

INFERENCE OF READING LITERACY GAP BETWEEN ELEMENTARY SCHOOL AND
ISLAMIC ELEMENTARY SCHOOL BASED ON THE PIRLS FRAMEWORK

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ABSTRACT

Reading literacy achievement among Indonesian elementary students remains critically low, with notable disparities between Elementary Schools (SD) and Madrasah Ibtidaiyah (MI). This issue is structurally embedded within Indonesia's dual education system. Existing studies have largely examined reading literacy in general, with limited attention to comparative analysis between SD and MI using international benchmarks. This study aims to critically examine the inferred literacy gap between SD and MI based on the Progress in International Reading Literacy Study (PIRLS) framework, using a qualitative approach through a systematic literature review of thirty scholarly sources published between 2011 and 2026. The findings indicate that both SD and MI students demonstrate significant weaknesses in higher-order reading comprehension processes, particularly in inferencing, interpretation, and evaluation. This gap is more pronounced in MI due to five structural factors: reading teacher shortage, resource allocation disparity, dual-curriculum burden, lower socioeconomic background of students, and cognitive complexity from Arabic-medium instruction. Drawing on educational equity theory and Bourdieu's framework of cultural and institutional capital, this study concludes that bridging the SD–MI literacy gap requires differentiated yet integrated policy responses, including the development of MI-specific literacy programs, targeted teacher training, and the systematic inclusion of MI in future national and international literacy assessments.

Keywords: reading literacy, PIRLS, Elementary School, Madrasah Ibtidaiyah, literacy gap, Indonesia

INTRODUCTION

Indonesia faces a reading literacy crisis: despite increasing participation in primary education, many fourth-grade students are still unable to comprehend texts according to international standards. The 2021 PIRLS results placed Indonesia at the bottom with a score of 388, well below the international average of 500. [1] Furthermore, the low literacy rate of children in Indonesia is multidimensional and cannot be addressed with a single policy [2]. The situation is further complicated by the fact that Indonesia has two parallel primary education systems (SD and MI) without adequate mechanisms to equalize literacy quality. Consequently, the success of a literacy culture in SD is not necessarily achieved in MI, which has a different institutional context [3].

Previous research on reading literacy at the elementary school level in Indonesia shows a number of common patterns. Studies on the implementation of the School Literacy Movement (GLS) in building a reading culture in elementary schools and studies on reading literacy movements in elementary schools tend to focus on elementary schools without comparing them with Islamic elementary schools [4], [5]. Meanwhile, research on literacy in Islamic elementary schools has been conducted separately, but has not used the *Progress in International Reading Literacy Study* framework as a reference standard. Efforts to develop [6], [7] PIRLS -based teaching materials for fourth-grade elementary school

students have also not involved Islamic elementary schools in their research design [8]. Bibliometric analysis for the period 2013–2023 shows that reading literacy studies focus more on elementary schools, while Islamic elementary schools are still rarely discussed in an international comparative context [9]. A major weakness of previous studies is the lack of critical comparisons between elementary schools and Islamic elementary schools based on the PIRLS standards, resulting in a significant research gap: no studies have directly compared elementary schools and Islamic elementary schools using the PIRLS framework. Epistemologically, the lack of representative PIRLS data for Islamic elementary schools is a methodological challenge that must be recognized from the outset. Therefore, this paper does not claim direct empirical comparison, but rather proposes *inferences about gaps* constructed through a synthesis of structural indicators, partial studies, and theoretical frameworks. This approach is more academically honest and also opens up space for further research based on primary data.

This paper aims to fill this gap by critically analyzing the reading literacy gap between elementary and Islamic elementary schools in Indonesia using the *PIRLS standards*. To achieve this goal, three research questions are formulated: (1) what is the reading literacy profile of elementary and Islamic elementary school students when measured using the *PIRLS framework*; (2) what structural and pedagogical factors cause the literacy gap between the two institutions; and (3) how can literacy policies be reconstructed to bridge this gap systematically and fairly.

This study makes three scientific contributions. First, it addresses the comparative gap between elementary and Islamic primary schools (SD-MI) in literacy studies based on the PIRLS framework. Second, it offers an inferential approach as a valid methodological alternative under conditions of limited representative data. Third, it shifts the unit of analysis from individual student abilities to structural inequalities in the educational ecosystem. Thus, this study positions literacy not merely as a pedagogical issue but as a matter of educational equity that requires evidence-based policy responses.

LITERATURE REVIEW

Reading Literacy: Definition and Conceptual Framework

Reading comprehension is a construct formed through the dynamic interaction between text, reader, and context, so it cannot be simplified into a single competency [10]. Reading literacy at the elementary school level needs to be understood within the framework of students' cognitive development, where the ability to infer and integrate information is a key indicator of literacy maturity [11]. This perspective is also extended to the digital context by emphasizing the importance of teachers mastering adaptive reading teaching strategies for both digital and print texts [10]. The *Progress in International Reading Literacy Study framework* accommodates this understanding by measuring two main dimensions: the purpose of reading (for literary experience and to obtain information) and four comprehension processes: focus and retrieval of explicit information, direct inference, interpretation and integration of ideas, and evaluation and criticism of text content.

