

TEACHERS' SUPPORT IN DEVELOPING READING SKILLS: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

Background and Purpose: Teachers' support is essential for developing students' reading skills, which are crucial for academic success and lifelong learning. While many studies focus on reading education, there is a need for a systematic review of how teachers enhance students' reading skills. This study synthesizes research on teachers' interventions in reading development.

Methodology: This systematic review follows Reporting Standards for Systematic Evidence Syntheses (ROSES) guidelines. Research questions were framed using the Population, Intervention, Comparison, Outcome (PICO) framework. Systematic searches across Scopus, Web of Science, ERIC, and Science Direct targeted articles from 2019 to 2023. Eligible studies were appraised with the Mixed-Methods Appraisal Tool (MMAT). Thematic analysis, based on Braun and Clarke's framework, synthesized findings through familiarization, coding, theme identification, and reporting.

Findings: Analysis identified five main themes and 21 sub-themes: (1) Technology-Enhanced Reading Interventions, (2) Instructional Approaches for Reading Development, (3) Inclusive Education and Differentiated Instruction, (4) Home-School Collaboration in Reading Education, and (5) Assessment and Monitoring of Reading Progress. These themes highlight how teachers support reading development across diverse contexts.

Contributions: This review provides critical insights into effective strategies teachers can adopt to improve reading skills, contributing to educational research and policy development.

Keywords: Reading skills, teacher support, reading interventions, literacy development, systematic review.

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1.0 INTRODUCTION

Reading proficiency is a crucial skill that supports academic achievement, personal growth, and lifelong learning. As the foundation of education, a student's reading ability impacts their performance in all subjects and plays a vital role in their cognitive and social development (Custodio-Espinar & López-Hernández, 2023; Zhang et al., 2024). In recent years, the global education community has increasingly acknowledged the critical significance of early reading instruction and the necessity for effective strategies to help diverse learners build strong literacy skills. This acknowledgment has sparked a surge in research exploring various aspects of reading education, ranging from innovative instructional methods to the incorporation of technology in literacy programs.

The field of reading education is constantly evolving, influenced by advancements in cognitive science, educational technology, and teaching practices. Modern approaches to reading instruction stress the importance of well-rounded, balanced literacy programs that cover phonemic awareness, phonics, fluency, vocabulary, and comprehension (Archibald et al., 2023; Grasparil & Hernandez, 2015). Additionally, there is a growing recognition of the importance of tailoring reading instruction to meet the diverse needs of students, including those with learning disabilities, English language learners, and individuals from different socioeconomic backgrounds. This shift towards more inclusive and personalized instruction has prompted educators and researchers to explore a wide array of strategies and interventions aimed at supporting reading development across diverse student populations.

The role of teachers in cultivating reading skills cannot be overstated. Effective reading instruction demands not just a deep understanding of literacy development but also the ability to implement evidence-based practices, customize instruction to individual student needs, and create a supportive learning environment (Gayratbek & Yuldashev, 2023; Syafira

& Dafit, 2022). Teacher training and continuous professional development are key in equipping educators with the knowledge and skills required to effectively support students' reading progress (Emilia et al., 2022; Tiba, 2023). Moreover, collaboration among teachers, parents, and other stakeholders is recognized as a vital factor in promoting literacy development, especially for struggling readers and students from underprivileged backgrounds (Ainin & Asafri, 2023).

Assessment and monitoring of reading progress are integral parts of effective literacy instruction (Yan & Chiu, 2023). Continuous assessment enables teachers to identify students' strengths and weaknesses, track their development over time, and adjust instruction accordingly. The development of more advanced assessment tools, including digital platforms that offer real-time feedback, has improved educators' capacity to monitor student progress and tailor instruction to individual needs (Bogaert et al., 2023). Nevertheless, the challenge remains in ensuring that assessment practices are thorough, culturally sensitive, and aligned with instructional objectives.

Despite extensive research on reading education, there are still gaps in our understanding, particularly regarding teachers' support in fostering reading skills (Jakobson et al., 2022). One critical gap lies in the limited exploration of how teachers implement various strategies, including the integration of technology and traditional methods, to address the diverse needs of learners. While some studies have examined the potential of digital tools for reading development, there is a need for more in-depth research into how teachers effectively create inclusive and engaging learning environments that enhance students' reading skills (Diprossimo et al., 2023; Erni et al., 2023; Tatar & Gerde, 2023). Understanding these aspects is crucial for addressing the challenges of fostering literacy in increasingly diverse and dynamic educational settings.

In light of these gaps, this study seeks to address the overarching question “how do teachers support the development of reading skills across diverse educational contexts?” The primary objective of this research is “to explore how teachers support the development of reading skills through their strategies and interventions”, providing a comprehensive understanding of effective practices in varied educational environments. This focus will contribute to bridging the knowledge gaps in teacher-led reading support and offer insights into strategies that can be applied in diverse, technology-rich, and inclusive classrooms.

2.0 METHODOLOGY

2.1 Review Protocol – ROSES

The systematic literature review (SLR) adheres to the ROSES (Reporting Standards for Systematic Evidence Syntheses) guidelines developed by Haddaway et al. (2018). These guidelines aim to improve SLRs' transparency, quality control, and adaptability to different research contexts. The SLR process began with research question formulation using the PICO method (Problem/Population, Interest, and Context). The review proceeded through systematic phases of identification, screening, and eligibility. Quality appraisal, guided by Hong et al. (2018), preceded the selection of articles. Data extraction was aligned with the primary research question, and thematic synthesis was used for qualitative data analysis. Alternative suggestions were considered to ensure alignment with study objectives.

2.2 Formulation of the Research Question

The research question was formulated from two sources. First, insights from previous studies by Wang and Hu (2022), Tang et al. (2019), and Syukri and Karmini (2022) focused on how teachers support reading skills. Second, the PICO method (Problem, Intervention, Control, Outcome) was used (Nishikawa-Pacher, 2022). The problem is the deficiency in reading skills among students, the intervention is teachers' support, the control involves the diverse approaches used by teachers, and the expected outcome is the improvement of reading skills. Based on this, the main research question is “how do teachers support the development of reading skills across diverse educational contexts?”

