



## **Transformation of Reading Literacy In Elementary School Students During The Covid-19 Pandemic: A Literature Review**

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### **Abstract**

The COVID-19 pandemic has changed learning patterns and significantly impacted elementary school students' reading literacy. This study aims to analyze changes in elementary school students' reading literacy practices during the pandemic through a systematic review of recent research. The Systematic Literature Review (SLR) method was applied by referring to the PRISMA guidelines. The inclusion criteria for articles were 1) in the form of journal articles, 2) published in the 2020-2024 period, 3) indexed by scopus, 4) using English, 5) complete article sections, and 6) relevant to reading literacy at the elementary school level. A total of 519 articles from the Scopus and PubMed databases were selected to obtain 22 articles that met the criteria. Based on the analysis of research articles, it was found that the COVID-19 pandemic caused a decline in students' reading literacy. This is due to several key factors. The first factor is the school closure policy. The second factor is the readiness of online learning. The third factor is the socio-economic background of students. The fourth factor is technology accessibility. These four factors contribute to gaps in accessibility of technology and the quality of learning received by each student. In addition, the educational adaptation to strengthen reading literacy during the pandemic includes holding reading teaching enrichment programs, using technology to support learning, and implementing appropriate reading teaching methods.

**Keywords:** *reading literacy; elementary school students; COVID-19 pandemic*

### **INTRODUCTION**

In early 2020, the world experienced significant changes due to an outbreak that spread throughout the world. This phenomenon began with the identification of the Coronavirus in Wuhan City, China, which had various global impacts (Tarkar, 2020). To anticipate the transmission of this virus, countries in the world began to implement new policies, including wearing masks, washing hands, avoiding crowds, maintaining distance, and lockdown (Pokhrel & Chhetri, 2021). This regulation is not only applied by the general public but also brings significant changes to the education system. With the closure of schools, learning that was initially carried out face-to-face has shifted to virtual learning. Students must get used to organizing their learning activities at home, while the role of parents is increasingly important in supporting the success of learning at home.

The educational revolution due to COVID-19 presents new challenges for the world of education. One challenge that needs serious attention is that face-to-face virtual learning carried out for a long time will cause learning loss, which results in a decline in students' academic achievement and the risk of dropping out of school, especially among children (Cerelia et al.,

2021; Kertih et al., 2023; Lerkkanen et al., 2023). Several studies have reported on the impact of the COVID-19 pandemic on student exam results (Betthäuser et al., 2022; Hammerstein et al., 2021; Zierer, 2021). The decline in learning outcomes also applies to reading literacy as one of the main competencies in achieving student success in various subjects and providing opportunities for students to contribute to community life (Ludewig et al., 2022). This opinion is supported by research results showing a decline in test scores in reading during the pandemic compared to before the pandemic (Kuhfeld et al., 2023). It can be said that during the pandemic, many students have difficulty maintaining their reading literacy.

The International Association for the Evaluation of Educational Achievement (IEA) explains that reading literacy is the ability of students to understand and apply written language formats that are required by society and/or valuable to a person (Marôco, 2021). Reading literacy is not only interpreted as the ability of students to sound out letters or words. The concept of reading literacy, according to the OECD, includes a variety of linguistic and cognitive abilities, from basic decoding skills to understanding more complex linguistic and textual structures, vocabulary, and grammar, which are needed to understand and integrate meaning with metacognitive abilities and someone's insight into the world (OECD, 2019). In the context of education, reading literacy is the basis for students to achieve success in various subjects. Reading literacy is a fundamental skill that needs to be mastered by every individual. Good reading literacy skills will bring various positive benefits to students. Students can increase their insight, explore the world, obtain accurate and valuable information, and develop a perspective in decision-making (Arwansyah & Wahyudi, 2019; Khofifah & Ramadan, 2021; Madu & Jediut, 2023; Robi & Abidin, 2020). With literacy skills, students have the resources to develop their quality of life (Madu & Jediut, 2022). Therefore, schools need to guide students to develop their literacy skills (McKeever et al., 2017).

