Systematic Literature Review: Students' Challenges in Enhancing Reading Comprehension in Online Classrooms

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ABSTRACT

While many studies have examined the challenges of online learning during the COVID-19 pandemic, but little focus has been focused on the unique challenges faced by students in enhancing their reading comprehension in online classrooms. The purpose of this study is to thoroughly examine the body of study findings in order to identify and define all of the challenges that students find, as well as to examine the strategies used to enhance reading comprehension skills in online classroom settings. This study investigated 15 peer-reviewed journal articles that were published between 2016 and 2025 using the Systematic Literature Review (SLR) method. The articles, which focused on studies involving EFL/ESL students in online or blended English language learning contexts, were chosen using particular inclusion and exclusion criteria. Thematic synthesis was utilized to analyze the data and classify recurrent issues. The results showed that students had a number of interconnected issues, such as a lack of motivation and self-control, a lack of interaction and feedback, a lack of digital literacy, and cognitive overload from multimedia content. Furthermore, socioeconomic factors like reliable internet access and suitable devices are also crucial. This study highlights the importance of interactive, scaffolded, student-centered reading activities. By focusing emphasis on the challenges associated with online reading, it supports educators, curriculum developers, and policymakers in enhancing online reading instruction.

Keywords: Reading Comprehension, Online Classrooms, Students' Challenges, Reading Strategies

INTRODUCTION

The transition from traditional learning environments to digital learning environments has changed the way students interact with books. Reading comprehension, which is an important aspect of academic success, has become more complicated due to the increasing role of online learning environments. This is caused by technological, cognitive, and pedagogical factors (Wiranatha & Santosa, 2024).

The impact of digital media on Indonesian students' reading behavior is the main subject of this study, which investigates how technology use affects reading habits in the country. According to Sari and Santosa (2023), the study also looked at how mobile-

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assisted language learning (MALL) affected Indonesian high school students' reading comprehension. Platforms like Padlet and Google Classroom utilized for online conversations and Quizizz and Nearpod for assessment and learning content production, the results demonstrated that the use of MALL had a substantial impact on students' reading comprehension skills.

Students struggle with reading comprehension in online classrooms. Reading comprehension gives a big contribution to students to perform their communication skill better (Rohmah, 2018). Reading comprehension is classified by incorporating a range of processes involving language, reading ability, word knowledge, and fluency as the process of making meaning (Ahmadi, 2017). Recently, students are using online learning to learn, which is closely related to the current digital era, an era that demands the speed of the internet to communicate, search for information, and anything related to globalization (Prasetya, 2021). Online classroom learning can be supported by using online platforms such as Google Classroom, Zoom, WhatsApp, and others. Teachers can use the platform to add course materials, create assignments and announcements, send YouTube links, and attach files from Google Drive (Muzakkir et al., 2022).

In practice, online classroom learning has challenges on students' reading comprehension. There are several factors that cause students' challenges in enhancing reading comprehension, such as students' background, social situation, school environment, and teaching strategies (Muzakkir et al., 2022). Students face challenges in online reading comprehension, including difficulty in answering the questions related to the main idea, unable to answer the questions, difficulty understanding the appropriate meaning of the words due to a lack of vocabulary (Muzakkir et al., 2022). Use of cybergogy in Improving Reading Comprehension among high school students by using the method systematic literature review (Odvina et al., 2024). The results found that cybergogy has significant potential to improve classroom comprehension through the use of digital tools, flexibility in learning, and improved teaching quality. However, its implementation still faces challenges in the form of digital distribution, lack of clarity in basic reading, and substandard infrastructure and teacher training. Therefore, a more mature strategy is needed to overcome these obstacles so that the benefits of cybergogy can be maximized in education.

While previous research has extensively examined the general challenges of online learning during the COVID-19 pandemic, there is still little research that specifically focuses on students' difficulties in improving reading comprehension in virtual classrooms. Based on the research conducted by (Tan et al., 2025), emphasizing on technological barriers, well-being, and learning loss broadly, they neglected the cognitive and pedagogical dimensions of reading instruction in online settings. Moreover, students' experiences of processing, interpreting, and engaging with texts online are largely underrepresented. Therefore, there is a need to investigate the unique challenges students face in improving reading comprehension in digital

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environments, especially in relation to interactional constraints, digital inequalities, and lack of customized reading strategies.

