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An Analysis of the Development of Early Reading Skills in Students with Intellectual Disabilities

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ABSTRACT

This study was conducted to obtain a descriptive account of the development of early reading skills in students with intellectual disabilities and to generate insights into their predicted progress in acquiring foundational reading abilities. The study involved eighteen students with intellectual disabilities enrolled in Grades 4 to 6 of elementary school. All participants were administered an early reading development assessment. The findings indicate that, at the stage of linguistic awareness, all students demonstrated adequate ability in understanding basic vocabulary and simple sentences. At the phonological awareness stage, eight students had not yet fully achieved the expected level of phonological development. At the decoding stage, four students encountered difficulties in reading vowel letters, while seven students experienced problems reading consonant letters. All students showed challenges in reading syllables and whole words. These results suggest that over the span of three years, students with intellectual disabilities generally develop linguistic awareness, begin to acquire phonological awareness in the fourth year of schooling, and some students start to develop decoding skills by the fifth year.

Keywords: Early Reading, Early Reading Development, Students with Intellectual Disabilities

INTRODUCTION

This emerging perspective has opened new pathways for exploring the potential that students with intellectual disabilities may develop, including in the area of academic skills. Research has demonstrated that students with intellectual disabilities can acquire early reading skills. Bahrudin, Rochyadi, Sunardi, and Taboer (2023) identified 25 studies documenting various instructional methods used to teach beginning reading, underscoring the potential for these students to develop foundational literacy skills. Similarly, Denne et al. (2024) found that individuals with intellectual disabilities are capable of improving early reading proficiency. Jaco and Pillay (2022) further reported that with appropriate instructional strategies, early reading development can progress effectively among students with intellectual disabilities.

Beginning reading is part of the broader domain of language development (Bunawan & Yuwati, 2000). Bunawan and Yuwati (2000) classified language development into four areas: (1) auditory receptive, (2) auditory expressive, (3) visual receptive, and (4) visual expressive. Early reading skills fall within the visual receptive domain. In addition, research has consistently shown that phonological awareness is a critical predictor of early reading development (Taboer & Rochyadi, 2024). Martinez (2022) asserted that no definitive age exists at which early reading skills emerge, as the development of reading ability varies among individuals. Intelligence, interest, and motivation cannot be deemed reliable predictors of when early reading begins. Instead, the most robust indicator is the attainment of phonological awareness at its developmental peak. Furthermore, the ability to associate sounds with

printed symbols is also a key component in the development of early reading skills among students with intellectual disabilities (Whitbread, Knapp, & Bengtson, 2021).

Instruction in early reading skills for students with intellectual disabilities in special elementary schools typically begins in the first year of formal schooling. According to the Indonesian Language curriculum for special education settings, the instructional content related to early reading can be found in Table 1 below.

Table 1. Learning Outcomes for Indonesian Language Instruction for Students with Intellectual Disabilities (Agency for Curriculum Standards and Educational Assessment, Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia, 2022).

Phase	Grade Level	Description
A	**1–2**	Students are able to perform pre-reading activities (such as holding a book correctly, maintaining appropriate reading distance, turning pages properly, and selecting adequate lighting). They recognize and spell alphabet combinations in syllables. Students are able to explain frequently used everyday words and understand new vocabulary with the support of simple sentence contexts and images/illustrations. They are capable of reading simple narrative texts (two to three words) and basic descriptive texts presented in aural, visual, and/or audiovisual formats.
B	**3–4**	Students are able to combine syllables (CV and CVC patterns) into commonly encountered words. They can comprehend information from visual media presenting personal experience narratives and instructional/ procedural texts. Students can acquire new vocabulary from read-aloud texts or viewed media with the aid of pictures/illustrations.
C	**5–6**	Students are able to read simple sentences aloud, articulate words within sentences with or without picture support, and pronounce them clearly. They can understand the content of simple narrative texts and basic report texts through reading.

Based on the curriculum document presented in Table 1, it is evident that early reading skills are first introduced in Grades 1–2. Instruction in alphabet recognition also begins in Phase A, when students are in Grades 1 and 2. As previously described by Bunawan and Yuwati (2000), the development of both receptive and expressive language abilities is emphasized during these early years. When these expectations are aligned with the concept of holistic delay or global delay as described in the DSM-5, a clear discrepancy emerges (American Psychiatric Association, 2013). This discrepancy lies in the mismatch between the characteristic slower learning pace of students with intellectual disabilities (Shree & Shukla, 2016) and the learning outcomes mandated in the curriculum.

This gives rise to the question: in which year of schooling can students with intellectual disabilities be expected to develop early reading skills? The cognitive gap between students with intellectual disabilities and their typically developing peers suggests that the acquisition of beginning reading skills will occur at a slower pace. Examining the developmental progression of early reading skills may therefore provide insight into predicting when such skills are likely to emerge. This developmental trajectory can also be linked to the number of years students have spent in school.

