



Development of a screening tool for reading readiness and early literacy skills in elementary students: mapping reading challenges and support practices

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Abstract: Early reading readiness plays a critical role in children's academic development, yet many students in Indonesia continue to face challenges in acquiring foundational literacy skills. This study aims to map early reading readiness and reading difficulties among children in preschool to Grade 2 in the Thousand Islands, representing the initial stage of developing a contextually appropriate early literacy screening tool. A total of 309 parents and 48 teachers participated using purposive sampling. Data were collected through parent and teacher questionnaires, whose reliability values improved after item refinement (parents: 0.496 → 0.605; teachers: 0.395 → 0.619). Quantitative results revealed several key findings: 76.7% of households lacked dedicated reading spaces, 51.4% of children were not yet reading independently, and 68.7% of Grade 1 students entered school unable to read. Teachers reported high proportions of decoding (72.9%) and comprehension difficulties (58.3%), with comprehension problems being the most frequently identified (total 196 cases). These findings align with the Simple View of Reading and Scarborough's Reading Rope, indicating that weaknesses in phonemic awareness, decoding, and language comprehension form the core of early reading challenges in this region. The study's implications highlight the urgent need for an early literacy screening tool that integrates environmental factors, instructional variability, and children's foundational skills. Such a tool can support early identification and targeted intervention, particularly in geographically unique regions like the Thousand Islands. However, the study is limited by its regional specificity, use of self-report data, and the exploratory nature of the instruments. Future research should expand to multiple regions, incorporate direct child assessments, and involve external expert validation to strengthen the tool development process.

Keywords: early literacy; reading readiness; reading difficulties

Introduction

Reading skills are a crucial foundation for children's learning, particularly at the elementary level. Reading serves not only as an academic skill but also as a gateway to understanding various fields of knowledge. Children with good reading skills tend to understand subject matter more easily, while those with reading difficulties are at risk of falling behind in class. However, many children still face various challenges in learning to read, especially during the transition from preschool to early elementary school. These challenges can manifest as difficulty recognizing letters, combining sounds, understanding simple words and sentences,

and maintaining concentration while reading. Teachers and parents often only recognize reading difficulties when the child has already shown significant delays, thereby delaying intervention.

To provide a stronger conceptual basis, this study is grounded in two influential models of reading development. The Simple View of Reading (Gough & Tunmer, 1986) conceptualizes reading comprehension (R) as the product of decoding (D) and linguistic comprehension (C) ($R = D \times C$), emphasizing that both components must develop adequately to support successful reading. Complementing this, Scarborough's Reading Rope (2001) illustrates the interwoven nature of lower-level word recognition processes, such as phonological awareness, letter-sound correspondence, and decoding with higher-order language comprehension processes, including vocabulary, background knowledge, and verbal reasoning. These frameworks underscore that reading readiness is a multidimensional construct that includes phonemic awareness, decoding, letter knowledge, fluency, vocabulary, and comprehension, all of which collectively shape a child's ability to become an independent reader.

National and international assessments continue to highlight persistent literacy challenges among young Indonesian learners. The National Assessment (Ministry of Education and Culture, 2021) reports that a substantial proportion of early-grade students perform below expected levels in reading literacy. Similar trends appear in global studies such as PIRLS (2016, 2021) and PISA (2018), where Indonesian students score significantly below the international average. While existing research (e.g., Nurjanah, 2020; Rahmawati, 2021) has documented reading difficulties in urban school contexts, studies focusing on children living in geographically isolated or resource-limited regions remain limited.

This gap is particularly evident in the Thousand Islands (Pulau Seribu), a region comprising dispersed island communities with distinct challenges, including limited transportation, constraints in accessing educational resources, shortages of trained teachers, and restricted exposure to print-rich environments. These geographical and infrastructural barriers create conditions that differ markedly from those of mainland or urban schools, increasing the risk of unequal literacy development. Therefore, investigating early reading skills in Pulau Seribu is uniquely important for understanding how contextual constraints influence children's reading readiness and the types of support they receive at home and in school.

Despite multiple efforts to strengthen literacy instruction nationally, early-grade teachers continue to face the reality that many children enter Grade 1 without adequate reading readiness. This mismatch between curriculum expectations and actual student skills often forces teachers to teach foundational reading skills while simultaneously addressing broader subject content, thereby increasing instructional burden.