2.3 Systematic Searching Strategies

The systematic searching strategy involved identification, screening, and eligibility phases (Wang et al., 2024; Dew et al., 2021). This strategy helped in efficiently locating and synthesizing relevant studies, ensuring a structured and transparent SLR process.

2.3.1 Identification

Three main keywords—teacher, support, and reading skills—were identified. To enrich the search, synonyms and related terms were derived using [thesaurus.com](https://www.thesaurus.com). These keywords were then combined using search functions like Boolean operators and field code functions across Scopus and Web of Science databases (see Table 1). Manual search techniques such as 'handpicking' were also employed. Additional searches were conducted in ERIC and Science Direct, identifying 1,191 potential articles during this phase.

Table 1: Search string used in the selected database

Database	Key Terms
Scopus	TITLE-ABS-KEY (("teacher* support" OR "teacher* role" OR "teacher* intervention*" OR "teacher* assistance") AND ("reading skill*" OR "reading development" OR "reading comprehension" OR "literacy development" OR "early literacy") AND ("student*" OR "pupil*" OR "learner*" OR "children"))
WoS	TS=(("teacher* support" OR "teacher* role" OR "teacher* intervention*" OR "teacher* assistance") AND ("reading skill*" OR "reading development" OR "reading comprehension" OR "literacy development" OR "early literacy") AND ("student*" OR "pupil*" OR "learner*" OR "children"))

2.3.2 Screening Summary

The second step in the systematic searching strategy is screening, where specific inclusion and exclusion criteria are applied to potential articles. This phase aims to identify content that is aligned with the research questions, such as teacher support in reading skills. Duplicate papers are removed with assistance from the database. In the initial screening, 894 publications were excluded, leaving 297 articles to be further assessed based on detailed inclusion and exclusion criteria (see Table 2). The primary criterion was the focus on literature offering practical recommendations, specifically research papers. The review was limited to English-language publications from 2019 to 2023. After removing 60 duplicate articles from different databases, the final selection proceeded.

Table 2: Inclusion and exclusion criteria

Criterion	Inclusion	Exclusion
Language	English	Non-English
Time line	2019 - 2023	< 2019 and >2023
Literature type	Journal (Article)	Conference, Book, Review
Subject Area	Education and Social Sciences	Besides Education and Social Sciences

2.3.3 Eligibility

In the third procedure, the authors conducted a thorough assessment of multiple articles to determine their eligibility for inclusion based on pre-established criteria. This involved a precise examination of the title, abstract, and contents of the articles. The title screening phase resulted in the exclusion of 132 papers, while 56 more were excluded during the abstract screening stage. After the authors read the content of selected articles, ten more were removed, leaving 39 papers that met the inclusion criteria. The excluded papers did not meet the specific focus on teacher support and reading skills or were in the form of a review paper. The details of this assessment can be found in Figure 1.

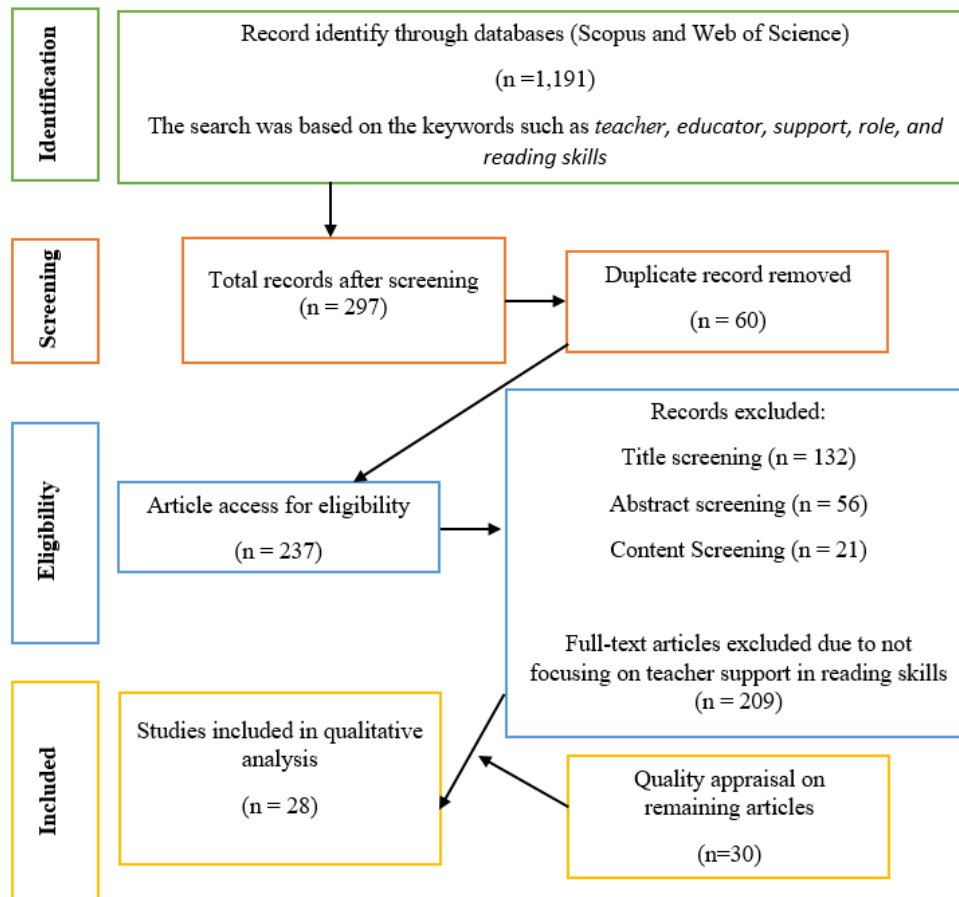


Figure 1: Flow diagram of the study

2.4 Quality Appraisal

The study underwent a quality assessment phase to ensure the methodology and analysis of the selected studies were sufficiently robust. The Mixed-Method Appraisal Tool (MMAT) by Hong et al. (2018) was employed to evaluate the systematic review of mixed studies, covering five types: qualitative, randomized controlled trials, non-randomized studies, quantitative descriptive, and mixed methods. Two screening processes were conducted before the quality evaluation, after which the selected articles were assessed using five main criteria. For qualitative studies, criteria included the appropriateness of research questions and data coherence. In quantitative research, factors like sampling strategy relevance and measurement suitability were considered, while mixed-method studies were evaluated on aspects such as design integration and rationale for mixed methods. The corresponding author, along with two co-authors, reviewed the methodology and analysis sections, using the MMAT to ensure consistency in sampling and analysis. Articles were rated based on five criteria with responses of "yes," "no," and "don't know/can't tell," with inclusion for those meeting at least three criteria. Any disagreements were resolved through discussion, and all authors agreed that the

articles met the minimum quality standards. In total, three articles met all criteria, 17 met at least four, and eight met at least three (Table 4).

