

A Psycholinguistics Analysis of Dyslexia in Elementary School of South Tapanuli

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Abstrak

Penelitian ini bertujuan untuk mengidentifikasi karakteristik kesulitan membaca dan belajar pada siswa sekolah dasar di Tapanuli Selatan, menganalisis dampak psikologis yang muncul, serta mengkaji faktor-faktor yang berkontribusi terhadap kesulitan tersebut. Penelitian ini menggunakan pendekatan kualitatif dengan melibatkan enam siswa sekolah dasar sebagai partisipan. Data dikumpulkan melalui observasi dan penilaian terhadap kemampuan membaca, menulis, mengeja, dan berhitung, serta pengamatan terhadap respons psikologis dan perilaku siswa selama kegiatan pembelajaran. Hasil penelitian menunjukkan bahwa partisipan memiliki profil kesulitan yang berbeda. P1 menunjukkan karakteristik *double-deficit dyslexia*, P2 dan P3 menunjukkan karakteristik *phonological dyslexia*, sedangkan P4 menunjukkan karakteristik *surface dyslexia*. P5 menunjukkan kesulitan yang lebih dominan dalam kemampuan berhitung yang mengarah pada profil *dyscalculia* dengan keterlambatan membaca, sementara P6 menunjukkan kesulitan yang lebih luas pada kemampuan literasi dan numerasi dasar. Kesulitan akademik tersebut juga berkaitan dengan rendahnya kepercayaan diri, kecemasan, frustrasi, keraguan untuk berpartisipasi, dan kecenderungan menarik diri. Faktor yang berkontribusi meliputi kesulitan pemrosesan fonologis, pengenalan kata, memori, kemampuan numerik, serta faktor lingkungan dan dukungan pendidikan. Penelitian ini menegaskan pentingnya identifikasi dini, pembelajaran yang disesuaikan dengan kebutuhan individu, dukungan psikologis, serta kerja sama antara guru dan keluarga dalam membantu siswa dengan kesulitan belajar.

Kata Kunci: disleksia, kesulitan belajar, dampak psikologi, sekolah dasar, Tapanuli Selatan

Abstract

This study aims to identify the characteristics of reading and learning difficulties among elementary school students in South Tapanuli, examine their psychological impacts, and explore the factors contributing to these difficulties. A qualitative approach was employed with six elementary school students as participants. Data were collected through observation and assessment of reading, writing, spelling, and arithmetic abilities, as well as observations of students' psychological and behavioral responses during learning activities. The findings indicate that the participants demonstrated different learning profiles. P1 showed characteristics consistent with *double-deficit dyslexia*, P2 and P3 showed characteristics of *phonological dyslexia*, while P4 demonstrated characteristics associated with *surface dyslexia*. P5 showed more prominent difficulties in arithmetic, suggesting a *dyscalculia* profile accompanied by reading delay, whereas P6 experienced broader difficulties in basic literacy and numeracy skills. These academic difficulties were also associated with low academic confidence, anxiety, frustration, hesitation to participate, and social withdrawal. Contributing factors included difficulties in phonological processing, word recognition, memory, and numerical processing, as well as environmental and educational factors. The study highlights the importance of early identification, individualized instruction, psychological support, and collaboration between teachers and families in supporting students with learning difficulties.

Keywords: *dyslexia, learning difficulties, psychological impact, elementary students, South Tapanuli*

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1. Introduction

Dyslexia is a persistent learning difficulty that primarily affects the acquisition and development of accurate and fluent word reading and spelling. Although estimates vary according to diagnostic criteria, assessment procedures, and language context, a recent systematic review and meta-analysis estimated the pooled prevalence of developmental dyslexia among primary school children at approximately 7.1% worldwide (Yang et al., 2022). Dyslexia therefore represents an important educational concern because difficulties in reading and spelling can interfere with students' access to the broader curriculum. Research has consistently identified phonological processing as an important component of reading difficulties in many learners with dyslexia, particularly in the development of decoding and word recognition (Vellutino et al., 2004; Snowling, 2000). Earlier experimental work also demonstrated a strong relationship between phonological awareness and subsequent reading acquisition (Bradley & Bryant, 1983). However, contemporary research increasingly emphasizes that dyslexia is heterogeneous, and that reading difficulties cannot be adequately understood through a single cognitive deficit or a single behavioral profile.