Although several studies have explored early literacy in Indonesian schools, few have systematically mapped the types of reading difficulties encountered in remote island communities or examined how teachers and parents support reading development within such contexts. Even fewer studies explicitly link these findings to the development of early literacy screening tools that are valid, reliable, and contextually appropriate for diverse Indonesian settings. This represents a significant gap, given that no existing screening instrument is tailored to the specific challenges faced by schools in the Thousand Islands.

Therefore, this study aims to map early reading difficulties among children from preschool to Grade 2 in public schools in Pulau Seribu, while also examining the roles of teachers and parents in supporting literacy development. Beyond providing descriptive insights, the findings serve as a critical initial step in the development of an early literacy screening tool

that reflects Indonesia's varied educational contexts. The significance and novelty of this study lie in its focus on a geographically isolated region, its integration of perspectives from both teachers and parents, and its contribution to the foundational evidence base required for constructing culturally and contextually relevant early literacy assessments.

Based on the background presented, it is understandable that reading skills in children aged from preschool to early elementary school are crucial for success in subsequent levels of learning. However, many children still face reading barriers, stemming from both internal factors (e.g., cognitive readiness, language skills, and concentration) and external factors (e.g., teacher teaching methods, parental support, availability of reading resources, and school environmental conditions).

This situation is further complicated in island regions with limited access to education, such as the Pulau Seribu. Teachers often lack structured data on children's reading achievement, so the learning strategies they provide tend to be general and fail to address each child's specific needs. However, with a more detailed mapping of reading challenges, teachers can more easily determine the appropriate form of guidance and support.

Therefore, this study was designed to map the reading challenges experienced by children from preschool to second grade in public schools in the Pulau Seribu. This mapping is expected to illustrate:

1. Types of reading problems include any issues that appear in children aged from preschool to 2nd grade of elementary school, ranging from letter recognition and blending sounds to reading simple words and understanding sentences.
2. Assessing basic reading ability in children at the Thousand Islands state school enables us to determine the extent to which each child has mastered basic literacy, taking into account their level of development.
3. The role of teachers and parents in accompanying children learning to read, including strategies, support, and challenges faced.

Methods

This study employed a quantitative descriptive survey design as the initial phase of mapping early reading readiness and literacy support among lower-grade elementary school students. This survey approach was selected because it allows researchers to identify early patterns, challenges, and variations in literacy practices, which subsequently serve as the foundation for developing an early literacy screening instrument (Creswell & Creswell, 2017). Participants consisted of 48 teachers and 309 parents of Grade 1 and Grade 2 students from several public elementary schools in the Thousand Islands (Kepulauan Seribu). Purposive sampling was used, as respondents were selected based on their direct involvement in children's early reading processes. This technique is appropriate for exploratory studies that require information from individuals who best understand the phenomenon.

Two questionnaires were used in this study:

a. Parent Questionnaire

The instrument contained 11 dichotomous (yes/no) items assessing:

- 1) home literacy support,
- 2) children's reading habits,
- 3) monitoring of children's reading progress,
- 4) parents' perceptions of their children's reading abilities.

b. Teacher Questionnaire

The instrument consisted of:

- 1) three open-ended questions describing types of reading difficulties and classroom challenges, and
- 2) nine closed-ended (yes/no) questions regarding literacy facilities, instructional strategies, and teachers' perceptions of students' reading skills.

These instruments functioned as exploratory survey tools, not as early literacy screening instruments. Therefore, validity and reliability analyses were conducted to ensure the quality of the questionnaires as data collection tools in this initial stage.

This research used content validity and construct validity. Content validity was established through expert judgment conducted by Dr. Adinugroho, a researcher with a PhD in Special Education and extensive expertise in early literacy and special education research. She evaluated the relevance, clarity, and representativeness of each item in relation to key components of early literacy, including phonemic awareness, decoding, vocabulary, comprehension, and literacy environment. Based on her assessment, some items were revised for clarity, and several were removed due to low relevance. Internal expert judgment is acceptable in preliminary instrument development (DeVellis, 2017), and external experts will be involved in subsequent stages to strengthen content validity. Construct validity was examined using item-total correlation in JASP. In the parent questionnaire, two items with correlations below 0.20 were removed. Meanwhile in the teacher questionnaire, three items were removed due to low correlations. Item removal improved the overall consistency and construct coherence of both instruments.