PIRLS as a Global Literacy Measurement Standard and the Indonesian Context

Findings indicate that *PIRLS scores* have a strong correlation with students' academic achievement at subsequent levels of education, and therefore can be considered a long-term predictor of educational quality (Grammatikopoulou, 2026). Multilevel

analysis of the *2021 PIRLS data* also indicates that school factors, such as the availability of reading materials and teacher competence, contribute significantly to variations in student literacy outcomes [12]. However, the presence of strong infrastructure does not automatically guarantee high results, as weaknesses in pedagogical management can actually correlate with low literacy performance [13]. Furthermore, a shortage of reading teachers has been a global trend in the past two decades, according to *PIRLS data*, with the most significant impact felt in developing countries [14]. In the Indonesian context, the *Progress in International Reading Literacy Study framework* has proven relevant for measuring the literacy of fourth-grade elementary school students, although it has never been used comparatively to analyze MI students [1]. Table 1 presents a comparison of the institutional profiles of SD and MI, while Table 2 summarizes Indonesia's position in international reading literacy assessments.

Table 1. Comparison of Institutional Profiles of Elementary Schools and Islamic Elementary Schools in Indonesia

Comparative Aspects	Elementary School (SD)	Elementary Madrasah (MI)
Number of institutions (2022/2023)	148,975 units	26,503 units
Percentage of public/private	87.29% of the country	93.54% Private
Supervisory authority	Ministry of Education, Culture, Research and Technology	Ministry of Religion
Students (2023/2024)	±24.04 million students	±5.4 million students
Curriculum load	Independent Curriculum (general)	Ministry of Religion Curriculum + general (dual)
GLS Access	Full & structured	Partial & uneven
Representation of PIRLS Indonesia	Be the main sample	Not included as a sample

Notes:[15], [16], [17]

Table 1 shows a systemic disparity between elementary schools (SD) and Islamic elementary schools (MI), which has the potential to impact the quality of reading literacy in Indonesia. Quantitatively, SD dominates both in terms of the number of institutions and students, and is supported by its predominantly state-owned institutional status under the Ministry of Education, Culture, Research, and Technology. This allows it to have stronger access to policies, including the relatively structured implementation of the Independent Curriculum and the School Literacy Movement (GLS). In contrast, MI, which are mostly private under the Ministry of Religious Affairs of the Republic of Indonesia, face the complexity of a dual curriculum burden (religious and general) and unequal access to literacy programs. This disparity is not only administrative but also impacts exposure to international standards, with SD being Indonesia's primary representative in *the Progress in International Reading Literacy Study (PIRLS)*, while MI has not been directly involved.

This condition indicates that national literacy achievement as measured by PIRLS has the potential to not fully reflect the reality of all basic education units, while also highlighting the gap in opportunities to strengthen reading literacy between the two types of institutions.

Table 2. Indonesia's Position in the International Reading Literacy Assessment

Cycle/Year	Instrument	Indonesia's Score	International Average	Rank/Total
2021	PIRLS (Gr. 4)	388	500	43 / 43
2022	PISA (15 years)	359	476	70/80
2023 (AN)	AKM Literacy (Elementary/Islamic Elementary School Class V)	< 50% of students achieve KM	-	-

Source: [17], [18], [19]

KM = Minimum Competency.

Table 2 shows that Indonesia's reading literacy remains low in both international and national assessments. In the 2021 *Progress in International Reading Literacy Study (PIRLS)*, Indonesia scored 388, well below the international average of 500, and ranked last (43rd out of 43 countries). This reflects the weak ability of elementary school students to understand and process information from texts. This is in line with the results of the 2022 Programme for International Student Assessment (PISA), where Indonesia scored only 359 compared to the global average of 476, ranking 70th out of 80 countries, indicating that literacy problems persist into higher education. Meanwhile, the results of the National Assessment through the AKM (Academic Competency Test) conducted by the Ministry of Education, Culture, Research, and Technology (Kemendikbud) show that less than 50% of elementary school students achieve the Minimum Competency. Overall, these data indicate that low reading literacy in Indonesia is systemic and ongoing, requiring comprehensive improvement efforts based on international standards.

Reading Literacy Profile in Indonesian Elementary Schools

The School Literacy Movement (*GLS*) plays a role in encouraging the formation of a reading culture in elementary schools through various activities such as reading for 15 minutes before class, providing reading corners, and holding literacy festivals [4]. However, inconsistent implementation [20] of the *GLS* and the lack of strengthening teacher competencies have resulted in suboptimal literacy outcomes for elementary school students. Literacy gaps are also clearly visible between regions, with students in rural areas showing the lowest literacy levels compared to students in urban and suburban areas [21]. Furthermore, schools' potential to support literacy development has not been optimally utilized because existing policies are still programmatic and have not been systematically integrated into the curriculum. The success of [22] *GLS* implementation is also largely determined by the commitment of school principals and teachers, the level of which varies significantly between educational units [23]. It's worth noting that a number of studies

have actually demonstrated the limitations of GLS: these programs are often programmatic in nature without systematic curricular integration [22], and their success depends heavily on the commitment of individual principals [23]. Even in elementary schools, higher-level literacy achievements such as inference and evaluation remain a dominant weakness [20]. These findings are important for comparison with MI, where structural barriers are more severe but the literature remains very limited.