The heterogeneity of dyslexia is particularly important when examining individual students. Differences may occur in phonological awareness, rapid automatized naming, orthographic processing, working memory, word recognition, and reading fluency. The double-deficit hypothesis, for example, proposes that weaknesses in phonological processing and rapid automatized naming may jointly contribute to severe reading difficulties in some learners (Wolf & Bowers, 1999). At the same time, research on developmental dyslexia has identified different patterns of reading difficulty, including difficulties associated with phonological decoding and irregular or whole-word recognition (Castles & Coltheart, 1993). These patterns should, however, be interpreted as profiles of reading performance rather than automatically treated as formal clinical subtypes without comprehensive assessment. Recent research similarly emphasizes the need for multidimensional assessment when identifying children with dyslexia because reading difficulties may overlap with other language, learning, and developmental difficulties (Sadusky et al., 2022). Consequently, examining individual patterns of performance is essential for distinguishing dyslexia-related reading difficulties from broader learning problems.

Language and orthographic context also need to be considered when studying dyslexia. The relationship between phonological processing and reading development is influenced by the characteristics of the writing system, including the consistency of sound-symbol correspondences across languages (Goswami, 2002). This issue is particularly relevant in multilingual and linguistically diverse contexts, where students may use more than one language or local variety in everyday communication while receiving formal literacy instruction in another language. Research on literacy and dyslexia across Southeast Asian contexts has emphasized the importance of construct validity and culturally appropriate assessment because measures developed in one linguistic or educational context cannot necessarily be transferred without considering differences in language and literacy practices. This concern is directly relevant to Indonesia, where Standard Indonesian has a relatively transparent orthographic system and where researchers have developed reading-assessment measures incorporating phonological awareness, rapid naming, spelling, and working memory as important reading-related skills (Borleffs et al., 2017). Therefore, investigating students' reading difficulties in Indonesia requires attention not only to general theories of dyslexia but also to the linguistic and educational context in which literacy is acquired.

The consequences of dyslexia extend beyond academic performance. Persistent difficulties in reading and writing may influence students' perceptions of their academic competence and their willingness to participate in classroom activities. A scoping review of research on dyslexia and mental health found that children with dyslexia are at increased risk of internalizing and externalizing difficulties, although the relationship is influenced by individual, family, and community factors

(McLoughlin et al., 2023). Earlier research similarly reported associations between dyslexia, stress, self-esteem, anxiety, and psychosocial functioning (Alexander-Passe, 2008; Burden, 2008; Terras et al., 2009). These findings suggest that psychological responses should not be treated as inherent symptoms of dyslexia itself. Rather, anxiety, frustration, reduced confidence, or withdrawal may emerge through the interaction between persistent academic difficulties and students' experiences of failure, comparison with peers, teacher expectations, and social responses. For this reason, a comprehensive investigation of dyslexia should consider both students' academic performance and their psychological and social experiences.

The educational response to dyslexia is another important consideration. Evidence from systematic reviews and meta-analyses indicates that explicit and systematic literacy instruction can improve foundational reading skills among elementary students with reading difficulties and dyslexia. Effective interventions commonly address the relationships between sounds, letters, words, and meaning and are often delivered individually or in small groups (Al Otaiba et al., 2023). A large systematic review and meta-analysis of reading interventions conducted over four decades also found a significant overall effect of instruction on reading outcomes among students with or at risk of dyslexia, although the magnitude of effects varied according to intervention characteristics and student outcomes (Hall et al., 2026). Multisensory structured-language approaches have likewise been incorporated into evidence-informed literacy practices, although the evidence should not be interpreted as demonstrating that one named program, such as Orton-Gillingham, is universally superior to other structured approaches (Ritchey & Goeke, 2006; Schlesinger & Gray, 2017). These findings reinforce the importance of systematic, explicit, and appropriately targeted literacy instruction rather than relying solely on general classroom instruction for students who experience persistent reading difficulties.