2.5 Data Extraction and Analysis Summary

The review utilized a thematic analysis to explore effective methods for integrating diverse research designs through qualitative synthesis (Whittemore & Knafl, 2005). Following the methodology proposed by Flemming et al. (2019), a thematic synthesis was chosen for its flexibility in combining data from various research designs. Thematic analysis, which identifies patterns and relationships within the data, was employed (Braun & Clarke, 2021) and guided by the steps from Kiger and Varpio (2020). Researchers first immersed themselves in the dataset through repeated readings to gain a comprehensive understanding. Subsequently, initial codes were created to organize the data, focusing on extracting information relevant to the main research question. Using inductive coding frameworks, themes were developed by identifying commonalities within the coded data (Braun & Clarke, 2019).

Five main themes were identified, with each containing more than three sub-themes. During the review, some themes, such as "information seeking and sharing" and "experience sharing," were consolidated into a single theme. As a result, there were five main themes and 21 sub-themes in total. The themes were validated by two experts in qualitative synthesis and community development, confirming their relevance to the research questions.

Additionally, Table 3 outlines the criteria used to assess the methodological rigor of the studies, following the framework by Hong et al. (2018), ensuring a systematic evaluation across qualitative, quantitative descriptive, quantitative non-randomized, and mixed methods studies.

Table 3: Quality Assessment (QA) criteria for different research designs (Hong et al., 2018)

Research Design	Quality Assessment Criteria
Qualitative (QL)	QA1: Appropriateness of qualitative approach for the research question
	QA2: Adequacy of qualitative data collection methods
	QA3: Proper derivation of findings from data
	QA4: Sufficient substantiation of result interpretation by data
	QA5: Coherence among qualitative data sources, collection, analysis, and interpretation
Quantitative Descriptive (QN-DC)	QA1: Relevance of sampling strategy to research question
	QA2: Representativeness of sample for target population
	QA3: Appropriateness of measurements
	QA4: Low risk of nonresponse bias
	QA5: Suitability of statistical analysis for research question
Quantitative Non-randomized (QN-NR)	QA1: Representativeness of participants for target population
	QA2: Appropriateness of outcome and intervention/exposure measurements
	QA3: Completeness of outcome data
	QA4: Consideration of confounders in design and analysis
	QA5: Proper administration of intervention/occurrence of exposure during study
Mixed Methods (MX)	QA1: Adequate justification for mixed methods design
	QA2: Effective integration of study components to address research question
	QA3: Appropriate interpretation of integrated qualitative and quantitative results
	QA4: Adequate addressing of divergences between quantitative and qualitative results
	QA5: Adherence of each component to quality criteria of respective methodological traditions

Table 4: Findings from the quality evaluation

No.	Authors	Year	Research Design	QA1	QA2	QA3	QA4	QA5	Total QA Score
1.	Dimitrellou et al.	2023	QN (NR)	√	√	√	√	√	4/5
2.	Imbaquingo & Cárdenas	2023	MX	√	√	√	√	C	3/5
3.	Tarjiah et al.	2023	QL	√	√	X	√	√	4/5
4.	Vasalou et al.	2022	QL	√	√	√	√	X	4/5
5.	Pogorzelski et al.	2021	QN (DC)	√	√	√	√	C	3/5
6.	Salgarayeva et al.	2021	QN (NR)	C	√	√	√	√	4/5
7.	Keskin	2023	MX	√	X	√	√	C	3/5
8.	Oerke et al.	2019	QN (NR)	√	√	√	√	C	4/5
9.	Koutsouris et al.	2021	MX	√	√	√	√	C	4/5
10.	Varghese et al.	2021	QN (NR)	√	√	√	√	C	4/5
11.	Ronimus et al.	2019	QN (NR)	√	√	√	√	C	4/5
12.	Zarkasyi et al.	2022	MX	√	X	√	√	X	3/5
13.	Ruotsalainen et al.	2022	QN (NR)	√	√	√	√	C	4/5
14.	Kao & Mzimela	2019	QL	√	C	√	√	C	3/5
15.	Iswara et al.	2023	MX	√	√	C	√	C	3/5
16.	Guzmán et al.	2021	QN (NR)	√	√	√	√	√	5/5
17.	Serra & Gilabert	2021	QN (NR)	√	√	√	√	C	4/5
18.	Potocki et al.	2023	QN (NR)	√	√	√	√	C	4/5
19.	Nilvius & Svensson	2022	QN (NR)	√	√	√	√	C	4/5
20.	Tang et al.	2022	QN (NR)	√	√	√	√	C	4/5
21.	Goldfeld et al.	2022	QN (NR)	√	√	√	√	Y	5/5
22.	La Serna	2022	QL	√	√	√	√	C	3/5
23.	Guo et al.	2021	QN (NR)	√	√	√	√	√	5/5
24.	Kirnan et al.	2020	MX	√	C	√	√	X	3/5
25.	Salmerón et al.	2023	QN (DC)	√	√	X	√	√	4/5
26.	Dunn et al.	2023	QN (NR)	√	√	C	√	√	4/5
27.	Özer Şanal & Erdem	2023	QN (NR)	√	√	√	√	C	4/5
28.	Liswaniso	2023	QN (NR)	√	√	√	X	√	4/5

Key for Quality Assessment (QA) criteria; QA1= Clear research question/objective; QA2=Appropriate methodology; QA3= Relevant data collection; QA4= Rigorous analysis; QA5=Clear findings/conclusions; Y = Yes, criteria met; C = Can't tell from the abstract

3.0 ANALYSIS

3.1 Background of the Selected Studies

The selected studies span a wide range of countries and educational contexts, representing 23 distinct locations as shown in Figure 2 below. Specifically, 3 studies were conducted in the United States, 3 in United Kingdom, 3 in Indonesia, 3 in Finland, 2 in Australia, 2 in Turkey, and 1 study each in Ecuador, Kazakhstan, Germany, Haiti, Estonia, Spain, France, Sweden, China, Lesotho, Namibia, and Canada. This geographical diversity highlights the global reach of reading education research and the variety of educational settings examined.