Reading Literacy Profile in Elementary Madrasahs

The literacy skills of elementary school (MI) students are generally still at the level of literal understanding, with significant weaknesses in the inferential and critical aspects [6]. The implementation of literacy programs in MI also faces complex challenges, such as the high burden of religious curriculum and limited relevant and contextual reading materials [7]. In addition, literacy improvement strategies in rural elementary/MI environments still tend to use conventional approaches that are not aligned with the demands of 21st-century literacy competencies [24]. Supporting and inhibiting factors in the implementation of the School Literacy Movement (GLS), such as limited financial support and school management, are also found to apply in the MI context [25]. More broadly, low child literacy in Indonesia is understood as a qualitative phenomenon rooted in systemic problems, not solely the result of individual failure [2].

Factors Determining the Literacy Gap

Cross-country analysis based on *PIRLS* and *TIMSS data* shows that socioeconomic background and teacher quality are key predictors in explaining disparities in student literacy [26]. Furthermore, bilingualism also influences reading performance, particularly in educational contexts involving more than one language, such as the use of Arabic as a religious language in Islamic elementary schools [27]. Studies on reading literacy in Indonesian schools abroad reveal that literacy practices and challenges are strongly influenced by the context and socio-cultural ecosystem in which the institution is located [28]. On the other hand, reading interventions, both analog and digital, have been shown to have a significant impact on improving elementary school students' literacy, underscoring the importance of designing targeted interventions [29]. From a theoretical perspective, this gap can be explained through Bourdieu's concept of cultural and institutional capital. Elementary schools, as institutions under the Ministry of Education, Culture, Research, and Technology, have greater access to institutional capital in the form of national literacy policies, standardized teaching materials, and structured GLS programs. Islamic elementary schools, on the other hand, operate two curricula simultaneously with more limited resources, a condition that structurally weakens the accumulation of students' cultural literacy capital. Thus, the literacy gap between elementary and Islamic elementary schools is not merely a matter of resource distribution, but rather reflects the inequality of cultural and institutional capital that is reproduced systemically [26].

Table 3. Comparison of Reading Literacy Scores of ASEAN Countries

No.	Country	PISA 2022	PIRLS 2021	Basic Education System
1	Singapore	543	587	Integrated, one ministry
2	Brunei Darussalam	429	-	Integrated
3	Malaysia	388	528	Integrated, SJKC/SJKT

4	Thailand	379	-	Integrated
5	Indonesia	359	388	Dual (SD + MI)
6	Philippines	347	-	Integrated

Source: [18], [19][18](-) sign = not participating in PIRLS 2021.

Table 3 shows that Indonesia's position in reading literacy still lags behind other ASEAN countries, both based on the results of the Programme for International Student Assessment (PISA) 2022 and *the Progress in International Reading Literacy Study (PIRLS)*. 2021. Countries like Singapore occupy the top spot with scores far exceeding the average, followed by Malaysia and Brunei Darussalam, which also performed better than Indonesia. Interestingly, most of these high-performing countries implement an integrated basic education system under a single ministry, allowing for more consistent and integrated literacy policies, curricula, and implementation. In contrast, Indonesia has a fragmented (*dual system*) between elementary and Islamic elementary schools (SD) that potentially leads to differences in management, curriculum, and access to literacy programs. This indicates that in addition to pedagogical factors, the institutional structure of education also contributes to national literacy achievements. Therefore, reforms aimed at policy integration and equitable distribution of literacy programs are crucial to improving Indonesia's competitiveness at the regional level.

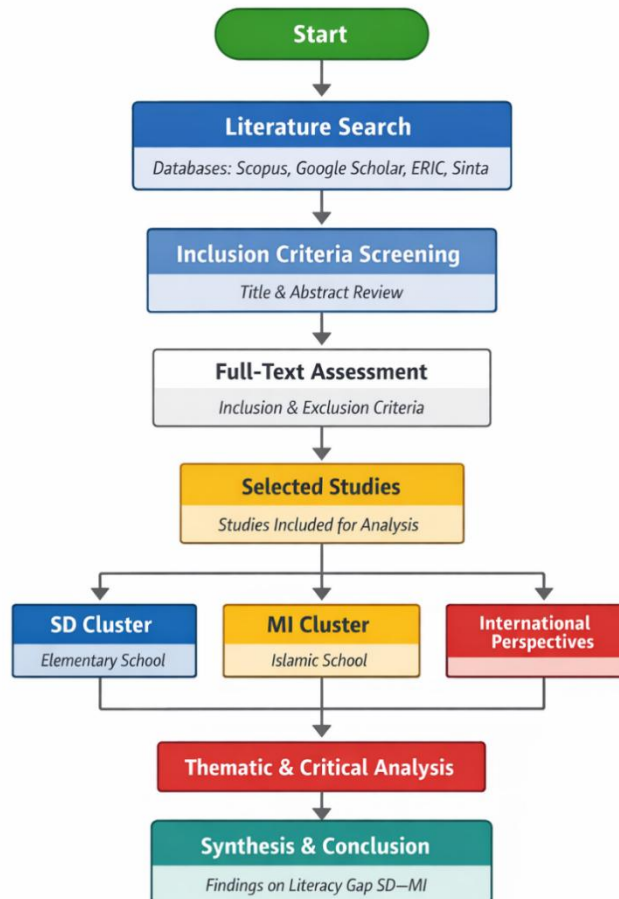
Pedagogical Innovation and Prospects for Literacy Development