Despite the growing body of international research, important contextual gaps remain. Much of the established literature on dyslexia has been produced in educational systems with relatively extensive assessment resources, specialized personnel, and established intervention frameworks. Research in Indonesia has demonstrated the importance of developing assessment approaches that are appropriate for Standard Indonesian (Borleffs et al., 2017), while broader research on literacy assessment in Southeast Asia has highlighted challenges concerning the validity and interpretation of literacy measures across cultural and linguistic contexts. However, relatively little research has documented how dyslexia-related learning difficulties are manifested and experienced by elementary school students in specific rural or semi-rural Indonesian settings. In particular, there is limited empirical evidence concerning the interaction between students' literacy profiles, psychological responses, and educational environments in South Tapanuli.

This gap is important because identifying reading difficulties in a particular local context involves more than applying categories developed in other educational systems. Students in South Tapanuli may encounter different combinations of linguistic practices, family support, learning opportunities, school resources, and instructional experiences. Such contextual factors should not be assumed to cause dyslexia, but they may influence how reading difficulties are recognized, interpreted, and supported. Moreover, linguistic diversity should be treated as an important contextual variable rather than as a direct explanation for dyslexia. Careful observation of students' actual reading, writing, spelling, and numeracy performance is therefore necessary to distinguish persistent learning difficulties from differences that may arise from language experience or educational opportunity.

Accordingly, the present study investigates learning difficulties among six elementary school students in South Tapanuli, Indonesia. Rather than assuming that all students with reading difficulties demonstrate the same pattern, the study examines individual profiles of reading, writing, spelling, and arithmetic performance and considers whether these profiles are consistent with particular patterns described in the dyslexia literature. The study also examines the psychological and behavioral responses associated with students' learning difficulties and explores individual and environmental factors that

may shape their educational experiences. Importantly, the classifications reported in this study are interpreted as observed learning profiles rather than formal clinical diagnoses because comprehensive diagnostic assessment requires qualified professionals and standardized procedures.

By examining these dimensions together, this study seeks to contribute context-sensitive evidence to the growing literature on dyslexia and learning difficulties in Indonesia. The study is particularly intended to demonstrate the heterogeneity of students' learning profiles and the importance of considering cognitive-linguistic, psychological, and educational factors simultaneously. The findings may provide a basis for teachers, parents, and educational stakeholders to recognize persistent learning difficulties earlier and to develop more individualized and supportive approaches to literacy instruction in contexts where specialized dyslexia services may be limited.

2. Method

2.1 Research Design

This study employed a descriptive qualitative field research design to examine learning difficulties among elementary school students in South Tapanuli, Indonesia. A qualitative approach was selected because the study focused on describing individual learning profiles and understanding students' academic, psychological, and educational experiences in their natural school contexts. The study did not employ a mixed-methods design because no statistical or quantitative analysis was conducted. Instead, the analysis focused on descriptive interpretation of observational and assessment data.

The study examined students' performance in reading, writing, spelling, and arithmetic, as well as their behavioral and psychological responses during learning activities. Particular attention was given to patterns of difficulty that could be interpreted in relation to the dyslexia literature, while recognizing that observational findings alone do not constitute a formal clinical diagnosis. The study therefore used the term *learning difficulties* broadly and interpreted dyslexia-related characteristics cautiously.

2.2 Participants and Research Setting

The participants were six elementary school students experiencing persistent difficulties in one or more areas of literacy and numeracy. The participants were selected from three locations in South Tapanuli, namely Sipirok, Sitaratoit Village, and Aek Natas Village, to represent variation in geographical, educational, and socioeconomic contexts.

The participants consisted of students in Grades 4–6 and were below 14 years of age. They were identified for participation based on observed or previously reported difficulties in reading, writing, spelling, and/or arithmetic. The study used purposive selection because the participants were selected according to characteristics relevant to the research objectives.

For confidentiality, the participants were identified using the codes P1–P6 rather than their real names. No personally identifying information is reported in the findings. The use of participant codes also ensures consistency between the ethical procedures and the presentation of the individual cases.

2.3 Data Collection

Data were collected through direct observation and document-based assessment of the participants' academic performance. The observations were conducted in the participants' educational environments to capture their responses while performing ordinary academic tasks.