The COVID-19 pandemic has changed the learning pattern from direct learning to distance learning. Distance learning makes it difficult for students to develop literacy skills (Markum et al., 2022). With distance learning, interaction between teachers and students is limited, reducing opportunities for students to receive direct assistance in developing reading literacy. At the elementary school level, students are accustomed to face-to-face methods and have not become independent readers, so they are less active in distance learning (Anugrahana, 2020; Pilonieta et al., 2024). Disparities in access to quality education further complicate this issue. Research findings indicate a gap in literacy skills among students in rural, suburban, and urban areas (Yudiana et al., 2023). Related to this, several studies have revealed that factors affecting literacy development include student characteristics, family environment, and economic conditions, as well as the school climate (Chen et al., 2021; Firat & Koyuncu, 2023; Ganiyeva, 2021). During the pandemic, remote learning shifted the primary responsibility for literacy development to the family environment. Limited access to printed books, the distraction of technology offering various forms of entertainment, and an uncondusive home environment for learning pose challenges that must be addressed to optimize students' literacy development.

The previous introduction provided a general overview of the article. Between 2019 and 2024, the impact of the pandemic on student learning outcomes has been extensively studied. Previous research by Zierer (2021) found that school closures due to the COVID-19 pandemic caused a decline in students' academic performance, particularly in the USA, Belgium, Switzerland, and Germany. Similarly, Hammerstein et al. (2021), using a literature review

approach, also found that school closures during the pandemic negatively affected student learning outcomes, especially among younger students and those from socioeconomically disadvantaged families. Betthäuser et al. (2022), combining systematic literature review and meta-analysis methods, revealed a decline in students' learning outcomes since the beginning of the pandemic, with an effect size of Cohen's  $d = -0.14$ . This decline was more significant in mathematics, among students from low-income backgrounds, and in middle-income countries. These previous studies examined the general decline in students' academic achievement during the pandemic compared to the pre-pandemic period. However, several research gaps require attention. First, the studies focused on general learning outcomes and did not specifically examine changes in reading literacy at the elementary school level. Second, there is a limited number of studies analyzing the adaptation processes in education to bridge literacy gaps in the post-pandemic period. Third, there is a scarcity of research integrating findings from various countries to analyze patterns of changes in reading literacy and strategies for their implementation within the educational context in Indonesia.

This article addresses these research gaps through an analysis of relevant articles using a systematic literature review approach to examine the reading literacy of elementary school students during and after the pandemic. The novelty of this study lies in the integration of international and national findings on the dynamics of reading literacy, affecting elementary school students' reading literacy during the pandemic, and the educational adaptation processes to strengthen literacy in the context of Indonesia. By employing a systematic literature review, this article provides a more comprehensive and in-depth perspective by synthesizing various research data from multiple countries. The main objective of this study is to provide insights into changes in elementary school students' reading literacy practices during the pandemic. The specific objectives of this article are to (1) identify the impact of the COVID-19 pandemic on elementary school students' reading literacy, (2) analyze the affecting factors students' reading literacy during the pandemic, and (3) describe the educational adaptations made to strengthen reading literacy during the pandemic. The findings of this study are expected to offer a new paradigm in the study of elementary school students' reading literacy and contribute to the development of theories and educational practices relevant to the current situations.

## **METHODS**

This study adopts a qualitative approach using a systematic literature review method to analyze relevant research on elementary school students' reading literacy during the pandemic. The systematic literature review method is a research methodology used to analyze, evaluate, and investigate published research findings based on specific themes or subjects with a different purpose from the work being studied (Chigbu et al., 2023). To ensure that this research is organized systematically and accurately, the study follows the PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analysis) guidelines, which consist of three stages: identification, screening and eligibility, and inclusion and data extraction (Hijriyah et al., 2023). In the identification phase, relevant articles are collected using the Publish or Perish application. This application provides features that allow users to search for articles more efficiently (Bensman, 2011). The articles are sourced from Scopus and PubMed, using the following keywords.