A systematic review shows that integrating *Reading Workshop* with *Self-Regulated Learning* is effective in improving elementary school students' reading literacy because it encourages independence and the use of active reading strategies [30]. Furthermore, a three-level meta-analysis of studies from 2000–2025 found that the *Dialogic Reading approach* had a moderate positive effect on improving children's reading literacy [31]. *The Reading Guide* method has also been shown to measurably improve elementary school students' literacy skills [32]. Furthermore, teacher adaptation to the processes and topics within the *Progress in International Reading Literacy Study framework* requires systematic training, not just introduction through the curriculum [33]. The use of PIRLS-based teaching materials has also been shown to be effective in improving the literacy of fourth-grade elementary school students and has great potential for further development in the MI context [8]. Overall, these findings provide an empirical basis for formulating contextual literacy interventions for elementary schools and MI in Indonesia.

METHOD

This study uses a qualitative approach with the *Systematic Literature Review (SLR)* method to analyze the reading literacy gap between Elementary Schools (SD) and Madrasah Ibtidaiyah (MI) in Indonesia based on the PIRLS framework. SLR was chosen because it allows for comprehensive and systematic problem mapping without requiring new primary data collection, particularly in the study of child literacy in Indonesia [2]. The flowchart illustrates the systematic process of the Systematic Literature Review (SLR) method used in this study. It begins with a comprehensive literature search across major databases (Scopus, Google Scholar, ERIC, and Sinta), followed by screening based on inclusion criteria and full-text assessment. Selected studies are then categorized into three

clusters Elementary School (SD), Islamic Elementary School (MI), and international perspectives. These clusters undergo thematic and critical analysis, culminating in a synthesis and conclusion that infer the literacy gap between SD and MI within the PIRLS framework.



Picture 1. Flowchart of the research process

Comparative Unit of Analysis and Justification

The units of analysis in this study are elementary schools (SD) and Islamic elementary schools (MI), two basic educational institutions operating in parallel but within different institutional ecosystems. A bibliometric study of the 2013–2023 period indicates that the comparison between these two types of institutions remains an understudied research gap [9], thus making this comparative study highly academically significant. Methodologically, it should be emphasized that this study generates inferences about gaps, not direct empirical comparisons. The absence of representative PIRLS data for MI is not merely a technical limitation but rather an epistemological condition that must be explicitly acknowledged. Therefore, the comparative argument in this study is constructed through triangulation of structural indicators, partial studies of MI, and a theoretical framework, rather than causal claims based on primary data.

Data Sources and Selection Criteria

The data sources consisted of 30 scientific references published between 2011 and 2026. The search was conducted in the *Scopus database*, *Google Scholar*, *ERIC*, and the Sinta-accredited national journal repository using a combination of keywords in

Indonesian and English, including: “reading literacy”, “reading literacy”, “PIRLS”, “Elementary School”, “Madrasah Ibtidaiyah”, and “literacy gap”. Source selection was based on four inclusion criteria: (1) direct relevance to reading literacy at the elementary school level; (2) use of a clear theoretical or empirical framework; (3) publication in an indexed journal or proceedings; and (4) focus on the Indonesian context or a relevant international comparative perspective. Sources that did not meet any of these criteria were excluded from the analysis. Of the 30 sources analyzed, the distribution was as follows: 18 sources focused on SD or general literacy, 8 sources focused on MI or madrasah literacy, and 4 sources took an international perspective or global PIRLS. This distribution both reflects and confirms the study's main finding: MI is systematically underrepresented in the international standards-based literacy literature. Table 5 presents a summary of the source distribution.

Table 5. Distribution of Literature Sources based on Study Focus

Study Focus	Number of Sources	Year Range
Elementary school focus / general literacy	18	2014–2026
MI focus / madrasa literacy	8	2011–2026
International perspective / PIRLS global	4	2011–2026
Total	30	2011–2026

Note: Compiled by the author based on the results of the SLR selection.

Analysis Procedure

The analysis process was conducted through four stages. *First*, identification and selection of sources based on the inclusion criteria above. *Second*, thematic mapping by grouping sources into three main clusters: (a) PIRLS-based elementary school literacy profiles, (b) MI literacy profiles and their inhibiting factors, and (c) literacy policies and interventions. *Third*, a critical analysis of the findings, methodology, and limitations of each source using a *critical content analysis approach*. *Fourth*, a cross-source synthesis to build a critical narrative that answers the three research questions. The validity of the analysis was maintained through triangulation between sources, namely comparing findings from various sources to ensure consistency of arguments before drawing conclusions [30].