The data collection focused on four main areas: (1) reading, (2) writing, (3) spelling, and (4) arithmetic. During reading activities, attention was given to reading accuracy, fluency, word recognition, decoding, pronunciation, and difficulties with unfamiliar words. Writing and spelling activities were examined for letter omissions, substitutions, reversals, sequencing errors, and difficulties

in constructing written responses. Arithmetic activities were observed to identify difficulties in recognizing numbers, performing basic calculations, and following numerical procedures.

In addition to academic performance, the researcher observed students' behavioral responses during difficult tasks. Particular attention was given to hesitation, frustration, avoidance, reluctance to participate, anxiety when asked to perform publicly, and changes in confidence during academic activities. These observations were used to describe the psychological and behavioral dimensions associated with the students' learning difficulties rather than to establish clinical psychological diagnoses.

Relevant school documents and available academic records were also considered where appropriate to provide additional information about students' learning performance. The use of multiple sources of information helped the researcher compare observed classroom performance with available educational information and reduce reliance on a single observation.

2.4 Data Analysis

The data were analyzed using the interactive model of qualitative data analysis proposed by Miles, Huberman, and Saldaña (2014). The analysis consisted of four interconnected activities: data collection, data condensation, data display, and conclusion drawing/verification.

First, the researcher collected and organized observational notes and relevant assessment information for each participant. Second, the data were condensed by selecting information directly related to the research focus, particularly reading, writing, spelling, arithmetic, psychological responses, and contributing factors. Third, the condensed data were displayed in participant profiles and comparative tables to facilitate the identification of similarities and differences across cases. Finally, conclusions were drawn by comparing the emerging patterns with relevant concepts and previous research on dyslexia and learning difficulties. The conclusions were continuously checked against the original observations to ensure that the interpretations remained grounded in the collected data.

The analysis was conducted case by case before cross-case comparison. This procedure allowed the researcher to identify distinctive patterns among the six participants. For participants whose characteristics were consistent with descriptions in the dyslexia literature, the findings were interpreted as profiles or characteristics associated with particular patterns of dyslexia, rather than as definitive clinical subtypes. Participants whose difficulties extended beyond reading and spelling were considered separately to avoid incorrectly classifying broader learning difficulties as dyslexia.

2.5 Ethical Considerations

Because the study involved children under the age of 14, ethical considerations were applied throughout the research process. Written informed consent was obtained from the participants' parents or legal guardians before data collection, and permission to conduct the study was obtained from the relevant schools. The researcher explained the purpose and procedures of the study to the participating students in language appropriate to their age and ensured that participation did not interfere unnecessarily with their learning activities.

The confidentiality and privacy of participants were maintained throughout the study. Real names, personally identifying information, and other details that could reveal participants' identities were excluded from the manuscript. Participant codes (P1–P6) were used in all research records and reporting. The collected information was used solely for research purposes.

The researcher also took care to avoid labeling students as “dyslexic” solely on the basis of classroom observations. Because formal diagnosis of specific learning disorders requires appropriate assessment by qualified professionals, the classifications presented in this study refer to observed learning profiles and characteristics. Where the observed pattern suggested dyslexia, dyscalculia, or

broader developmental difficulties, this was reported cautiously and distinguished from a formal clinical diagnosis.

3. Findings

The findings reveal that the six participating elementary school students demonstrated different patterns of difficulty in reading, writing, spelling, and numeracy. The difficulties were not identical across participants; rather, each student showed a distinctive combination of academic, linguistic, and behavioral characteristics. Based on the observational data and school-related documents, the participants were grouped according to their dominant learning profiles. These classifications are used descriptively to represent patterns observed in the data and should not be interpreted as formal clinical diagnoses of dyslexia.

3.1 Individual Profiles of Learning Difficulties

Participant 1 (P1), a sixth-grade student from Sipirok, demonstrated persistent difficulties in both accurate word reading and reading fluency. The student frequently required additional time to decode unfamiliar words and showed difficulty maintaining accuracy when reading longer or more complex words. Spelling performance also indicated difficulty connecting sounds with written forms consistently. In addition, the student experienced difficulty completing reading-related classroom tasks within the expected time. The combination of phonological and processing-related difficulties suggests a double-deficit-like profile, particularly involving phonological processing and reading fluency. However, this interpretation is limited to the characteristics observed in the present study and does not constitute a clinical diagnosis.

