canva application is considered suitable for implementation in both offline and online learning to facilitate understanding and improve the ability to master learning materials. Similarly, Hafidh & Lena, (2023) state that the results of developing learning media using the Canva application achieved a validity rate of 93.75% for media aspects, 95% for language aspects, and 88% for material aspects. Based on the responses of teachers and students in the research school, it can be concluded that learning media using the Canva application for integrated thematic learning in fifth-grade elementary school is valid and practical for use in the learning process.

In Ismani et al.'s research, the effectiveness of using Zoom, Google Classroom, WhatsApp, YouTube, PowerPoint, and e-books in online learning is discussed. The use of digital media-based learning platforms is widespread across all levels of education due to various considerations. However, in online learning, there are still obstacles, such as uneven or inadequate internet networks, expensive internet access, or even the absence of internet access. In large urban areas, internet access is likely not a significant issue, with various internet service providers competing for market share and adjusting prices. However, in remote, border, rural, and secluded areas, internet access is not easily obtained.

As commonly known, media literacy is the ability to access, analyze, and produce information for specific outcomes. Learners are required to seek and gather information to be more discerning in accessing, analyzing, and producing information. Given the abundance and rapid circulation of information today, one must be selective in choosing information. Choosing the wrong information can have serious consequences (Sintasari et al., 2020).

CONCLUSION

This research examines previous studies related to digital literacy. Based on the results of a systematic review, researchers can identify the types of digital media commonly used in learning activities. Digital media in learning refers to the use of digital technology in the learning process. In Indonesia, many digital media or digital platforms have been utilized in

education. Some digital media used include animated videos, social media, Canva applications, Google Sites, Google Docs, pop-up books, and flip classrooms. The use of digital media in learning has proven to be effective and efficient, allowing learners to actively and deeply engage through interactive, visual, and audio elements. Digital media can present learning materials contextually, making them interesting and interactive through audio and visual elements. The use of digital media in learning is also supported by the development of technology-based digital learning resources, which can help facilitate the learning process for learners and enrich the interaction between educators and learners. Thus, digital-based learning media has become an important concept in the learning process in the technology era, transforming traditional paradigms into more dynamic, interactive, and engaging experiences for learners.

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