RESULTS

Elementary School Reading Literacy Profile Based on PIRLS Standards

The synthesis of literature focused on Elementary Schools (SD) reveals a consistent pattern of limited higher-order reading comprehension among Indonesian fourth-grade students. Indonesia scored 388 in the 2021 PIRLS assessment, ranking last among 43 participating countries and falling well below the international average of 500 [1]. This outcome is corroborated by a study developing PIRLS-based teaching materials, which found that fourth-grade students experienced significant difficulties with inferential and evaluative comprehension tasks [8]. More broadly, the reviewed sources indicate that elementary school students' reading skills remain concentrated at the level of explicit information retrieval, with

limited proficiency in interpretation and integration of ideas [20]. Structural constraints further compound this profile. Inconsistent implementation of the School Literacy Movement (*Gerakan Literasi Sekolah*/GLS) and insufficient teacher competency development were identified across multiple sources as key inhibiting factors [4], [23]. The success of GLS programs was found to be heavily dependent on the commitment of individual school principals and teachers, resulting in significant variation across educational units [23]. Moreover, literacy gaps are geographically pronounced, with students in rural areas demonstrating the lowest achievement compared to their urban and suburban counterparts [21]. A critical finding from the literature is that even in SD—where institutional support is comparatively stronger—higher-order literacy skills such as inference and evaluation remain dominant weaknesses [20], [22].

Table 4 below maps the alignment between the PIRLS framework and Indonesia's National Assessment (*Asesmen Nasional*/AKM), confirming that while conceptual overlap exists, MI has never been included as a disaggregated sample in either system.

Table 4. Comparison of the Dimensions of the PIRLS Framework and the Indonesian National Assessment Framework (AKM)

Dimensions	PIRLS Framework	AKM Framework (AN)
Reading Purpose	(1) Literary experience; Information	(2) Fiction text & information text
Understanding Process	(1) Focus & retrieval; (2) inference; (3) Interpretation & integration; (4) Evaluation & criticism	(1) Finding information; (2) Interpreting & integrating; (3) Evaluating & reflecting
Ability Level	Advanced (625+), High (550+), Intermediate (475+), Low (400+)	Proficient, Proficient, Basic, Needs Special Intervention
Target Population	Grade IV (~10 years old)	Grade V Elementary/Islamic Elementary School or equivalent
MI Coverage	Not included in the Indonesian sample	Included (data not disaggregated by institution type)

Source: [17], [19]

MI Reading Literacy Profile Based on PIRLS Indicators

The eight sources focused on MI literacy consistently indicate that reading practices in Islamic elementary schools remain at the level of ritualistic and religious text engagement, which is not fully aligned with the functional literacy competencies measured by the PIRLS framework [6]. Literacy programs in MI tend to prioritize reading quantity over reading comprehension depth, with limited integration of inferential and critical reading strategies [7]. The implementation of GLS in MI is frequently ceremonial rather than substantive, impeded by budget constraints, limited access to diverse and contextually relevant reading materials, and teachers' insufficient understanding of literacy strategies benchmarked against international standards [25]. It is methodologically important to affirm that all findings pertaining to MI in this study are inferential in nature. Since MI has never been included as a representative sample in PIRLS assessments in Indonesia [1], [9], none of the reviewed sources directly measure MI literacy using PIRLS instruments. Instead, this study triangulates partial empirical findings, structural indicators, and theoretical frameworks to construct a reasoned inference about the MI literacy profile. The absence of PIRLS-based MI data is not treated merely as a technical gap; it is itself a substantive finding reflecting the epistemic marginalization of MI within national and international literacy measurement systems [9].

Structural Factors Contributing to the Literacy Gap

The cross-source thematic analysis identified five interconnected structural factors that collectively explain the inferred literacy gap between SD and MI:

1. **Teacher shortage:** A global two-decade trend of reading teacher shortages disproportionately affects institutions with limited recruitment capacity, particularly MI in rural areas [14].
2. **Resource allocation disparity:** Given that the vast majority of MI are privately operated under the Ministry of Religious Affairs, they face systemic financial constraints in providing quality and diverse reading materials [25].
3. **Dual curriculum burden:** MI is required to implement both the general national curriculum and the Ministry of Religion's religious curriculum simultaneously, leaving limited instructional time for strengthening functional literacy [7].
4. **Socioeconomic background:** The average socioeconomic background of MI students tends to be lower than that of students attending urban public SD, a variable identified in international PIRLS and TIMSS analyses as a key predictor of literacy outcomes [26].
5. **Bilingualism and cognitive complexity:** The use of Arabic as a religious instructional language in MI introduces additional cognitive load that may affect students' reading performance in Indonesian, the language used in PIRLS and AKM assessments [27].

From a theoretical standpoint, these five factors can be interpreted through Bourdieu's framework of cultural and institutional capital. SD, as institutions structurally closer to the mainstream of state education policy, accumulate greater institutional capital through access to GLS, standardized curricula, and representation in PIRLS. MI, by contrast, occupies a structurally disadvantaged position within the Indonesian education hierarchy, with limited access to such capital not due to individual choices but as a consequence of systemic institutional arrangements [26].

Absence of Comparative Data as a Substantive Finding

A finding that emerged consistently across all three literature clusters is the systematic exclusion of MI from national and international literacy measurement systems. A bibliometric analysis of literacy studies from 2013 to 2023 confirms that comparative SD–MI research remains a critically understudied area in the literature [9]. MI has never served as a representative sample in PIRLS Indonesia, and the AKM data is not disaggregated by school type in a manner that enables direct SD–MI comparison [1], [17]. This absence of data is treated in the present study not as a limitation to be minimized, but as a finding in its own right. It reflects and reproduces the epistemic marginalization of MI within education research and policy, and constitutes a structural barrier to evidence-based literacy reform. Future research must address this gap through primary data collection and longitudinal designs that include MI as an equal unit of analysis alongside SD [9].