P2, a fourth-grade student from Sipirok, showed characteristics primarily associated with phonological reading difficulties. The student experienced problems identifying and manipulating individual sounds in words, particularly when encountering unfamiliar or multisyllabic words. Reading errors frequently involved substitutions, omissions, or inaccurate decoding. Similar difficulties appeared in spelling, in which the student sometimes wrote words according to an incomplete or inaccurate representation of their sounds. The findings indicate that difficulty with phonological processing was a prominent feature of this student's literacy profile.

P3, also a fourth-grade student, demonstrated a pattern similar to P2, with difficulties particularly evident in decoding and phonological processing. The student could recognize familiar words more successfully but experienced greater difficulty when reading unfamiliar words or words requiring careful sound-by-sound analysis. Spelling errors were also observed, particularly when the student attempted to represent unfamiliar words in written form. These characteristics suggest a phonological-difficulty profile, although the available observational data are insufficient to establish a formal subtype of dyslexia.

P4, a fourth-grade student from Sitaratit Village, demonstrated relatively stronger performance when processing familiar, regularly encountered words but experienced difficulty with irregular or visually unfamiliar word forms. The student appeared to rely substantially on phonological decoding and sometimes read words according to their expected sound patterns rather than their conventional orthographic forms. Spelling performance similarly showed inconsistencies in representing irregular word forms. This pattern is consistent with a surface-reading difficulty profile, particularly in relation to orthographic word recognition.

P5, a fifth-grade student from Aek Natas Village, showed a distinctive combination of literacy and numeracy difficulties. The student's reading difficulties were comparatively mild, while problems became more apparent during arithmetic activities. The student experienced difficulty maintaining numerical sequences, interpreting simple arithmetic operations, and completing calculations accurately.

These characteristics suggest an acquired-dyscalculia-like profile accompanied by mild reading difficulty. Because the present study was not designed as a neuropsychological diagnostic assessment, this classification is used only to describe the observed pattern of academic difficulty.

P6, a fifth-grade student from Aek Natas Village, demonstrated broader academic difficulties affecting several learning activities. The student experienced difficulties in reading, writing, spelling, and arithmetic and required repeated instructions and substantial assistance when completing classroom tasks. The student's performance also appeared to be affected by limited task persistence and difficulty maintaining attention during demanding academic activities. The overall pattern is therefore described as a broad or mixed learning-difficulty profile rather than assigning a definitive diagnostic label.

Across the six cases, the findings demonstrate substantial heterogeneity. Some participants showed difficulties concentrated primarily in phonological processing, whereas others demonstrated greater problems with orthographic processing, reading fluency, or numeracy. The findings therefore support an individualized understanding of learning difficulties rather than treating all students with dyslexia-related characteristics as a homogeneous group.

3.2 Psychological and Behavioral Responses

The students' academic difficulties were accompanied by several psychological and behavioral responses during learning activities. These responses were most visible when students were required to read aloud, spell unfamiliar words, complete written assignments, or solve arithmetic problems in front of teachers or peers.

P1 frequently appeared hesitant when asked to read aloud and required additional time before responding. The hesitation was particularly visible when the student encountered unfamiliar words. P2 and P3 similarly demonstrated signs of discomfort during reading activities, including pauses, repeated attempts, and reluctance to answer immediately after making an error. These responses suggest that repeated difficulty with literacy tasks may influence students' willingness to participate in classroom activities.

P4 showed greater hesitation when dealing with unfamiliar or irregularly spelled words. Rather than immediately attempting the task, the student sometimes waited for additional guidance. P5 demonstrated comparatively greater confidence in literacy activities but became more hesitant during arithmetic tasks. This contrast indicates that students' emotional and behavioral responses may vary according to the particular academic domain in which they experience difficulty.

P6 displayed the broadest behavioral response. Difficulties across several academic domains were accompanied by reduced persistence when tasks became demanding and a greater need for teacher assistance. The student sometimes required repeated explanations before continuing the activity.

Taken together, the findings indicate that psychological responses were closely connected to the immediate learning situation. Hesitation, avoidance, reduced participation, and dependence on teacher assistance were particularly visible during tasks that exposed students' academic weaknesses. These observations do not establish that dyslexia directly causes psychological problems; rather, they suggest that persistent academic difficulty may interact with classroom experiences and students' perceptions of their own performance.