The analysis of the 28 selected studies on reading education research reveals a wide array of methodological approaches, with a strong emphasis on quantitative methods. Quantitative research was the dominant approach, employed in 15 studies, illustrating its prominence in this field. In contrast, qualitative methods were employed in 6 studies, offering detailed, context-specific insights. Other studies, examined innovative interventions like dog-assisted reading programs and collaborative storybook approaches. Three studies utilized mixed-methods designs, integrating both quantitative and qualitative data to address complex educational issues. Lastly, four studies employed unique research designs. Zarkasyi et al. (2022) utilized a Research and Development (R&D) approach to develop Arabic reading aids, while Iswara et al. (2023) used the 4D Design Model for developing Android-based reading media. Serra and Gilabert (2021) applied a pre/post-test comparison design to evaluate digital serious games, and Pogorzelski et al. (2021) conducted a survey to investigate teachers' use of texts for beginning readers. This diverse methodological landscape highlights the flexibility and breadth of research approaches in the field of reading education, underscoring the importance of both quantitative rigor and qualitative depth in understanding and enhancing reading instruction.

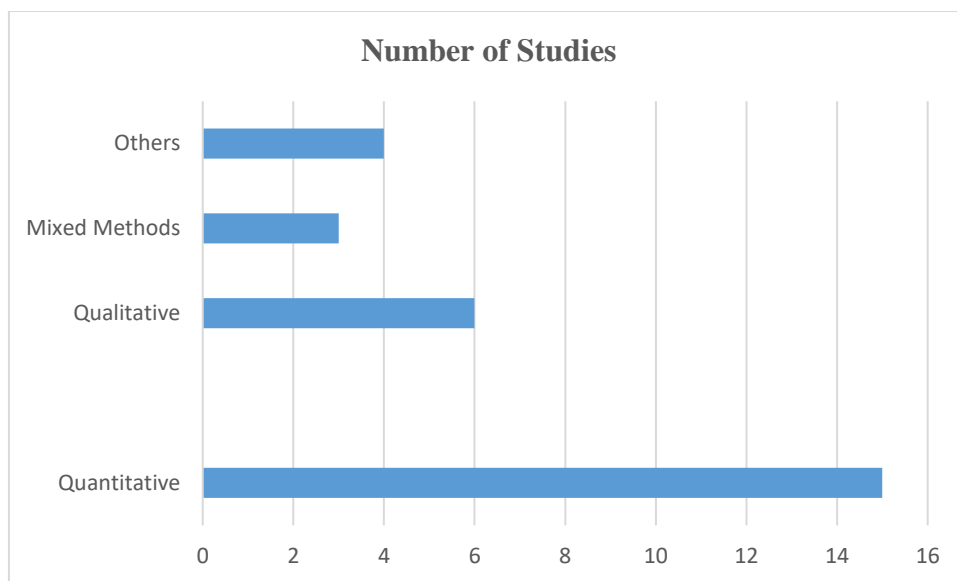


Figure 2: Design of research studies

The analysis of the selected studies, spanning from 2019 to 2023, reveals an increasing trend in reading education research. In 2019, three studies were published, followed by a single study in 2020. Research activity increased in 2021 with six studies and continued to rise in 2022 with seven studies. The majority of studies were published in 2023, accounting for 11 studies. This distribution highlights a growing interest in reading education, with a notable surge in publications during 2023.

The selected studies were published across journals in various quartiles (WoS Quartile), with the majority appearing in Q1 journals. Specifically, 17 studies were published in Q1 journals, 4 studies in Q2 journals, and 4 studies in Q3 journals. Additionally, 3 studies were published in journals indexed in Web of Science but not yet assigned a quartile. This distribution indicates a strong representation of high-impact journals (Q1) in the field of reading education research.

3.2 The Established Themes

The thematic analysis was undertaken on 28 selected articles resulted in five main themes: (1) Technology-Enhanced Reading Interventions, (2) Instructional Approaches for Reading Development, (3) Inclusive Education and Differentiated Instruction, (4) Home-School Collaboration in Reading Education, and (5) Assessment and Monitoring of Reading Progress. These five themes further produced 21 sub-themes: Digital Game-based Learning (DGL), Computer-Assisted Instruction (CAI), Online and Mobile Applications (OMA), Virtual Learning Environments (VLE), Project-Based Learning (PBL), Multisensory Methods

(MSM), Direct Instruction Strategies (DIS), Response To Intervention (RTI), Classroom Oral Language (COL), Supporting Visual Impairments (SVI), Reading Difficulties in Mainstream (RDM), Tailoring for Diverse Learners (TDL), English Language Learners (ELL), Parental Involvement in Reading (PIR), Teacher-Mediated Interventions (TMI), Home Literacy Environment (HLE), Collaborative Parent-Educator approaches (CPE), Longitudinal Skill Development (LSD), Evaluating Intervention Effectiveness (EIE), Identifying At-Risk readers (IAR), and Cross-Cultural Comparisons (CCC). Based on the results, these five themes and 21 sub-themes provided answers to the main research question of this SLR (refer to Table 5), “how do teachers support the development of reading skills across diverse educational contexts?” The background of the selected studies is explained in the following section.