Thus, it is imperative to identifies, evaluates, and investigates challenges and practical solutions for the difficulties that students encounter when trying to improve their reading comprehension in an online learning environment. This research aims to systematically explore these challenges and offer insights into the instructional, technological, and cognitive barriers involved. By knowing the causes, teachers can provide solutions to improve reading comprehension and help students overcome these difficulties in digital learning contexts.

Table 1. Eligibility Criteria

Criteria	Included	Excluded
Date	Papers published from 2016 to 2025 were included	Papers published before 2016 to 2025 were excluded
Language	English	Studies not written in English
Setting	Papers focusing on challenges in enhancing reading comprehension in Online Classroom of EFL/ESL	Papers that focus on challenges in online classrooms non reading comprehension
Database	Scopus	Other databases

METHOD
Information Sources and Research Strategy

The databases used are ERIC and Scopus using keywords "literature review," "challenges," "difficulties", "reading comprehension," "online classroom," and "EFL") and then limited from 2016 to 2025 written in English. This study uses ERIC and Scopus as its database because the results obtained after entering these keywords are more relevant to what is needed than other journal sources.

This study uses a step-by-step method. First, research questions are formulated according to the topic and requirements. Then, a literature search is done to find sources that help answer the research questions and support related studies. After that, inclusion and exclusion criteria are used to decide which data is suitable for the Systematic Literature Review (SLR). Next, a quality check is done to make sure the selected studies are reliable and valid. Once the suitable studies are chosen, data is collected in an organized way for the next step. After that, the data is examined to determine the answers to the research questions. In the final step, the research results are written and arranged into a scientific article following academic writing rules.

Table 2. Formula Strategy

Database	Keywords	n
Scopus	TITLE (challenges OR difficulties) AND (enhancing OR improving OR advancing OR encouraging) AND (reading AND comprehension OR reading OR literacy) AND (online AND classrooms OR virtual OR classroom) AND (esl OR efl OR english) AND PUBYEAR > 2015 AND PUBYEAR < 2026 AND (LIMIT-TO (OA , "all")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (SUBJAREA , "SOCI"))	250 articles were found using this keyword.

Study Selection

The review process consists of several stages including identification, screening, and eligibility. The following is a chart of each stage in the systematic review process.