DISCUSSION

Interpretation: Inequality as a Product of Systems, Not Individual Capabilities

The findings above indicate that the literacy gap between elementary and Islamic elementary schools stems from structural inequalities within the educational ecosystem, not from differences in students' inherent abilities. Effective literacy culture management in elementary schools cannot automatically be transferred to Islamic elementary schools because the two operate within fundamentally different institutional contexts (Marmoah et al., 2022). From an educational equity perspective, this condition reflects the legacy of unresolved systemic dualism: formal equality between elementary schools and Islamic elementary schools masks real disparities in the quality of their literacy ecosystems. From

Bourdieu's theoretical perspective, the SD-MI dualism is not simply a variation of administrative institutions but has the potential to reproduce systemic literacy inequities. Elementary schools, as institutions closer to the mainstream of state policy, have greater access to institutional capital: GLS programs, standardized curricula, and representation in international assessments. Islamic elementary schools, on the other hand, experience a deficit in cultural-institutional capital that is not caused by individual choices, but by their structural position within the hierarchy of the Indonesian education system. This condition emphasizes that literacy reform is not only technical-pedagogical in nature, but must also address the root of the structural problem: should this dualism be maintained, or is it time to integrate it more systemically for the sake of national literacy justice?

Comparison with International Findings

Most ASEAN countries with higher PIRLS outcomes implement an integrated primary education system under a single ministry. This allows for consistency in literacy policies, curricula, and programs nationwide. In contrast, the fragmentation of the elementary and Islamic primary school (SD-MI) system in Indonesia correlates with the inconsistent literacy implementation documented in this study. School factors, including the availability of reading materials and teacher competency, significantly contribute to variations in literacy outcomes in the multilevel analysis of the 2021 PIRLS data [12].

Implications for Academic Trajectory

PIRLS scores have been shown to be a valid predictor of academic achievement in secondary school [34], meaning that MI students who do not build a strong literacy foundation in fourth grade are at risk of facing cumulative obstacles in junior high school. This risk is not evenly distributed: female students from low-income families in rural areas are the most vulnerable group, bearing the multiple effects of gender, socioeconomic, and geographic differences [26].

Potential Interventions

A wealth of empirical evidence suggests that targeted interventions can yield significant improvements. The Dialogic Reading approach has consistently produced moderate positive effects across contexts [31]. Integrating Reading Workshops with Self-Regulated Learning has proven effective in elementary schools and has the potential to be adapted for MI [30]. However, literacy challenges are highly contextual; solutions for MI cannot simply adopt models that work in elementary schools [28].

Policy Recommendations

From the synthesis of findings, four policy recommendations can be formulated with clear implementers and policy levels:

1. The Ministry of Education, Culture, Research, and Technology together with the Ministry of Religious Affairs need to integrate MI into the national PIRLS assessment framework with accurate data sorting, as a policy step at the national level [9].
2. The Ministry of Religion needs to develop a madrasah version of GLS based on the integration of Islamic texts and informational texts, as a ministerial-level policy that takes into account the unique structural barriers of MI [25].
3. The Ministry of Religion's Education and Teacher Development Institute (LP2TK) needs to strengthen the capacity of MI literacy teachers through systematic training in active reading and metacognitive strategies at the school level [30].

4. MI curriculum teams at the school and ministry levels need to develop PIRLS-based contextual reading materials that integrate quality Islamic texts as relevant reading sources for MI students [8].

Limitations of the Study

This study has several limitations. First, the lack of PIRLS-based primary comparative data between elementary and Islamic primary schools limits the ability to generate strong causal claims [1]. Second, the study only includes sources in Indonesian and English. Third, the study does not account for regional variations in MI conditions, despite the significant literacy gap between regions [21]. Further research based on primary data and a longitudinal design measuring PIRLS-based literacy competencies in representative samples of elementary and Islamic primary school students across various provinces in Indonesia is needed.

CONCLUSION

This study aimed to critically examine the inferred reading literacy gap between Elementary Schools (SD) and Madrasah Ibtidaiyah (MI) in Indonesia based on the PIRLS framework. Three conclusions are drawn in correspondence with the research objectives.

First, the reading literacy profile of SD students consistently shows proficiency in explicit information retrieval but significant weakness in higher-order comprehension processes, particularly inferencing, interpretation, and evaluation. For MI, a direct PIRLS-based profile cannot be constructed due to its systematic exclusion from Indonesia's PIRLS sample. Based on inferential triangulation of partial studies and structural indicators, MI students demonstrate limited alignment with functional literacy competencies as defined by the PIRLS cognitive domains.

Second, the literacy gap between SD and MI is driven by five interrelated structural factors: reading teacher shortage, resource allocation disparity, the dual curriculum burden in MI, lower average socioeconomic background of MI students, and cognitive complexity introduced by Arabic-medium religious instruction. These factors operate systemically and reflect an inequality of cultural and institutional capital between the two institution types, rather than differences in students' inherent abilities.

Third, bridging this gap requires differentiated yet integrated policy responses. SD needs deeper curricular integration of higher-order literacy skills beyond the current programmatic GLS model. MI requires a dedicated literacy program that incorporates Islamic texts as reading sources, targeted teacher training in PIRLS-aligned strategies, and contextually relevant teaching materials. At the systemic level, MI must be included as a representative sample in future national and international literacy assessments so that policy is built on evidence reflecting the full landscape of Indonesian basic education.