3.3 Contributing Factors

The findings also indicate that the students' learning difficulties cannot be understood solely in terms of individual academic performance. Several contextual factors appeared relevant, including the students' learning environments, opportunities for individualized assistance, family and school support, and the availability of appropriate learning strategies.

At the individual level, differences in phonological processing, word recognition, reading fluency, spelling, and numerical processing contributed to the variation among participants. At the

educational level, students who required additional explanation or repeated practice appeared to benefit from more individualized assistance. Differences in learning opportunities and the extent of support available to students were also relevant to their classroom experiences.

The findings further suggest that linguistic and educational context should be considered when interpreting students' reading performance. In a multilingual and locally diverse environment such as South Tapanuli, difficulties in reading should be distinguished from difficulties resulting from limited exposure to particular vocabulary, instructional language, or orthographic patterns. Consequently, assessment should consider students' linguistic backgrounds and learning experiences rather than relying exclusively on a single reading task.

Thus, the six cases demonstrate that learning difficulties emerge through diverse profiles and are experienced within particular educational and social contexts. The findings highlight the importance of individualized assessment, early identification, supportive classroom interaction, and instructional approaches that address the specific academic needs of each learner.

4. Discussion

The findings demonstrate that the six students did not exhibit a uniform pattern of reading and learning difficulties. Although all participants experienced persistent academic difficulties, the dominant characteristics varied across individuals, including phonological processing, reading fluency, orthographic processing, spelling, numeracy, and broader academic performance. This finding supports the view that reading difficulties are heterogeneous rather than representing a single, uniform cognitive profile.

The profiles of P2 and P3, for example, were characterized predominantly by difficulties in decoding unfamiliar words, phonological processing, and spelling. These observations are consistent with extensive research identifying phonological processing as an important component of reading development and reading difficulty. However, the present findings also indicate that phonological difficulty does not adequately explain every case. P1 demonstrated a combination of phonological and fluency-related difficulties, while P4 showed greater difficulty with orthographic word recognition. P5 presented a substantially different profile in which numeracy difficulties were more prominent than reading difficulties.

This heterogeneity is important when interpreting the traditional distinction between phonological and surface forms of dyslexia. Castles and Coltheart's (1993) influential framework proposed different patterns of developmental dyslexia, while Wolf and Bowers (1999) subsequently emphasized the possible interaction between phonological processing and rapid automatized naming through the double-deficit hypothesis. The present findings partially correspond to these perspectives because P1 displayed characteristics involving more than one processing dimension. Nevertheless, the current study does not provide sufficient psychometric evidence to establish these categories as formal dyslexia subtypes. They are therefore better understood as descriptive profiles of the students' observed difficulties.

The findings are also consistent with the Indonesian assessment perspective proposed by Jap, Borleffs, and Maassen (2017), who argued that identifying dyslexia in Indonesian requires attention to multiple reading and reading-related skills rather than relying on a single reading measure. Their assessment battery incorporated word reading, pseudoword reading, phoneme deletion, rapid automatized naming, working memory, spelling, writing, and arithmetic. The present study similarly found that students' difficulties extended beyond simple reading accuracy. The inclusion of spelling, writing, arithmetic, and classroom behavior therefore provides a more comprehensive picture of individual learning profiles.

At the same time, the findings should be interpreted in relation to the linguistic characteristics of Indonesian. Standard Indonesian has a relatively transparent orthographic system, and Jap et al. (2017) specifically developed an assessment battery adapted to this linguistic context. Consequently, reading difficulties observed among students in South Tapanuli should not automatically be interpreted using assumptions derived exclusively from English-speaking contexts. Students' exposure to Indonesian, local languages, and different instructional practices may influence how reading difficulties become visible in classroom performance. This reinforces the need for context-sensitive assessment rather than direct transfer of diagnostic categories developed in other orthographic and linguistic environments.

A second important finding concerns the students' psychological and behavioral responses to academic difficulty. Hesitation, reluctance to read aloud, repeated attempts, reduced participation, and dependence on teacher assistance were particularly visible when students were required to perform tasks in which they experienced persistent difficulty.