Reliability was assessed using Cronbach's Alpha in JASP with the following results:

- a. Parent Questionnaire
 - Initial reliability: 0.496
 - After removing two low-correlation items: Cronbach's Alpha increased to 0.607
- b. Teacher Questionnaire
 - Initial reliability: 0.395
 - After removing three low-correlation items: Cronbach's Alpha increased to 0.619

Although categorized as marginal, these values are acceptable for an exploratory study with a limited number of dichotomous items, which naturally produce lower alpha coefficients (Hair et al., 2010; DeVellis, 2017). These findings serve as the basis for improving the instrument, including adding more items or adopting Likert scales in future development stages.

Questionnaires were distributed through the School Principal and Vice Principal, who then delivered them to teachers and parents via homeroom teachers. Participation was voluntary, and respondents received an explanation of the research purpose prior to completing the questionnaire. Data collection followed a cross-sectional approach, conducted at a single point in time. Closed-ended responses were analyzed using descriptive statistics (frequencies and percentages). Open-ended responses were analyzed through simple thematic categorization to identify patterns of reading difficulties, teacher experiences, and types of literacy support provided at home and in school. This analysis provided a comprehensive understanding of early literacy conditions in the Thousand Islands.

The study received ethical approval from the relevant institutional body. Respondents provided informed consent and no personal identifying information was collected. All data were kept anonymous and used solely for academic purposes. The study adhered to ethical guidelines for educational research involving children and adult respondents.

Results and Discussion

This study used two questionnaires: a teacher questionnaire and a parent questionnaire. The teacher questionnaire consisted of 12 items covering aspects of literacy facility availability, reading support intensity, pedagogical competence, teaching strategies, and teachers' perceptions of student ability. Meanwhile, the parent questionnaire consisted of 11 items that explored family involvement in supporting children's reading, the availability of literacy facilities at home, and parents' perceptions of their children's abilities and reading interests. A reliability test was conducted on these questionnaires, as shown in Tables 1 and 2.

Table 1. Teacher Questionnaire Reliability Test Results

Coefficient	Estimate	Std. Error	95% CI	
			Lower	Upper
Coefficient α	0.605	0.047	0.513	0.696

Table 2. Parent Questionnaire Reliability Test Results

Coefficient	Estimate	Std. Error	95% CI	
			Lower	Upper
Coefficient α	0.619	0.140	0.346	0.893

Although the initial reliability values were low, item refinement improved internal consistency. According to DeVellis (2017), reliability values around 0.60 may be acceptable in early-stage exploratory studies, especially when using dichotomous items. These results indicate that both questionnaires are acceptable for preliminary mapping but require further refinement for future use.

The following data were analyzed descriptively to illustrate the general trends in reading practices and challenges in primary schools, as reported in the teacher questionnaire. A summary of the responses is presented in Table 3.

Table 3. Summary of Teacher Responses (n = 48)

Theme	Indicator	YES (%)	NO (%)
School Literacy Facilities	School has a library or reading corner	100	0
Reading Support Time	Teacher allocates special time for reading instruction	96,6	3,4
	Teacher allocates time regularly	86,2	13,8
Reading Pedagogical Competence	Understands stages of teaching reading	89,7	10,3
	Uses specific reading methods	93,1	6,9
	Uses specific reading theories	82,8	17,2
Teaching Strategy Based on Experience	Teaches based on personal experience	58,6	41,4
Perception of Students	Students have fast comprehension	41,4	58,6

Theme	Indicator	YES (%)	NO (%)
	Students with reading difficulties have low comprehension	82,8	17,2

Overall, the availability of literacy facilities in schools was adequate, with all schools in the study having a library or reading corner. Regarding teacher involvement, most teachers actively allocated time to assist students in learning to read, both through special sessions (96,6%) and regular sessions (86,2%).

In terms of pedagogical competence, the majority of teachers claimed to understand the stages of teaching reading (89.7%) and to use specific methods (93.1%), although some teachers still relied on personal experience (58.6%) rather than formal theory (17.2%). This suggests that reading instruction in schools tends to be more practical and empirical than systematically theory-based.