**Table 1. Search Keywords for Articles Using Publish or Perish**

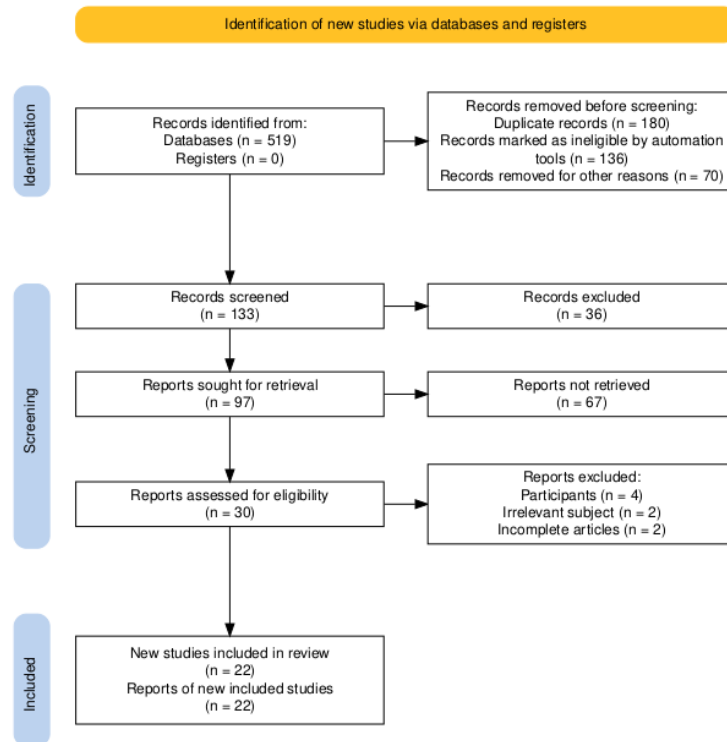
Keyword	Quantity	
	Scopus	PubMed
Reading during pandemic covid-19	36	8
Reading achievement during pandemic covid-19	13	3
Reading comprehension during pandemic covid-19	123	40
Reading fluency during pandemic covid-19	20	12
Reading skills during pandemic covid-19	200	64
Total (519)	392	127

Table 1 displays several keywords related to reading literacy. The selection of these keywords refers to the definition of reading literacy according to OECD in 2019 to expand the search for relevant articles. The Publish or Perish application found 519 articles from Scopus and PubMed databases related to elementary school students' reading literacy. The articles that were collected were then selected based on the following criteria.

**Table 2. Inclusion and Exclusion Criteria**

Inclusion Criteria	Exclusion Criteria
Journal Articles	Proceedings, article review, bok chapters
Articles published between 2020-2024	Articles published before 2020
Articles indexed in Scopus	Articles not indexed in Scopus
Articles in English	Articles not in English
Full-text articles	Incomplete articles
Relevant to reading literacy at the elementary school education level	Relevant to reading literacy but not at the elementary school education level

In the screening and eligibility phase, 133 articles were selected based on their titles, and 97 articles were considered relevant. The articles were then further screened by reviewing their abstracts and keywords, resulting in 30 articles that met the criteria. A thorough review of these 30 articles was conducted, and 22 articles were identified as meeting the criteria. The article selection process is illustrated in the diagram below.



**Figure 1. PRISMA Flow Diagram**

The data extraction phase is the process of extracting findings from previous studies to obtain valuable data to answer the research questions. Thematic analysis is used in this study as the data analysis technique. Thematic analysis is a qualitative data analysis method that involves identifying, analyzing, and reporting patterns that appear from the data, resulting in a systematic and comprehensive depiction (Gupta et al., 2024). This technique is applied based on a structured approach to interpret the meaning of the research. Grouping aspects from previous studies based on emerging patterns allows this research to explore and present a systematic overview of the transformation of elementary school students' reading literacy during the COVID-19 pandemic era, thereby providing educators with insights to develop reading literacy, particularly in elementary schools, as foundational literacy. The sequential stages performed will result in a holistic understanding of the research data (Naeem et al., 2023).