Given these considerations, a study is needed to examine the development of early reading skills in students with intellectual disabilities in special schools. The developmental patterns identified will then be aligned with the corresponding grade levels in which they occur. Thus, the focus of this study concerns how early reading skills develop among students with intellectual disabilities in special elementary schools.

METHOD

This study was conducted to obtain a descriptive account of the developmental progression of early reading skills in students with intellectual disabilities. A total of 18 students with intellectual disabilities participated as informants in this research. These informants were drawn from Grades 4, 5, and 6 in special elementary schools for students with disabilities. The distribution of informants is presented in Table 2.

Table 2 Distribution of Informants

Grade Level	Number of Students
Grade IV	4
Grade V	9
Grade VI	5
Total	**18**

All participating students were formally documented as having mild intellectual disabilities based on psychological assessment records maintained by the school. The procedures for conducting this study consisted of three stages: preparation, data collection, and data analysis. During the preparation stage, the following activities were carried out: (1) developing the theoretical framework on early reading skills for students with intellectual disabilities, (2) preparing the test instrument, (3) coordinating with the schools where the study would be conducted, (4) selecting informants in collaboration with school personnel, and (5) determining the testing schedule. During the implementation stage, the procedures included: (1) allowing each student to complete the assessment in a designated room accompanied by an examiner, the student's teacher, and the researcher, and (2) administering the test without time limitations, allowing students to work according to their individual capabilities and endurance levels. The analysis stage was carried out by the researcher based on the results obtained from the test administration.

Data collection used an informal early reading development test developed by the Special Education Laboratory, Faculty of Education, Universitas Negeri Jakarta (UNJ). This informal test underwent expert validation in the areas of early reading, intellectual disability, and assessment. Testing took place in the schools where the participating students were enrolled. The assessment sessions were scheduled separately from regular instructional activities. Data analysis was conducted by tabulating students' performance according to the categories of early reading development. Scores for each table of developmental categories were generated by counting the number of correct responses. The formula used for data processing is as follows:

$$N = \frac{\sum Number\ of\ Correct\ Responses}{\sum TotalNumber\ of\ Item}\ x$$

The minimum acceptable score criterion was set at 80. Scores greater than 80 were interpreted as indicating adequate development of early reading abilities, whereas scores below 80 were considered to reflect a continued need for skill development.

RESULT AND DISCUSSION

Based on the results of the early reading assessment administered to the students, the findings are presented in the following tables:

Table 3. Linguistic Awareness Scores of Students

Grade	Name	Clause Correct	Score	Sentence Correct	Score	Word Correct	Score	Articulation Clarity Correct	Score
VI	ABA	5	100	5	100	5	100	3	60
	IRA	5	100	4	80	5	100	4	80
	RAK	5	100	5	100	5	100	5	100
	MG	5	100	4	80	5	100	4	80
	HN	5	100	5	100	5	100	4	80
V	NS	4	80	4	80	5	100	2	40
	SR	4	80	2	40	5	100	2	40
	MH	4	80	3	60	5	100	2	40
	AA	4	80	4	80	4	80	2	40
	AAf	5	100	2	40	5	100	2	40
	ZNA	5	100	3	60	5	100	3	60
	KAA	5	100	5	100	4	80	4	80
	SANW	4	80	3	60	4	80	2	40
	ZAR	4	80	3	60	5	100	2	40
IV	ADK	4	80	4	80	5	100	2	40
	FAA	5	100	5	100	5	100	3	60
	NS	5	100	4	80	5	100	1	20
	NR	5	100	4	80	5	100	1	20

The data indicate that the students demonstrated strong linguistic awareness. This awareness includes understanding meanings conveyed in simple clauses, words, and sentences. Syntactic awareness related to affixed words was also evident, particularly when the affixation patterns were not overly complex and when presented within simple sentence structures. However, the findings also revealed that 13 students experienced difficulties with word articulation.