From teachers' perspectives on students' abilities, most teachers assessed that students' comprehension skills required more time to develop (58.6% indicated not quickly), and reading difficulties were often associated with low comprehension (82.8%). This suggests that reading difficulties are not solely related to technical aspects (e.g., letter recognition) but also to cognitive abilities and understanding.

Teachers identified decoding and phonological processing difficulties as the most common challenges. These findings align with Scarborough's Reading Rope (2001), which identifies phonological awareness and decoding as lower-strand skills that must be firmly established before higher-level comprehension can occur. The high proportion of students struggling with decoding suggests a gap in early literacy preparation prior to entering primary school.

The teacher questionnaire consisted of 3 open-ended questions and 9 closed-ended questions with yes or no answers. A summary of the results from the 3 open-ended questions in Table 4.

Table 4. Number of Students Experiencing Reading Difficulties (Based on Teacher Estimates)

Type of Difficulty	Total Students Reported
General reading difficulties	109 students
Decoding difficulties	113 students
Reading comprehension difficulties	196 students

Comprehension-related difficulties were the most frequently reported, exceeding decoding challenges. This pattern suggests weaknesses not only in foundational skills such as phonemic awareness and decoding but also in vocabulary and linguistic comprehension—components central to the Simple View of Reading ($R = D \times C$). Teachers' reports indicate that many children struggle with both strands of the reading rope: word recognition and language comprehension.

The parent questionnaire consisted of 11 items that explored family involvement in supporting children's reading, the availability of literacy facilities at home, and parents' perceptions of their children's abilities and reading interests. Data were analyzed descriptively to examine general patterns of reading support within the family environment. A summary of responses is presented in Table 5.

Table 5. Summary of Parent Responses (n = 309)

Theme	Indicator	YES (%)	NO (%)
Child Development Monitoring	Regularly monitors child's growth and development	96,76	3,24
	Has assessed child's cognitive abilities	86,08	13,92
Home Literacy Facilities	Has a library or reading corner at home	23,30	76,70
Reading Support	Helps child when experiencing reading difficulties	99,35	0,65
	Allocates special time for reading instruction	96,12	3,88
	Provides regular reading instruction	88,67	11,33
Parents' Teaching Competence	Understands stages of teaching reading	85,11	14,89
	Uses specific reading methods	79,87	20,13
	Teaches based on personal experience	85,11	14,89
Perception of Child	Child has low comprehension	34,30	65,70
	Child is interested in reading/ books	90,29	9,71

Overall, parents demonstrated a very high level of involvement in supporting children's reading. Almost all respondents (99.35%) actively helped their children when difficulties arose and allocated special time (96.12%), although consistency in routine support remained a challenge for a small portion of parents (11.33% indicated that they did not regularly do so). Regarding competence, most parents reported understanding the stages of teaching reading (85.11%) and using specific methods (79.87%), although many still relied on personal experience (85.11%) rather than theory-based or formal training.

However, there was a gap in literacy facilities, as most households did not have a dedicated reading corner or space (76,70%), which could affect the consistency of reading habits at home. From the parents' perspective, most rated their children as having high reading interest (90.29%) and adequate comprehension ability (65.70%), indicating that reading barriers are more related to methods and facilities rather than children's motivation.

The majority of parents reported monitoring their children's reading progress and providing literacy support at home. However, nearly half of the children were reported as not yet reading independently, suggesting limited development in foundational reading components such as decoding and fluency—two skills emphasized in the Simple View of Reading (Gough & Tunmer, 1986) as critical for reading comprehension. This pattern indicates that many children may still be in the early stages of reading readiness.

The analyzed questionnaire data from teachers (n = 48) and parents (n = 309) provide an initial overview of **reading readiness and early reading ability** in children from preschool to grade 2. The data show variations in access to literacy facilities, intensity of reading support, teaching methods, and perceptions of children's abilities. These findings are crucial for understanding patterns of reading difficulties in schools and at home, as well as the role of stakeholders in supporting children's reading. The discussion that follows will explore these findings thematically to assess the alignment between teachers and parents and their implications for the development of reading readiness screening tools.

Literacy Facilities at Home and School

Data analysis shows that all schools in the study had a library or reading corner (100%), whereas most parent households lacked dedicated literacy facilities (76,7%). This difference

suggests that physical access to reading materials is more readily available at school than at home, indicating that early reading interventions rely not only on family support but also on school environments that provide learning resources. This aligns with previous findings that literacy facilities are key factors in fostering reading interest and early literacy skills (Snow, 2002; Neuman & Celano, 2006).