## RESULT AND DISCUSSION

This study collected, selected, and analyzed twenty-two relevant articles published during the COVID-19 pandemic period up to the post-pandemic era, between 2020 and 2024. This section will explain the findings of various studies related to reading literacy among elementary school students. The article analysis focuses on the impact of the COVID-19 pandemic on elementary school students' reading literacy, the affecting factors reading literacy during the pandemic, and educational adaptations to strengthen reading literacy during the pandemic. The results and discussion will be presented thematically and related to the Indonesian context.

### *The Impact of the COVID-19 Pandemic on Elementary School Students' Reading Literacy*

The COVID-19 pandemic has had consequences for the development of reading literacy in various countries, as evidenced by several studies employing different designs and methods. For example, the study by Alves et al. (2022) found that students' reading fluency before the pandemic was significantly better than during the pandemic. Similarly, (Domingue et al., 2022) reported that oral reading fluency developed more slowly during the first 200 days of the 2020-2021 academic year compared to pre-pandemic levels. Meanwhile, the study by Lerkkanen et al. (2023) further supported previous findings, revealing that students' average reading comprehension skills before the pandemic were higher than during the pandemic, with slower progress in reading comprehension development. These three studies demonstrate a decline in indicators of fluency and comprehension, which was worsened by the pandemic.

Indonesia is one of the countries that faced significant challenges due to the pandemic, particularly in terms of reading interest. In Indonesia, the COVID-19 pandemic has decreased students' interest in reading books (Fahmy et al., 2021). This reading interest is important for students as intrinsic motivation can encourage them to develop long-term reading habits and improve reading comprehension. According to research, it was found that during the pandemic, students read more materials related to their lessons (Rosdiana et al., 2021). However, reading storybooks that are accompanied by pictures can help foster students' enthusiasm for reading (Rohim & Rahmawati, 2020). As a result, many students are still unable to read properly (Chandra et al., 2021; Widodo & Indraswati, 2022). These findings indicate that during the pandemic, many students struggled to keep up with their learning effectively due to insufficient reading skills.

On the other hand, some studies found that the first period of the pandemic showed an improvement in reading skills during remote learning compared to the pre-pandemic period (Förster et al., 2023). It was also explained that the possible reason for better reading abilities during the pandemic was the focus on reading activities supported by parents during home learning. This suggests that remote learning is not always detrimental and can be effective in specific contexts. Another interesting finding is that there was a slight improvement in word recognition skills, although reading speed and comprehension did not change or even decrease (Baş et al., 2023). In Indonesia, similar findings were observed in the study by Gunarwati et al. (2021), where students' reading comprehension skills were categorized as sufficient. However, some students still did not meet the minimum completion criteria.

The results show that although there are gaps in several literacy skills, there are also dimensions that can be improved. Generally, these studies highlight the significant impact of the pandemic on students' literacy development, with notable differences in specific groups based on socioeconomic status and access to educational resources. Although efforts have been made to adapt to remote learning conditions, the diverse backgrounds of students emphasize the need for comprehensive involvement and educational policies to minimize the pandemic's disparities. Furthermore, although some studies show improvements in reading skills among certain students during the pandemic, the negative effects remain dominant, especially for students who are disadvantaged in terms of both economic and social factors.

### *Affecting Factors Students' Reading Literacy During the Pandemic*

The decline in reading ability among students during the COVID-19 pandemic was caused by various specific factors that significantly contributed to the development of students' literacy. School closures, accompanied by the sudden shift from face-to-face learning to online learning, widened the gap among certain student groups and showed uneven impacts. Online learning led to reduced social interaction and collaboration between teachers, hindering the development of students' literacy (Pilonieta et al., 2024). As a result, there was a decline in reading ability, particularly among students from low economic backgrounds (Kennedy & Strietholt, 2023; Rosendo et al., 2023). The performance gap in reading between students from low and high economic backgrounds was recorded to have doubled throughout 2020 (Shaul et al., 2024). Some other studies have confirmed the decline in literacy skills due to school closures. In several countries, students' reading comprehension and motivation remained stable during the pandemic because schools remained open or special intervention policies were implemented for students with limited language proficiency (Hallin et al., 2022; Thomas, 2021). The school closure policy resulted in gaps in several elements of reading ability; however, it did not necessarily reduce reading comprehension and fluency overall (Starling-Alves et al., 2023).