Specific keywords were entered into the Scopus database to find relevant articles, and the search was restricted to studies published between 2016 and 2025. This initial search retrieved 250 articles. After finding the number of available article results, all retrieved articles were reviewed based on the keywords in their titles. At this stage, 235 articles were excluded for not meeting the inclusion criteria, leaving only 15 articles that were accessible and stored in the screening repository (Google Drive). After that we perform data eligibility. In this phase, the 15 remaining articles were assessed to ensure they met the required criteria, specifically focusing on challenges in reading comprehension in online classrooms. Ultimately, 235 articles were excluded as they did not align with this criterion, leaving 15 articles that were eligible for further analysis.
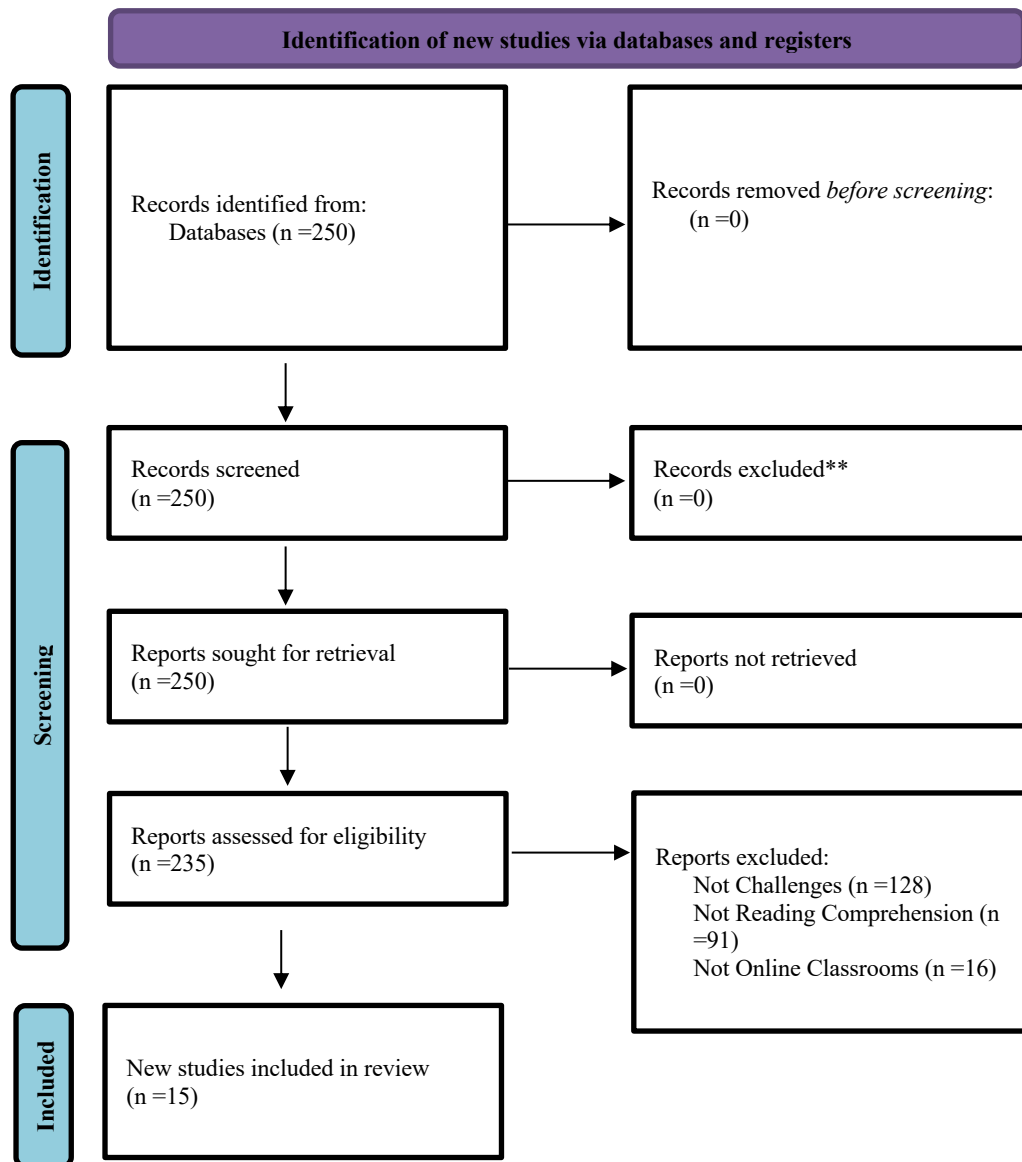
Data Extraction and Data Analysis

Selected articles were reviewed in depth, with key findings recorded using a data extraction form consisting of several components, such as Author identity, year of publication, title country of origin of the study, methodology used, sample, and aim. Next step is completing the form that utilizes Microsoft Excel to code and categorize the data as part of the analysis to answer the research questions.

Review Data

On March 17, 2025, research was conducted that resulted in 250 articles from the databases. After the identification section, nothing is excluded before entering the screening stages. During this section, no articles were excluded based on their titles and abstracts, meaning all 250 articles were considered for further evaluation. During the full-text retrieval phase, 250 articles could be accessed. In the eligibility assessment, 235 articles were excluded due to not meeting the research criteria. From the articles

that were eliminated, 128 articles were unrelated to challenges, 91 articles did not relate to reading comprehension, and 16 articles did not focus on online classrooms. After this rigorous selection process, 15 studies were deemed relevant and included in the final review. This selection process is visually summarized in the PRISMA 2020 diagram for Systematic Literature Review (SLR).

Identification of new studies via databases and registers

Identification

Records identified from:
Databases (n =250)

Records removed *before screening*:
(n =0)

Screening

Records screened
(n =250)

Records excluded**
(n =0)

Reports sought for retrieval
(n =250)

Reports not retrieved
(n =0)

Reports assessed for eligibility
(n =235)

Reports excluded:
Not Challenges (n =128)
Not Reading Comprehension (n =91)
Not Online Classrooms (n =16)

Included

New studies included in review
(n =15)

FINDING AND DISCUSSION

Research findings were found based on the two research questions that have been defined. The findings were found through thematic analysis of fifteen selected articles related to students' challenges in reading comprehension and strategies to enhance their reading comprehension skills.

The findings are interpreted, their implications highlighted, connected to current knowledge, and future research directions suggested through thematic discussion of the findings.