Intensity of Reading Support by Teachers and Parents

Questionnaire results indicate that most teachers allocated special time to support reading (96.6%) and did so regularly (86.2%), while parents actively helped children with reading difficulties (99.35%) and provided regular instruction (88.67%). Despite high engagement from both parties, there was variation in routine consistency, particularly among parents (11% to 33% less consistent). This emphasizes that reading support is a shared responsibility between school and family, and early literacy development is strongly influenced by alignment between these two environments.

Reading Teaching Competence: Theoretical vs Practical Approaches

The majority of teachers and parents reported understanding reading instruction stages (teachers, 89.7%; parents, 85.11%) and using specific methods (teachers, 93.1%; parents, 79.87%), yet many still relied on personal experience (teachers, 58.6%; parents, 85.11%). This indicates that reading instruction practices remain largely practical-empirical, although teachers tend to follow more formal methods than parents. This is relevant for screening tool development, as the instrument must account for variations in instructors' competence and methods used both at home and at school.

Teachers' and Parents' Perceptions of Children's Abilities

Teachers perceived that most students have slower comprehension (58,6%) and that reading difficulties are often associated with low comprehension (82,8%). In contrast, parents generally viewed their children as having adequate comprehension (65,7%) and high reading interest (90,29%). This discrepancy likely stems from the difference between teachers' systematic classroom observations and parents' informal home observations. The difference highlights the importance of objective assessment through screening tools to identify reading difficulties without bias from a single perspective accurately.

Implications for Reading Readiness Screening Tool Development

These findings provide a foundation for developing valid and comprehensive reading screening instruments. The data indicate that reading difficulties are influenced not only by children's abilities but also by literacy facilities, intensity of reading support, and teaching methods. Therefore, the screening tool should:

1. Objectively measure early literacy skills.
2. Consider variations in support from teachers and parents.
3. Include indicators relevant to commonly used reading instruction stages at school and home.

Overall, the results reinforce theoretical models such as the Simple View of Reading and Scarborough's Reading Rope, which emphasize that strong foundational skills and rich literacy environments are essential for reading comprehension. This supports the urgent need for an

early literacy screening instrument tailored to the unique geographic and educational context of the Thousand Islands.

Conclusion

Based on questionnaire responses from teachers (n = 48) and parents (n = 309), this study provides an initial overview of reading difficulties among children from preschool to Grade 2 in the Thousand Islands (Pulau Seribu). Quantitative findings indicate that reading difficulties were most frequently related to reading comprehension (82.8%), followed by decoding difficulties such as spelling or blending sounds (72.9%), and letter recognition challenges (64.5%). In addition, 76.7% of households did not have a reading corner, and nearly 51.4% of children had not yet begun to read independently. It is indicating that the home literacy environment remains very limited. Reading difficulties are common, with comprehension being the most widespread issue, highlighting the need for comprehensive support beyond just technical decoding. Early assessment and screening are crucial for identifying varied literacy levels and guiding targeted interventions. While teachers and parents both play critical roles, their differing perceptions and support limitations necessitate objective screening tools and stronger collaboration to accurately address children's needs.

The findings advocate for targeted educational reforms in resource-limited island regions, centering on strengthening early literacy instruction by prioritizing phonemic awareness and decoding as foundational skills. Furthermore, the study calls for improving home literacy environments through parent training and the establishment of basic reading resources, alongside providing teachers with professional development grounded in established theoretical frameworks (e.g., the Simple View of Reading). These measures must be supported by the systematic monitoring and early identification of at-risk students prior to Grade 1 entry. This preliminary work serves as an empirical basis for designing a specialized reading readiness screening instrument that assesses both decoding and linguistic comprehension while being adapted to geographical and resource limitations. Subsequent research is recommended to establish the validity and reliability of this instrument across diverse samples, integrate direct child assessments to complement self-report data, conduct longitudinal studies of reading development, and develop and evaluate bespoke literacy interventions for remote contexts. It is noted, however, that the current conclusions must be interpreted cautiously due to limitations, including reliance on self-report data, a restricted research site, and the marginal reliability of the questionnaire used.

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