Table 5: Selection of top-tier journals with rankings

Authors/ Theme	Technology-Enhanced Reading Interventions				Instructional Approaches for Reading Development					Inclusive Education and Differentiated Instruction					Home-School Collaboration in Reading Education				Assessment and Monitoring of Reading Progress		
	DGL	CAI	OMA	VLE	PBL	MSM	DIS	RTI	COL	SVI	RDM	TDL	ELL	PIR	TMI	HLE	CPE	LSD	EIE	IAR	CCC
Dimitrellou et al. (2023)		✓	✓	✓							✓				✓				✓	✓	
Imbaquingo & Cárdenas (2023)					✓								✓							✓	
Tarjiah et al. (2023)						✓	✓				✓			✓		✓	✓			✓	
Vasalou et al. (2022)		✓										✓									✓
Pogorzelski et al. (2021)							✓				✓										✓
Salgarayeva et al. (2021)	✓		✓									✓									✓
Keskin (2023)			✓				✓						✓								✓
Oerke et al. (2019)							✓														✓
Koutsouris et al. (2021)							✓	✓			✓										✓
Varghese et al. (2021)							✓				✓				✓					✓	✓

Ronimus et al. (2019)	✓		✓		✓		✓	✓
Zarkasyi et al. (2022)		✓			✓			✓
Ruotsalainen et al. (2022)			✓		✓			✓
Kao & Mzimela (2019)				✓	✓			
Iswara et al. (2023)		✓					✓	✓
Guzmán et al. (2021)			✓		✓			✓
Serra & Gilabert (2021)	✓	✓			✓			✓
Potocki et al. (2023)			✓				✓	✓
Nilvius & Svensson (2022)			✓		✓			✓
Tang et al. (2022)			✓					✓
Goldfeld et al. (2022)				✓			✓	✓
La Serna (2022)			✓		✓	✓		

Guo et al. (2021)				✓	✓	✓			✓	✓
Kirnan et al. (2020)				✓	✓				✓	
Salmerón et al. (2023)	✓	✓							✓	✓
Dunn et al. (2023)			✓		✓		✓	✓	✓	✓
Özer Şanal & Erdem (2023)	✓				✓				✓	✓
Liswaniso (2023)					✓					

4.0 DISCUSSION

4.1 Technology-Enhanced Reading Interventions

The theme of Technology-Enhanced Reading Interventions highlights the growing integration of digital tools in literacy education to address diverse learner needs. This theme is explored through four sub-themes; Digital Game-Based Learning, Computer-Assisted Instruction, Online and Mobile Applications, and Virtual Learning Environments. Each sub-theme provides unique insights into how educators enhance reading skills across varied educational contexts.

4.1.1 Digital Game-Based Learning

Digital game-based learning (DGL) is an effective instructional strategy that enhances engagement and personalized learning. Studies have shown its success in improving phonemic awareness and fluency using tools like GraphoLearn (Dimitrellou et al., 2023; Ronimus et al., 2019). It supports differentiated learning experiences (Salgarayeva et al., 2021; Serra & Gilabert, 2021) but also poses challenges such as cognitive overload from excessive screen time (Salmerón et al., 2023) and the need for culturally relevant content to sustain engagement (Özer Şanal & Erdem, 2023).

Despite bridging traditional and modern instructional practices, DGL faces scalability issues due to limited access to technology in under-resourced schools and insufficient teacher training (Clark et al., 2016). To address these barriers, educators require targeted training, policymakers should subsidize access to DGL tools, and developers must design culturally inclusive games for diverse learners (Kucirkova et al., 2021; Gee, 2003). Integrating DGL into blended learning models can amplify its benefits while mitigating challenges like excessive screen use

4.1.2 Computer-Assisted Instruction

Computer-assisted instruction (CAI) utilizes digital platforms to deliver adaptive reading interventions, improving comprehension and vocabulary acquisition through multisensory approaches (Dimitrellou et al., 2023; Vasalou et al., 2022). By tailoring content to learners' proficiency levels, CAI enhances instructional value (Serra & Gilabert, 2021). However, its lack of cultural adaptability limits effectiveness in multilingual settings (Salmerón et al., 2023).

Although CAI provides personalized feedback, its scalability is hindered by the digital divide in underprivileged regions (Warschauer, 2004). Effective integration requires teacher training to balance individual and collaborative learning (Vygotsky, 1978). Policymakers must

invest in infrastructure for low-resource contexts, while developers should prioritize culturally responsive tools that address linguistic diversity (Selwyn, 2021). Combining CAI with complementary tools, such as mobile applications, offers a comprehensive approach to literacy development.

4.1.3 Online and Mobile Applications

Online and mobile applications (OMA) offer flexible and accessible tools to enhance reading development, particularly in vocabulary and fluency (Keskin, 2023; Zarkasyi et al., 2022). Their potential for self-paced and individualized learning is well-documented (Dimitrellou et al., 2023; Iswara et al., 2023). However, concerns over data privacy (Salgarayeva et al., 2021) and the over-commercialization of educational apps (Keskin, 2023) present significant challenges.

While OMAs provide personalized learning opportunities, their effectiveness is often limited by misalignment with curricular goals (Kucirkova et al., 2021; Livingstone & Sefton-Green, 2016). Addressing these challenges requires robust regulatory frameworks to ensure data privacy and app quality (Selwyn, 2021). Teachers can enhance the impact of OMAs by integrating them into structured lesson plans and leveraging analytics to monitor progress. Collaboration between developers and educators is essential for creating tools that are pedagogically sound and responsive to diverse learner needs.

4.1.4 Virtual Learning Environments

Virtual learning environments (VLE) provide immersive and collaborative platforms that enhance literacy instruction by fostering community engagement and accommodating diverse learning preferences (Dunn et al., 2023; Dimitrellou et al., 2023). These environments unify digital tools to support personalized and collaborative learning. However, their implementation faces challenges such as technical issues and unequal access to internet resources, particularly in marginalized communities (Warschauer, 2004).