This study contributes by filling the comparative SD–MI gap in PIRLS-based literacy research, validating an inferential approach as a methodologically transparent alternative under conditions of absent representative data, and repositioning literacy as a matter of structural educational equity. Future research should prioritize longitudinal primary data collection involving representative samples of both SD and MI across regions to enable truly evidence-based and equity-oriented policy.

REFERENCE

- [1] K. Nahdi, D. Yunitasari, BDD Arianti, Atiaturrahmaniah, and Usuluddin, "How Does the PIRLS Framework Assess Reading Literacy Among Elementary School Students

- in Indonesia?," *Veles Journal*, vol. 8, no. 1, pp. 220–229, 2024.
- [2] IK Mu'alimah, W. Niwangtika, E. Nuriana, and RA Wulandari, "The Low Reading Literacy of Indonesian Children: A Qualitative Perspective through Literature Review," *Journal of Indonesian Elementary Education ISSN*, vol. 2, no. 2, pp. 92–101, 2024.
- [3] S. Marmoah and JIS Poerwanti, Suharno, "Literacy Culture Management of Elementary Schools in Indonesia," *Heliyon*, vol. 8, no. 4, p. e09315, 2022, doi: 10.1016/j.heliyon.2022.e09315.
- [4] WD Aryani and H. Purnomo, "School Literacy Movement (GLS) in the Reading Culture of Elementary School Students in Indonesia," *MIND: Journal of Educational and Cultural Sciences*, vol. 4, no. 2, pp. 47–68, 2024.
- [5] NH Hanin and MI Islamy, "Reading Literacy Movement in Elementary School," *Al-Mudarris: Journal of Education*, vol. 3, no. 1, pp. 93–104, 2020, doi: 10.32478/al-mudarris.v3i1.418.
- [6] Fitriah, "Reading Literacy of Elementary Madrasah Students," *Proceedings of the Indonesian National Conference of PD-PGMI*, no. September, pp. 101–110, 2022, [Online]. Available: <https://vicon.uin-suka.ac.id/index.php/prosidingPGMI/article/view/857>
- [7] NR Fatmowati and Z. Arifin, "Implementation of the Literacy Program to Increase Reading Interest of Elementary School Students," *Islamic Primary School: Journal of Elementary Education*, vol. 1, no. 2, pp. 90–102, 2022.
- [8] K. Hardani, H. Suwignyo, and N. Nurchasanah, "Reading Skills Teaching Materials Based on Progress in the International Reading Literacy Study for Fourth Grade Elementary School Students," *Journal of Education: Theory, Research, and Development*, vol. 5, no. 6, p. 803, 2020, doi: 10.17977/jptpp.v5i6.13622.
- [9] SF Rabia, GAN Zakaria, N. Istiq'faroh, HA Muhimmah, and AH Wibowo, "Study on Reading Literacy in Elementary Schools: Bibliometric Analysis 2013-2023," *EduStream: Jurnal Pendidikan Dasar*, vol. 8, no. 1, pp. 58–70, 2024, doi: 10.26740/eds.v8n1.p58-70.
- [10] M. Bruggink, N. Swart, V. A. Lee der, and E. Segers, *Teaching Reading Comprehension in a Digital World*. 2025.
- [11] O. Satria, "Theoretical and Empirical Review of Reading Literacy among Elementary School Students," *Indonesian Journal of Education and Science*, vol. 1, no. 5, pp. 254–263, 2025.
- [12] HT Thomure, CZ Oo, and MS Khine, "Reading Achievements Among Students in The United Arab Emirates: A Multilevel Analysis of PIRLS 2021," *International Journal of Educational Research Open*, vol. 8, no. April 2024, p. 100421, 2025, doi: 10.1016/j.ijedro.2024.100421.
- [13] A. Karimi, "Schools With Strong Features and Poor Performance in Reading Literacy Achievement in PIRLS 2006," *Procedia Soc. Behav. Sci.*, vol. 31, no. 2011, pp. 646–652, 2012, doi: 10.1016/j.sbspro.2011.12.118.