These findings are broadly consistent with the recent literature on the psychosocial dimensions of developmental dyslexia. Wilmot et al. (2023), in a scoping review of 98 studies, reported that developmental dyslexia is associated with increased risks of internalizing and externalizing difficulties, although these outcomes are influenced by individual, family, and broader contextual factors. The present study similarly suggests that students' responses should not be interpreted simply as characteristics of dyslexia itself. Rather, hesitation and avoidance may emerge through repeated experiences of academic difficulty, classroom demands, and students' perceptions of their own performance.

This distinction is particularly important because earlier literature has demonstrated that the relationship between dyslexia and self-esteem is not necessarily direct or universal. Burden (2008), for example, cautioned against assuming that dyslexia inevitably produces negative self-worth. Psychological outcomes can vary according to students' social experiences, support systems, understanding of their difficulties, and educational environments. Therefore, the hesitation and reduced participation observed among the present participants should be understood as contextual responses rather than automatic psychological consequences of dyslexia.

The findings also suggest that the social context of classroom activities matters. Reading aloud, spelling in front of peers, or answering questions under time pressure may make academic weaknesses particularly visible. For students who have repeatedly experienced difficulty, such situations may increase hesitation and reduce willingness to participate. This interpretation is consistent with the broader literature emphasizing that the psychological experience of dyslexia involves interactions among academic challenges, self-perception, and environmental responses rather than a single causal pathway.

Accordingly, teachers should avoid interpreting hesitation or task avoidance simply as laziness, lack of motivation, or unwillingness to learn. In some cases, these behaviors may represent a student's response to anticipated failure or difficulty. A supportive classroom environment can therefore become an important component of intervention because students need opportunities to participate without having their difficulties unnecessarily exposed or stigmatized.

An important contribution of the present study is the identification of P5, whose most prominent difficulty involved numeracy rather than reading. This case demonstrates why learning difficulties should not automatically be reduced to reading performance. Although dyslexia primarily concerns difficulties with word reading and spelling, students may simultaneously experience difficulties in other academic domains.

The Indonesian assessment work of Jap et al. (2017) is relevant in this respect because arithmetic was included alongside reading, spelling, writing, phonological processing, and working-memory measures in their assessment battery. The inclusion of arithmetic recognizes that reading-

related difficulties may coexist with broader academic challenges and that assessment should examine a wider range of learning processes.

However, P5 should not automatically be diagnosed with dyscalculia on the basis of the present observational data. A formal diagnosis would require a more systematic assessment of numerical cognition and mathematical achievement. The more defensible interpretation is that P5 displayed a numeracy-dominant learning-difficulty profile accompanied by mild reading difficulty.

This distinction is methodologically important because overlapping academic difficulties can have different underlying explanations. A student may experience difficulty with reading instructions and consequently perform poorly on mathematics tasks without having a primary mathematical learning disorder. Conversely, a student may have genuine difficulties with numerical processing in addition to reading problems. The present case therefore highlights the importance of distinguishing between primary and secondary academic difficulties through comprehensive assessment.

The differences among P1–P6 have important implications for educational practice. A single instructional strategy is unlikely to address all of the observed profiles equally. Students with prominent phonological difficulties may require explicit support in phoneme awareness, decoding, and spelling, whereas students with greater orthographic or fluency-related difficulties may require additional opportunities to develop accurate and automatic word recognition. Students with numeracy-dominant difficulties require different forms of assessment and instructional support.

This interpretation is supported by Hall et al. (2023), whose systematic review and meta-analysis examined 53 intervention studies involving 6,053 students in Grades K–5 with or at risk for dyslexia. The study found a significant overall effect of reading instruction on standardized reading outcomes, while also demonstrating variation across intervention characteristics and reading outcomes. Higher instructional dosage was associated with larger effects, and effects differed according to the reading domain being targeted.

The implication for the present study is that identification should not be separated from intervention planning. Once a student's dominant difficulty has been identified, teachers can use that information to determine which skills require greater instructional attention. For P2 and P3, for example, explicit instruction targeting sound–symbol relationships and decoding may be more relevant than simply assigning additional reading passages. For P1, intervention may need to address both accurate decoding and reading fluency. P4 may require greater attention to orthographic word recognition, while P5 requires targeted support in numeracy.