Overcoming these barriers requires systemic investments in digital equity, including infrastructure expansion through public-private partnerships (Livingstone & Sefton-Green, 2016). Teachers can optimize VLEs by fostering peer-to-peer learning, which enhances comprehension and engagement (Mercer & Hodgkinson, 2008). Additionally, professional development programs are critical to equipping educators with the technical skills needed for effective integration of VLEs into their practices.

4.2 Instructional Approaches for Reading Development

The theme of Instructional Approaches for Reading Development underscores the critical role of diverse pedagogical strategies in fostering students' reading skills across various educational contexts. The findings are categorized into five sub-themes; Project-Based Learning, Multisensory Methods, Direct Instruction Strategies, Response to Intervention, and Classroom Oral Language. Each subtheme presents unique perspectives on effective literacy development approaches.

4.2.1 Project-Based Learning

Project-based learning (PBL) incorporates real-world challenges into literacy instruction, fostering critical thinking, collaboration, and reading comprehension through meaningful, contextualized tasks (Imbaquingo & Cárdenas, 2023). While PBL enhances student engagement and develops problem-solving skills, its success depends on adequate resources, teacher training, and well-defined learning objectives (Condliffe et al., 2017; Benini & Thomas, 2021).

However, resource limitations and insufficient preparation, particularly in underserved communities, hinder its scalability. Addressing these challenges requires professional development programs to equip educators with the skills to design and implement PBL activities aligned with literacy goals. Policymakers should prioritize funding for resource-constrained schools, and collaborations with community organizations can enhance PBL's relevance and impact (Krajcik & Shin, 2020).

4.2.2 Multisensory Methods

Multisensory methods (MSM) enhance literacy instruction by engaging visual, auditory, and kinaesthetic modalities, effectively supporting phonemic awareness and decoding, especially for students with reading difficulties (Tarjiah et al., 2023). By accommodating diverse learning styles, MSM promotes engagement and inclusivity. However, successful implementation depends on specialized resources and teacher training.

Integrating MSM with evidence-based practices like Direct Instruction can enhance its impact, but the limited research on its long-term efficacy across diverse educational settings reveals a critical gap (Birsh & Carreker, 2021; Newman, 2019). To fully realize MSM's potential, teacher training should emphasize practical integration strategies, and policymakers must fund the development of resources suited to multilingual and multicultural classrooms.

Expanding research on MSM's applications in varied contexts is essential to support inclusive and effective literacy practices.

4.2.3 Direct Instruction Strategies

Direct instruction strategies (DIS), characterized by structured, teacher-led approaches, are highly effective in developing foundational reading skills such as phonics, vocabulary, and comprehension, particularly in early-grade literacy and remedial programs (Tarjiah et al., 2023; Pogorzelski et al., 2021; Keskin, 2023). However, its rigidity has been criticized for potentially limiting student autonomy and creativity.

Integrating DIS with inquiry-based and collaborative methods can address these limitations, creating a more balanced learning experience (Archer & Hughes, 2020; Stockard et al., 2018). The cultural and linguistic relevance of instructional materials also plays a crucial role in DIS's effectiveness, particularly in diverse classrooms. To optimize its impact, professional development should prepare educators to blend DIS with interactive, student-centered approaches. Policymakers must prioritize the creation of culturally inclusive materials and explore technological integration to enhance the adaptability and scalability of DIS in varied educational settings.

4.2.4 Response to Intervention

Response to Intervention (RTI) is a tiered framework that provides targeted support based on students' progress, demonstrating effectiveness in identifying and addressing reading difficulties at an early stage (Koutsouris et al., 2021; Nilvius & Svensson, 2022). Its adaptability enables it to address diverse literacy needs, but its success depends on consistent monitoring and data-driven decision-making.

Significant barriers include resource constraints, insufficient teacher training, and inadequate assessment tools, particularly in underprivileged schools (Fuchs et al., 2017). Addressing these challenges requires investments in accessible assessment tools and professional development. Collaboration between educators and families is also critical, ensuring continuous support for students across school and home settings (Paccaud et al., 2021).

4.2.5 Classroom Oral Language

Classroom oral language (COL) utilizes verbal interactions, such as structured discussions and storytelling, to develop vocabulary, narrative skills, and critical thinking, providing a strong

foundation for literacy development (Goldfeld et al., 2022). Dialogic teaching has proven effective in enhancing comprehension and critical thinking (Mercer & Howe, 2012), but its implementation is often constrained by large class sizes and limited teacher expertise.

To optimize COL, educators require training in dialogic strategies to facilitate meaningful interactions. Curricula should also be adapted to prioritize time for oral language activities. Furthermore, reducing class sizes and examining COL's impact in diverse linguistic and cultural contexts can support more inclusive literacy practices.

4.3 Inclusive Education and Differentiated Instruction

The theme of Inclusive Education and Differentiated Instruction highlights the critical importance of tailoring teaching practices to meet the diverse needs of learners. This theme is examined through four sub-themes; Supporting Visual Impairments, Reading Difficulties in Mainstream, Tailoring for Diverse Learners, and English Language Learners. Each subtheme provides insights into teaching strategies, policy implications, and areas for further research, supported by recent studies.

4.3.1 Supporting Visual Impairments

Supporting students with visual impairments requires adaptive strategies, including tactile materials, auditory resources, and assistive technologies, to ensure equitable access to literacy and foster learner independence (Kao & Mzimela, 2019). Although effective, these approaches encounter significant barriers, including insufficient funding, inefficient resource management, a shortage of qualified educators, and a lack of adequate teaching materials (Ramatea & Khanare, 2021).

Overcoming these challenges requires sustained investment in assistive technologies and specialized professional development for educators. Collaboration between policymakers and NGOs is essential to expand access (Corn & Erin, 1996), while developers should prioritize creating affordable, culturally relevant tools to address the diverse needs of visually impaired learners (Rao & Skouge, 2015).

4.3.2 Reading Difficulties in Mainstream

Mainstream classrooms often accommodate students with diverse reading abilities, necessitating differentiated instruction and targeted interventions to support struggling readers effectively (Dimitrellou et al., 2023; Tarjiah et al., 2023). However, overcrowded classrooms

and insufficient teacher training frequently impede the successful implementation of differentiation strategies.