- [14] G. O'Rafferty, N. Eryilmaz, A. Kennedy, and R. Strietholt, "Trends in Reading Teacher Shortage: Using 20 Years of Evidence from PIRLS," *Teach. Teach. Educ.*, vol. 174, no. June 2025, p. 105415, 2026, doi: 10.1016/j.tate.2026.105415.
- [15] Ministry of Religion, "Madrasah education data for the 2022/2023 academic year," Ministry of Religion of the Republic of Indonesia. [Online]. Available: <https://emis.kemenag.go.id>
- [16] BPS, "Indonesian Statistics 2023," BPS. [Online]. Available: <https://www.bps.go.id>
- [17] Ministry of Education, Culture, Research, and Technology, "National Assessment: Report on the results of the 2022 AKM," Ministry of Education, Culture, Research, and Technology. [Online]. Available: <https://www.kemdikbud.go.id>
- [18] OECD, "PISA 2022 results (Volume I): The state of learning and equity in education," OECD Publishing. [On line]. Available: <https://www.oecd.org/pisa>
- [19] M. Mullis, IVS, Martin, MO, Foy, P., & Hooper, "PIRLS 2021 assessment framework," International Association for the Evaluation of Educational Achievement.
- [20] MNA Ramadhan, RA Hamzah, and A. Nengsi, "Answering the Challenge of Literacy: Efforts to Strengthen Reading Skills in Elementary Schools," *Abuya: Journal of Elementary Education*, vol. Volume 6 N, no. 1, pp. 75–82, 2025.
- [21] K. Yudiana, NNCA Putri, and IGWS Antara, "Gaps in Elementary School Students' Literacy Skills in Urban, Suburban, and Rural Areas," *Journal of Educational Research and Development*, vol. 7, no. 3, pp. 540–547, 2023.
- [22] FE Suras, J. Pamungkas, and N. Rolina, "Reading Literacy: Exploring the Potential of School to Support Children's Literacy Development," *Undiksha Early Childhood Education Journal*, vol. 13, no. 1, pp. 188–197, 2025, doi: 10.23887/paud.v13i1.86957.
- [23] N. Holida, L. Habiburrahman, and R. Jannah, "Implementation of the School Literacy Movement in Increasing Reading Interest of Fourth Grade Students at SD Negeri 1 Pemenang Barat in the 2023/2024 Academic Year," *IBTIDA: Journal of Elementary Education Studies*, vol. 5, no. 55, pp. 14–30, 2024.
- [24] C. Nurinayah, DA Febrianti, HA Zulfani, M. Putri, MF Herdiansyah, and D. Suswanto, "Strategies for Improving Reading Literacy among Elementary School Students in Cicalung Hamlet, Cibitung Village," *Proceedings of UIN Sunan Gunung Djati Bandung*, vol. 6, no. 7, pp. 1–9, 2024, [Online]. Available: <https://proceedings.uinsgd.ac.id/index.php/Proceedings>
- [25] SS Pasa and DN Hafalaudza, "Identification of Supporting and Inhibiting Factors in the Implementation of the School Literacy Movement (GLS) at Panongan 1 Tangerang State Elementary School, Esa Unggul University," *JPIM: Journal of Multidisciplinary Scientific Research*, vol. 02, no. 02, pp. 918–931, 2026.
- [26] S. Oberleiter, J. Fries, L.S. Schock, B. Steininger, and J. Pietschnig, "Predicting Cross-National Sex Differences in Large-Scale Assessments of Students' Reading Literacy, Mathematics, and Science Achievement: Evidence from PIRLS and TIMSS," *Intelligence*, vol. 100, no. April, p. 101784, 2023, doi: 10.1016/j.intell.2023.101784.

- [27] A. Shiralipour *et al.*, "The Role of Bilingualism at Home and School on Reading Literacy Performance with Personal Variables (Based on PIRLS Data-2006)," *Procedia Soc. Behav. Sci.*, vol. 15, pp. 937–941, 2011, doi: 10.1016/j.sbspro.2011.03.216.
- [28] N. Izzah, Y. Tiara Riski, and Y. Suprpto, "Fostering reading literacy in transnational education: Practices and challenges at Indonesian overseas schools in the Philippines," *EduStream: Journal of Basic Education*, vol. 9, no. 2, pp. 141–157, 2025, doi: 10.26740/eds.v9n2.p141-157.
- [29] J. Heinz, F. Neuberger, L. Eras, and U. Hauck-Thum, "Bridging the Digital Divide? Effects of Analog and Digital Reading Interventions in German Elementary Schools," *Learn. Instr.*, vol. 103, no. January, p. 102324, 2026, doi: 10.1016/j.learninstruc.2026.102324.
- [30] D. Rizkiah, W. Sukartiningsih, Hendratno, N. Istiqfaroh, and B. Purwoko, "Reading Workshop and Self-Regulated Learning Integration for Elementary Reading Literacy: A Systematic Review," *Journal of Innovation and Research in Primary Education*, vol. 4, no. 3, pp. 1307–1315, 2025.
- [31] M. Tang, KL Lau, and Y. Du, "Effects and Moderators of Dialogic Reading on Children's Reading Literacy: A Three-Level Meta-Analysis on Studies from 2000 to 2025," *Int. J. Educ. Res.*, vol. 137, no. January, p. 102963, 2026, doi: 10.1016/j.ijer.2026.102963.
- [32] Moh. Toharudin, Daniar Rahma Dinita, Rila Melyana Fitri, Annisa Loyla, "Improving Literacy through Reading Guide Learning Methods in Elementary School Students," *International Journal of Integrative Sciences (IJIS)*, vol. 2, no. 3, pp. 247–256, 2023, [Online]. Available: <https://journal.formosapublisher.org/index.php/ijis/article/view/3479%0A>
<https://journal.formosapublisher.org/index.php/ijis/article/download/3479/4855>
- [33] I. Constantin, "Issues in Reading Practice. A Study on How Teachers Adapt to the Processes and Topics of PIRLS," *Procedia Soc. Behav. Sci.*, vol. 128, pp. 453–457, 2014, doi: 10.1016/j.sbspro.2014.03.187.
- [34] E. Grammaticopoulou, "The Predictive Validity of PIRLS and ePIRLS on Later Academic Achievement: Insights from Sweden," *Studies in Educational Evaluation*, vol. 88, no. December 2025, 2026, doi: 10.1016/j.stueduc.2025.101554.