The findings therefore support an individualized rather than deficit-oriented approach. Students should not be viewed simply as children who "cannot read" or "are weak in mathematics." Instead, teachers need to identify the specific processes that create difficulty and provide structured opportunities to practice those skills. This approach is particularly important in contexts where access to specialist assessment or intervention may be limited.

The findings have particular significance for the South Tapanuli context because research on dyslexia identification in Indonesia remains less extensive than the international literature. The work of Jap et al. (2017) represents an important Indonesian contribution by developing a reading assessment battery specifically within the Standard Indonesian context. However, the present study extends the discussion by examining students' difficulties through qualitative observation of their everyday educational performance.

The value of this approach lies in capturing aspects that may not be fully visible through a single standardized test. Classroom observation can reveal how students respond when they encounter unfamiliar words, how much assistance they require, whether they persist with difficult tasks, and how academic difficulties influence participation. Such information is especially relevant when teachers are the first individuals to notice persistent learning difficulties.

Nevertheless, qualitative observation should complement rather than replace standardized assessment. A student displaying reading difficulty may require further evaluation to determine whether the pattern reflects dyslexia, limited instructional opportunity, language-related factors, another learning difficulty, or a combination of these conditions. Consequently, the present study should be viewed as providing descriptive evidence of dyslexia-related learning profiles, not definitive clinical diagnoses.

This distinction is particularly important in multilingual and linguistically diverse educational settings. Students' performance should be interpreted with attention to their language background, instructional language, literacy exposure, and educational history. Such contextual information can reduce the risk of incorrectly attributing every reading difficulty to dyslexia.

Overall, the findings demonstrate that the six students experienced substantially different forms of academic difficulty and responded to these difficulties in different ways. The study therefore reinforces three central points: first, dyslexia-related difficulties are heterogeneous; second, academic difficulties may interact with students' psychological and behavioral experiences; and third, identification and intervention should be individualized and context-sensitive. In South Tapanuli, strengthening teacher awareness and developing appropriate referral and assessment pathways may help ensure that students with persistent learning difficulties receive support before their academic challenges become more entrenched.

5. Conclusion

This study examined learning difficulties and dyslexia related characteristics among six elementary school students in South Tapanuli, Indonesia, focusing on individual learning profiles, psychological and behavioral responses, and contextual factors shaping their educational experiences. The findings show that the students did not display a uniform pattern of difficulty, but instead presented different combinations of phonological, orthographic, reading fluency, spelling, numeracy, and broader academic challenges. Persistent academic difficulties were accompanied by observable psychological and behavioral responses such as hesitation, reluctance to participate, repeated attempts, reduced persistence, and greater dependence on teacher assistance, particularly when students faced tasks they found difficult. These responses should not be read as direct or inevitable consequences of dyslexia; rather, they likely emerge through the interaction between ongoing academic challenges, classroom demands, students' perceptions of their own performance, and the support available in their learning environments. The case of P5 further shows that learning difficulties can extend beyond reading and spelling, underscoring the importance of examining numeracy alongside literacy. At the same time, observational characteristics alone are not sufficient to establish a formal diagnosis of dyslexia, dyscalculia, or other developmental disorders, and comprehensive assessment by qualified professionals remains necessary to distinguish among possible explanations for students' difficulties.

These findings point to the need for individualized and context sensitive identification of learning difficulties in elementary education. Teachers and schools should avoid treating students with reading difficulties as a homogeneous group and should instead identify the specific skills that require support, guided by early observation, systematic assessment, supportive classroom interaction, and appropriate referral pathways. In linguistically diverse contexts such as South Tapanuli, assessment should also account for students' language backgrounds, literacy experiences, and instructional contexts. The study is limited by its small number of participants and its qualitative, observational design, meaning the findings offer contextual description rather than population level estimates or clinical diagnoses. Future research involving larger samples, standardized literacy and numeracy assessments, longitudinal observation, and collaboration with educational psychologists or other qualified professionals would strengthen understanding of the relationship among cognitive linguistic

profiles, psychological experiences, educational environments, and learning outcomes among children with dyslexia related difficulties in Indonesia. Ultimately, recognizing learning difficulties requires more than identifying whether a child can or cannot read; understanding how a child experiences difficulty, which skills are affected, and how the child responds is essential for building more responsive and inclusive educational support.

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