Moeller and Seeskin (2020) noted that educators often lack the resources and expertise to apply data-driven approaches, while Nilvius and Svensson (2022) highlighted the potential of digital assessment tools for monitoring progress and adapting instruction. Addressing these challenges requires investing in adaptive technologies and professional development to equip teachers for managing differentiated classrooms and integrating technology. Reducing class sizes is also critical to ensure individualized support for students requiring interventions.

4.3.3 Tailoring for Diverse Learners

Tailoring instruction to the needs of diverse learners underscores the importance of inclusivity in addressing cultural, linguistic, and learning differences. Research shows that culturally responsive teaching practices and multimodal resources effectively support diverse student populations (Vasalou et al., 2022; Pogorzelski et al., 2021). However, inadequate representation of diverse cultures in curricula and teaching materials, along with implicit biases among educators, often limits the inclusivity of these practices (Ladson-Billings, 2021; Gay, 2020).

To address these challenges, policymakers should prioritize revising curricula to reflect diverse cultural contexts and invest in inclusive teaching resources. Teacher training programs must emphasize identifying and mitigating biases while promoting culturally responsive strategies. Collaborations between schools and local communities can further enrich literacy activities by ensuring cultural relevance and alignment with students' lived experiences.

4.3.4 English Language Learners

English language learners (ELL) benefit from targeted strategies such as scaffolding, visual aids, and peer-assisted learning, which effectively enhance reading comprehension (Imbaquingo & Cárdenas, 2023; Keskin, 2023). However, systemic challenges, including limited access to bilingual resources and insufficient teacher training in second-language instruction, often impede progress.

Gonzales and Tejero Hughes (2021) highlighted the importance of leveraging students' native languages to support English literacy acquisition, but resource constraints frequently hinder the implementation of bilingual programs, exacerbating literacy inequities. To address these barriers, investments in bilingual instructional materials and professional development are essential to equip educators with second-language teaching skills (Linares, 2024). Schools

can further support linguistic diversity through peer-assisted learning and multicultural literacy initiatives. Additionally, developers should prioritize creating accessible and affordable digital tools to enhance bilingual learning in underserved communities.

4.4 Home-School Collaboration in Reading Education

The theme of Home-School Collaboration in Reading Education underscores the pivotal role of partnerships between teachers, parents, and caregivers in fostering children's reading development. This theme is analyzed through four sub-themes; Parental Involvement in Reading, Teacher-Mediated Interventions, Home Literacy Environment, and Collaborative Parent-Educator Approaches. Each subtheme highlights the multifaceted strategies and partnerships essential to improving reading outcomes across diverse educational contexts.

4.4.1 Parental Involvement in Reading

Parental involvement is crucial for early literacy development, with shared reading activities and home-based literacy practices significantly improving vocabulary acquisition and comprehension (Tarjiah et al., 2023; Dunn et al., 2023). However, barriers such as limited parental time, low literacy levels, and socioeconomic disparities often impede effective engagement.

Tailored parent education programs are essential to address these challenges, equipping parents with the skills and resources needed to support their children's learning (Fan & Williams, 2020). Variability in parental engagement across cultural contexts highlights the need for adaptable strategies (Boonk et al., 2018). Schools should offer structured training for parents and subsidized programs to mitigate socioeconomic barriers. Collaboration with community organizations is also critical to sustaining parental involvement in literacy education.

4.4.2 Teacher-Mediated Interventions

Teacher-mediated interventions serve as a vital link between home and school, equipping parents with tools to support structured reading activities and ensuring consistency in literacy instruction across contexts (Dimitrellou et al., 2023; Potocki et al., 2023; Varghese et al., 2021). Their effectiveness, however, relies on teachers' ability to engage parents and provide sustained guidance.

Professional development programs focused on family engagement are essential to strengthen educators' skills in this area (Desimone, 2019). Limited communication between

parents and teachers further reduces the impact of these interventions, underscoring the need for dedicated communication platforms to facilitate meaningful interactions (Ronimus et al., 2019). Investing in teacher training and establishing robust communication systems can enhance the success of teacher-mediated interventions. Additionally, longitudinal studies are needed to assess their long-term impact on literacy outcomes in diverse educational settings.

4.4.3 Home Literacy Environment

The home literacy environment (HLE) plays a critical role in fostering children's reading development. Access to books, parental modeling, and a positive literacy atmosphere significantly enhance early literacy skills and motivation (Tarjiah et al., 2023; Guo et al., 2021; Iswara et al., 2023). However, socioeconomic disparities and limited parental awareness often hinder the creation of enriched HLEs, particularly in underprivileged settings where access to books and digital resources is scarce (Ebert et al., 2020).

Cultural differences in parental attitudes toward literacy further impact the effectiveness of HLE interventions (Niklas et al., 2020). Addressing these challenges requires targeted initiatives to distribute reading materials and digital tools in underserved communities. Schools can support parents through literacy workshops focused on practical strategies, while partnerships with libraries and local organizations can expand access to resources, reducing disparities in the HLE.

4.4.4 Collaborative Parent-Educator Approaches

Collaborative parent-educator (CPE) approaches, which align home and school literacy practices, significantly improve children's reading outcomes by fostering mutual accountability and shared goals between parents and teachers (Goldfeld et al., 2022; Dunn et al., 2023; Özer Şanal & Erdem, 2023). However, these partnerships often encounter challenges, including cultural mismatches, differing expectations, and limited opportunities for joint planning (Epstein et al., 2018; Tarjiah et al., 2023).

To address these issues, structured frameworks for regular meetings and shared goal-setting should be implemented, supported by funding to facilitate dedicated collaboration time. Teacher training programs must emphasize strategies for navigating cultural differences and building trust with families, ensuring the scalability and sustainability of CPE models.

4.5 Assessment and Monitoring of Reading Progress

The theme of Assessment and Monitoring of Reading Progress emphasizes the pivotal role of systematically tracking students' reading development to inform instruction, identify gaps, and evaluate the effectiveness of interventions. This theme is explored through four sub-themes; Longitudinal Skill Development, Evaluating Intervention Effectiveness, Identifying At-Risk Readers, and Cross-Cultural Comparisons. Each subtheme underscores the importance of evidence-based practices in enhancing reading outcomes across diverse educational settings.