Furthermore, the accessibility of technology also supports the success of online learning. Students with limited access to technology, such as those attending public schools, students from low economic backgrounds, and students from migrant backgrounds, experienced a more significant decline in reading skills (Cubilla-Bonnetier et al., 2023; Kuzmanic & Valenzuela, 2024; Ludewig et al., 2022). Conversely, other studies report that although students experienced significant delays during the initial school closures, the second wave of school closures showed a reduction in negative impacts as online learning had become better prepared (Oostdam et al., 2024). Access to technology, the quality of online learning, and direct interaction with teachers helped reduce the negative impact of learning during the pandemic. Therefore, educational policies that support social interaction and reduce technology access gaps in online learning are crucial in minimizing literacy gaps.

In general, the factors most highlighted in previous studies are school closure policies, online learning, students' backgrounds, and technology accessibility. These four factors are interconnected and create a domino effect on the literacy process during the pandemic. This is consistent with the view that improvements in reading ability among younger students heavily rely on the home environment and the extent to which parental involvement supports children's learning at home (Bacher-Hicks et al., 2021). Therefore, when schools were closed, children experienced different outcomes due to variations in the support provided by parents during home-based learning. This, in turn, affected students' learning outcomes at home.

These factors are also relevant to the situation in Indonesia, especially concerning the digital infrastructure gap between regions. In some areas of Indonesia, various online learning platforms have been utilized, but they are hindered by poor internet connectivity (Pamungkas & Sukarman, 2020). Additionally, the digital readiness of teachers also needs attention. In some regions, teachers have not fully utilized the digital tools available, such as the Rumah Belajar and Canva applications (Anita & Astuti, 2022; Miftah & Rozi, 2022).

### ***Education Adaptation in Strengthening Reading Literacy During the Pandemic***

During the COVID-19 pandemic, education needed to be adaptive as a primary strategy to address the challenges of maintaining reading literacy stability. Various innovations in teaching have proven effective through several studies. These innovations can be realized through learning programs, teaching methods, and technology adaptation. A systematic mentoring program has been proven effective in reducing the number of students with low reading abilities and improving the reading skills of students from different socio-economic groups (Sucena et al., 2022). The application of technology in literacy learning, such as interactive mobile apps and social media, can have a positive impact on improving students' reading comprehension (Esgrina & Generale, 2023; León et al., 2022). Moreover, the use of peer tutors in online learning has been verified to improve accuracy and fluency in reading significantly, especially for students with initially low reading skills (Sanches-Ferreira et al., 2022). Repetitive learning approaches with big book media have also been shown to positively impact students' reading fluency and text comprehension (Canuto et al., 2024). In general, an integrated approach to learning that combines technology, teaching strategies, and systematic personal support has proven beneficial in enhancing students' reading abilities, especially for those with low initial reading skills.

In Indonesia, various efforts have been made as forms of adaptation to improve students' reading literacy, such as the implementation of programs and the utilization of digital media. Markum et al. (2022) stated that the Literacy Reading Assistance program with a home visit method effectively improved reading literacy across all indicators. In line with this, Lutfi et al. (2021) suggested that conducting reading support activities at home using the literacy.cloud platform was effective in enhancing reading literacy. Not only program implementation but also efforts to strengthen reading literacy during the pandemic can be achieved through the use of digital media. As noted in the study by Fauziah et al. (2021), if used effectively, the social media platform YouTube can become an effective remote learning tool to improve early reading skills in first-grade primary school students.

Based on the analysis of 22 previous articles, several key findings align with the objectives of this research. First, the COVID-19 pandemic had different impacts on primary school students' reading literacy. Most studies confirm a decline in reading skills during the COVID-19 pandemic, particularly in fluency, comprehension, and reading smoothness. The findings of this research support earlier studies that reported a decline in student learning outcomes during the pandemic (Betthäuser et al., 2022). However, Thomas (2021) presents a different result, showing that the COVID-19 pandemic did not affect students' reading comprehension and motivation.