According to the themes we have identified, our study represents that students find a variety of challenges while trying to enhance their comprehension skills, particularly when learning online. The challenges are Cognitive and Linguistic Barriers as well as constraints in Online Learning and Technology Integration.

Most of the analyzed studies employed qualitative approaches, with a strong focus on Systematic Literature Reviews guided by the PRISMA framework. The research primarily investigated the effects of online learning during the COVID-19 period, particularly in relation to student achievement, engagement levels, and the difficulties encountered by teachers. A considerable number of studies concentrated on English Language Teaching (ELT) and second language acquisition, notably within the Indonesian and Malaysian contexts, while others explored aspects of reading comprehension and digital literacy. The data sources varied, including literature-based reviews and interviews with both educators and learners. Conducted across multiple countries, these studies offer a broad perspective on digital education. The findings highlight both the strengths and shortcomings of online learning, stressing the importance of adopting more engaging, learner-centered strategies and improving the use of technology in education.

Cognitive and Linguistic Barriers

Students experience reading comprehension difficulties due to limited vocabulary knowledge and complex text structures (González-Valenzuela & Martín-Ruiz, 2017; Rangnes, 2019). Students have difficulty in interpreting complex sentences therefore limiting their comprehension. Students had difficulty understanding the meaning of the text due to the lack of in-depth text cohesion and coherence (Rice, 2018). Students who have limited working memory capacity struggle to understand difficult texts (Joh, 2018). This results in students having difficulty in storing and processing information during reading tasks. Online classes do not support students in critical thinking in comprehending texts and traditional literacy difficulties (Molin et al., 2018).

Online Learning and Technology Integration

Online learning leads to a lack of student engagement, which has a negative impact on academic performance, such as reading ability (Akpen et al., 2024; Cortés-Albornoz et al., 2023). The transition to digital literacy in a second language presents another complication, especially for students who do not have appropriate digital reading strategies (Reiber-Kuijpers et al., 2021). The

technological difficulties faced by teachers and students, such as limited access, lack of training, and difficulty adapting to new learning environments (Rido et al., 2023; Ag-Ahmad et al., 2025). The digital divide and lack of technological solutions lead to gaps in students' reading ability (Rintaningrum, 2023); Tan et al., 2025); Theodorio et al., 2024); Zou et al., 2025).

The findings indicate that students encounter various difficulties in developing their reading comprehension, particularly in online learning settings. These difficulties divided into two main themes: Cognitive and Linguistic Barriers and Online Learning and Technology Integration.

The first theme, Cognitive and Linguistic Barriers, refers to challenges such as limited vocabulary, complicated sentence structures, poor organization of text, and low memory capacity. These factors make it challenging for students to grasp the meaning of what they read, recall important information, and engage in deeper thinking. Online learning also often fails to provide enough support to help students build basic reading and thinking skills.

The second theme focuses on challenges students face when learning through online platforms and using digital tools. These include low student engagement, a lack of effective digital reading strategies, and technological problems such as limited access to devices, inadequate training, and difficulty adapting to new digital tools. Furthermore, unequal access to technology adds to the difficulty some students face in improving their reading skills.

After identifying the main challenges that hinder students' reading comprehension in online learning, there are several strategies to effectively overcome these challenges. These strategies are supported by the use of reading strategies, early intervention and teacher support as well as Maximizing Technology and Better Learning Materials. By using these strategies, students can be better prepared for the challenges of reading comprehension in today's digital learning context.

Improving through Strategies, Early Interventions, and Teacher Support

The effective use of reading strategies plays a vital role in assisting learners, particularly those with limited working memory, to better navigate complex texts. As shown in (Joh, 2018), when students are trained to actively employ cognitive and metacognitive reading strategies, they can compensate for cognitive limitations and improve their comprehension outcomes even when faced with difficult reading materials. In addition to strategy use, early interventions have been shown to strengthen foundational literacy skills and broader cognitive abilities, especially for students at risk of learning disabilities (Martín-Ruiz and González-Valenzuela, 2024). Teacher support remains a cornerstone for student success. Teachers' roles extend beyond delivering content to providing emotional encouragement, modeling strategic reading behaviors, and adapting instruction to meet diverse student needs. (Ag-Ahmad et al., 2025) emphasize that when teachers are given adequate professional

development and autonomy to respond to students' challenges, students are more likely to thrive academically, even in demanding online environments.