4.5.1 Longitudinal Skill Development

Longitudinal skill development is critical for tracking students' reading progress over time, providing valuable insights into literacy growth patterns and areas requiring support (Ruotsalainen et al., 2022; Tang et al., 2022). Ongoing assessments enable tailored instruction to address individual learning needs (Salmerón et al., 2023; Dunn et al., 2023), but challenges such as inconsistent data collection and resource constraints hinder their effectiveness.

Variability in assessment tools and the absence of standardized frameworks limit comparability and scalability across educational contexts (Miciak & Fletcher, 2019). To overcome these challenges, standardized assessment frameworks should be developed, and digital tools adopted for efficient data collection and analysis. Professional development programs must equip educators to interpret and apply longitudinal data in instructional planning. Collaboration between researchers and practitioners can further enhance monitoring systems, ensuring their reliability and scalability.

4.5.2 Evaluating Intervention Effectiveness

Evaluating the effectiveness of reading interventions is essential for optimizing instructional strategies and improving literacy outcomes. Rigorous evaluation methods identify impactful practices for diverse learners (Dimitrellou et al., 2023; Imbaquingo & Cárdenas, 2023) and enable data-driven refinements to interventions (Pogorzelski et al., 2021; Keskin, 2023).

However, the lack of culturally responsive assessment tools and inadequate teacher training in data interpretation often limits these efforts (Fletcher et al., 2020). To address these challenges, assessment systems must account for cultural and contextual variables, and research investments should focus on scaling evidence-based interventions for diverse settings. Professional development programs should prioritize equipping educators with data analytics skills to enhance instructional planning. Collaborative research initiatives must also emphasize adaptable intervention models for underrepresented populations.

4.5.3 Identifying at-Risk Readers

The early identification of at-risk readers is crucial for implementing timely interventions and preventing long-term academic challenges. Predictive assessment tools and targeted screenings have demonstrated effectiveness in improving literacy outcomes for vulnerable populations (Dimitrellou et al., 2023; Varghese et al., 2021; Nilvius & Svensson, 2022).

However, there are assessment tools that fail to account for cultural and linguistic diversity, leading to misidentification (Schon et al., 2008). Resource constraints in low-income schools further exacerbate disparities in access and outcomes (Baker et al., 2016). Developing culturally responsive assessment tools and allocating resources for targeted screenings in underserved areas are critical steps. Teacher training programs must also focus on interpreting screening data and designing interventions that address the specific needs of at-risk readers.

4.5.4 Cross-Cultural Comparisons

Cross-cultural comparisons provide valuable insights into adapting literacy practices across diverse educational contexts. These studies emphasize the role of cultural factors in reading development and support the customization of best practices to different settings (Tang et al., 2022; Guo et al., 2021; Salmerón et al., 2023).

However, challenges such as language barriers, cultural biases in assessment tools, and variations in educational systems often limit the generalizability of findings (Kabuto, 2017). Addressing these challenges requires fostering international collaborations to standardize assessment practices and share effective strategies. Partnerships between educators and researchers are essential for tailoring interventions to specific cultural needs, while future studies should refine methodologies to improve the validity and reliability of cross-cultural research.

5.0 CONCLUSION

This systematic literature review provides a comprehensive analysis of how teachers support the development of reading skills across diverse educational contexts. By synthesizing findings across five interconnected themes; Technology-Enhanced Reading Interventions, Instructional Approaches for Reading Development, Inclusive Education and Differentiated Instruction, Home-School Collaboration in Reading Education, and Assessment and Monitoring of Reading Progress; this review underscores the complexity and multifaceted nature of reading instruction. It highlights the importance of employing adaptive, inclusive, and evidence-based strategies to address the diverse needs of learners.

Each theme, supported by detailed sub-themes, offers valuable insights into effective literacy practices. Technology-Enhanced Reading Interventions illustrate the pivotal role of digital tools and game-based learning in delivering personalized and engaging reading experiences. Instructional Approaches for Reading Development emphasize the necessity of differentiated teaching strategies, such as multisensory methods and response-to-intervention models, to accommodate students' varying abilities and needs. Inclusive Education and Differentiated Instruction address the challenges of classroom diversity by ensuring equitable access to literacy resources, providing all learners with the support required for success. Home-School Collaboration in Reading Education underscores the significance of parental involvement and teacher-mediated interventions in fostering consistent literacy environments. Lastly, Assessment and Monitoring of Reading Progress demonstrate the critical role of systematic tracking and evaluation in tailoring instruction and enhancing the effectiveness of interventions.

These findings collectively underscore the need for integrated and context-sensitive approaches to reading instruction. Teachers are central to the successful implementation of strategies that merge traditional and digital methods, promote inclusivity, and strengthen home-school partnerships. However, their efforts must be bolstered by systemic support. Addressing resource disparities, investing in professional development programs, and developing culturally responsive assessment tools are essential steps for policymakers. Furthermore, researchers play a crucial role in providing evidence-based solutions that align with the diverse realities of educational contexts.

Despite the rich insights provided by this review, several critical gaps remain, presenting opportunities for future research. Longitudinal studies are necessary to evaluate the sustained impact of technology and inclusive practices on literacy development. Cross-cultural comparisons could yield deeper understandings of how contextual factors shape the effectiveness of literacy interventions. Additionally, investigating the practical challenges associated with implementing reading strategies in under-resourced settings could inform scalable and sustainable solutions. Addressing these gaps will enable future studies to expand the understanding of effective teacher strategies and contribute to the creation of globally adaptable literacy frameworks.

In synthesizing these findings, this review makes significant contributions to the field of literacy education. It equips educators, researchers, and policymakers with actionable insights to enhance teachers' capacity to develop reading skills, ultimately advancing literacy outcomes for learners in an increasingly diverse and technology-driven educational landscape.

Through these contributions, this study not only addresses existing challenges in literacy education but also provides a roadmap for creating more equitable and effective reading instruction across varied educational contexts.

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