Second, this research identifies four main factors that affect reading literacy during the pandemic: school closure policies, online learning, students' backgrounds, and accessibility to technology. Students from lower socio-economic backgrounds experienced a more significant impact. This finding aligns with previous research that found that school closures during the pandemic had a negative impact, especially on students from low-income backgrounds (Hammerstein et al., 2021). The phenomenon of declining literacy skills during the pandemic highlights that face-to-face learning is a crucial aspect of developing students' reading literacy. This is due to the cognitive and socio-emotional characteristics of primary school students, who require direct interaction with teachers or peers (Syahriani & Santoso, 2024).



However, other research shows that more prepared remote learning can reduce learning delays, especially for students from low socio-economic backgrounds (Oostdam et al., 2024). One reason students' reading abilities remained stable during the pandemic is that schools stayed open, particularly for students requiring special intervention (Hallin et al., 2022; Thomas, 2021). Therefore, the readiness for both face-to-face and online learning should be prioritized to ensure that students' reading literacy can develop optimally.

The third finding is that educational adaptations in strengthening reading literacy have shown positive results through various innovations, such as the use of technology and systematic mentoring programs, proving that learning innovations can be effective solutions if their planning considers the context and students' needs. In Indonesia, educational adaptations to strengthen literacy have also been carried out, such as home visit programs, utilizing social media as learning media, and digital platform-based reading tutoring. The success of these innovations indicates that the combination of traditional and modern approaches can be an effective strategy if well-designed. Flexibility in the implementation of literacy programs is crucial so that each region can run programs according to their conditions. This research emphasizes the importance of adaptive education policies to reduce reading literacy gaps. Additionally, efforts are needed to ensure digital facility equality and improve teacher readiness in adapting technology-based learning to maximize literacy learning during and after the pandemic. Readiness includes the ability to operate digital devices, access technology, and adapt to new learning models (Wahyudi & Jatun, 2024).

## **CONCLUSION**

### **Conclusion**

In general, the majority of previous research highlights a decline in primary school students' reading literacy performance during the COVID-19 pandemic. Students' reading literacy decreased in aspects such as fluency, comprehension, and reading smoothness. However, there was also a group of students who showed stability in their reading skills. Four main factors that affected the decline in reading literacy were identified: 1) school closure policies, 2) the preparedness for online learning, 3) socioeconomic background, and 4) technology accessibility. These factors led to differences in accessibility to technology and the quality of learning received by each student. To strengthen students' reading literacy, several efforts were made to adapt to the learning conditions during the pandemic, including enrichment programs, the use of technology, and appropriate teaching methods. This study provides important implications for strengthening reading literacy, which had decreased during remote learning during the pandemic. It shows that specific interventions, such as enrichment programs or intensive mentoring, are needed to address literacy gaps. Additionally, collaboration between schools and parents is essential to support students' learning at home.

### **Suggestions**

The findings of this research offer several recommendations for the readers. For school policymakers, particularly in Indonesia, it is recommended to maximize the implementation of the School Literacy Movement (GLS) and develop both physical and digital libraries with book collections that align with students' interests and reading levels. This would help reduce the gap

in supporting reading learning facilities between students from low and high socioeconomic backgrounds. Schools should also collaborate by offering parenting seminars to discuss effective reading support strategies for parents. For teachers, it is suggested that special intervention programs be developed for students whose literacy scores are below the class average and that the results be monitored. Additionally, teachers should integrate various proven learning models that effectively enhance reading literacy. Parents are recommended to accompany their children and establish a reading routine at home, which the school can monitor through the use of a reading monitoring book. Future research is encouraged to examine the effectiveness of remedial literacy programs, explore factors affecting reading literacy from the psychological perspective of students using a mixed-method approach, or develop instruments to measure reading literacy for primary school students that suit the characteristics of Indonesian students.

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