Maximizing Technology and Better Learning Materials

In the context of online learning environments, maximizing the use of technology and providing better-designed learning materials are crucial strategies to support students in enhancing their reading comprehension skills. According to (Reiber-Kuijpers et al., 2021), digital reading environments provide learners with immediate access to diverse authentic materials, integrated tools, and nonlinear navigation options that can foster motivation, interaction, and comprehension. Similarly, (Rintaningrum, 2023) emphasizes that technological integration in English language teaching significantly enhances student engagement, encourages independent learning, and promotes collaborative learning experiences. Meanwhile, the quality of learning materials themselves plays a fundamental role. (Rice, 2018) points out that many online courses still rely on traditional text structures, which may not be sufficiently adapted to diverse learners' needs, especially students with reading difficulties.

Based on the analysis of 15 articles, there are four main challenges faced by students in improving reading comprehension in online classes. These four challenges include technological limitations, low student motivation and engagement, lack of interaction and feedback from teachers, and difficulties in using effective reading strategies.

The findings contained in the study (Zou et al., 2025) state that technological limitations are one of the obstacles. Students experienced problems with internet connection, limited electronic devices, and lack of understanding in using online learning platforms. This hinders students in accessing reading materials and adds to students' cognitive load so that students must adapt to digital media while understanding complex reading content.

Low student motivation and engagement was found in a study (Reiber-Kuijpers et al., 2021) which stated that it is a challenge in online reading learning. Students experience a decrease in learning enthusiasm due to no direct interaction with the teacher and class. Students feel unchallenged and unmotivated in doing reading assignments and completing them optimally because the assignments tend to be monotonous.

Students do not have the opportunity to discuss directly with the teacher or classmates. This results in difficulties in understanding the text, not getting direct guidance, thus hindering the student comprehension process. This is in accordance with the article (Molin et al., 2018) which states that there is a negative impact on students' reading skills caused by limited interaction and delays in providing feedback.

The lack of strategies from teachers makes it difficult for students to understand the text in depth. This is in line with research (Joh, 2018)which found that many students have not been trained in applying

effective reading strategies such as skimming, scanning, making inferences, or noting main ideas. These strategies are very helpful for students in online learning especially when students learn independently.

Thus, the challenges in improving reading comprehension skills in online classes are caused by technical aspects, pedagogical approaches and students' psychological conditions. A more interactive and student-centered learning approach is needed to motivate students. Students are encouraged to actively build knowledge through social interaction, reflection, and continuous guidance to make the reading comprehension process more effective.

Technology offers vast opportunities for students to access a wide range of authentic, engaging, and interactive texts. However, they also require students to develop additional skills such as critical evaluation, information management, and digital navigation strategies. Students can use tools, including online quizzes, multimedia resources, and digital libraries, to provide learners with continuous opportunities to practice reading, listening, and critical thinking skills beyond traditional classroom constraints.

Improvements in text cohesion, such as enhancing word concreteness and deep cohesion, can make materials more accessible and comprehensible, ensuring that learners of various proficiency levels can engage meaningfully with the content. Therefore, integrating advanced technological tools with thoughtfully designed, cohesive learning materials creates a dynamic and inclusive reading environment. It not only supports students' reading comprehension but also prepares them for the complex literacies required in today's digital world.

CONCLUSION

This study presents an in-depth overview of the obstacles students encounter in developing reading comprehension skills in online classrooms, especially within EFL/ESL learning contexts. Difficulties related to cognitive and linguistic factors, such as a limited vocabulary, complex grammar, and weak reading strategies, greatly impact students' ability to understand texts. Moreover, online learning platforms often do not promote critical thinking or meaningful interaction with reading materials.

Technical challenges, such as unstable internet connections, limited device access, and inadequate teacher training, further complicate the learning process. These are made worse by low motivation, minimal interaction between students and teachers, and the lack of timely feedback, all of which lead to reduced engagement and weaker reading outcomes in digital settings.

The study highlights the importance of using interactive, structured, and student-centered approaches. Key strategies include early support, active teacher involvement, implementation of effective reading methods, and the development of high-quality digital materials. By leveraging technology effectively while addressing its shortcomings students' reading comprehension in online environments can be significantly improved.

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In conclusion, to ensure successful reading instruction in digital education, educators and policymakers must adopt flexible, informed, and learner-oriented solutions that tackle these diverse and interconnected challenges.

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