Table 4. Description of Phonological Awareness

Class	Name	Syllable Identification (Correct/Score)	Syllable Quantity Comparison (Correct/Score)	Rhyme Identification (Correct/Score)	Onset Identification (Correct/Score)	Initial Phoneme Identification (Correct/Score)	Final Phoneme Identification (Correct/Score)	Syllable Blending (Correct/Score)	Syllable Manipulation (Correct/Score)	Average Score
VI	ABA	4 / 80	4 / 80	4 / 80	4 / 80	5 / 100	4 / 80	5 / 100	5 / 100	87.5
VI	IRA	5 / 100	5 / 100	3 / 60	4 / 80	4 / 80	4 / 80	5 / 100	5 / 100	87.5
VI	RAK	4 / 80	4 / 80	4 / 80	5 / 100	4 / 80	4 / 80	5 / 100	5 / 100	87.5
VI	MG	4 / 80	4 / 80	5 / 100	5 / 100	5 / 100	5 / 100	5 / 100	5 / 100	95
VI	HN	5 / 100	5 / 100	3 / 60	3 / 60	3 / 60	3 / 60	5 / 100	5 / 100	80
V	NS	4 / 80	3 / 60	4 / 80	5 / 100	5 / 100	2 / 40	5 / 100	5 / 100	82.5
V	SR	1 / 20	0 / 0	4 / 80	4 / 80	4 / 80	3 / 60	5 / 100	3 / 60	60
V	MH	5 / 100	3 / 60	5 / 100	4 / 80	4 / 80	3 / 60	5 / 100	2 / 40	77.5
V	Aar	0 / 0	0 / 0	3 / 60	3 / 60	1 / 20	2 / 40	2 / 40	4 / 80	37.5
V	Aaf	5 / 100	0 / 0	3 / 60	0 / 0	0 / 0	2 / 40	4 / 80	5 / 100	47.5
V	ZNA	5 / 100	4 / 80	4 / 80	5 / 100	3 / 60	4 / 80	5 / 100	4 / 80	85
V	KAA	0 / 0	0 / 0	4 / 80	3 / 60	2 / 40	4 / 80	5 / 100	4 / 80	55
V	SANW	3 / 60	0 / 0	1 / 20	5 / 100	1 / 20	1 / 20	5 / 100	3 / 60	47.5
V	ZAR	0 / 0	0 / 0	4 / 80	2 / 40	0 / 0	2 / 40	5 / 100	3 / 60	40
IV	ADK	5 / 100	5 / 100	4 / 80	4 / 80	4 / 80	4 / 80	5 / 100	5 / 100	90
IV	FAA	1 / 20	4 / 80	5 / 100	5 / 100	3 / 60	4 / 80	5 / 100	5 / 100	80
IV	NS	2 / 40	3 / 60	0 / 0	1 / 20	2 / 40	1 / 20	3 / 60	1 / 20	32.5
IV	NR	2 / 40	1 / 60	1 / 20	1 / 20	2 / 40	1 / 20	3 / 6	1 / 20	35

In the development of phonological awareness, it is evident that the students in Grade VI demonstrate strong phonological awareness skills. In contrast, the data from Grades IV and V indicate that several students continue to experience difficulties in this area. In Grade V, seven out of nine students have not yet been able to develop adequate phonological awareness. Similarly, in Grade IV, two out of four students exhibit challenges in developing phonological awareness skills.

Table 5. Decoding Skills

Class	Name	Vowel Letters (Correct/Score)	Consonant Letters (Correct/Score)	Consonant Clusters (Correct/Score)	KV Pattern (Correct/Score)	VK Pattern (Correct/Score)	KVK Pattern (Correct/Score)	Consonant + Diphthong (Correct/Score)	Digraph + Vowel (Correct/Score)	K + V + Digraph (Correct/Score)	Stage 1: Base Words (Correct/Score)	Stage 2: Affixed Words (Correct/Score)
VI	ABA	4 / 80	19 / 100	4 / 67	2 / 40	2 / 40	1 / 20	2 / 40	3 / 60	2 / 40	1 / 20	1 / 20
VI	IRA	5 / 100	16 / 84	4 / 67	2 / 40	1 / 20	1 / 20	1 / 20	1 / 20	1 / 20	1 / 20	0 / 0
VI	RAK	5 / 100	18 / 95	5 / 83	1 / 20	2 / 40	1 / 20	3 / 60	2 / 40	1 / 20	1 / 20	0 / 0
VI	MG	5 / 100	19 / 100	4 / 67	1 / 20	2 / 40	2 / 40	4 / 80	4 / 80	1 / 20	2 / 40	0 / 0
VI	HN	5 / 100	15 / 79	5 / 83	0 / 0	1 / 20	2 / 40	1 / 20	1 / 20	1 / 20	2 / 40	0 / 0
V	NS	5 / 100	10 / 53	3 / 50	0 / 0	2 / 40	0 / 0	0 / 0	0 / 0	0 / 0	2 / 40	1 / 20

V	SR	4 / 80	10 / 53	2 / 33	2 / 40	2 / 40	2 / 40	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
V	MH	5 / 100	14 / 74	3 / 50	1 / 20	1 / 20	2 / 40	0 / 0	1 / 20	0 / 0	0 / 0	0 / 0
V	Aar	5 / 100	12 / 63	2 / 33	0 / 0	2 / 40	1 / 20	0 / 0	1 / 20	2 / 40	1 / 20	0 / 0
V	Aaf	3 / 60	9 / 47	1 / 17	0 / 0	2 / 40	1 / 20	2 / 40	0 / 0	1 / 20	0 / 0	0 / 0
V	ZNA	5 / 100	16 / 84	2 / 33	0 / 0	0 / 0	0 / 0	1 / 20	0 / 0	0 / 0	0 / 0	0 / 0
V	KAA	3 / 60	10 / 53	0 / 0	0 / 0	0 / 0	1 / 20	1 / 20	0 / 0	0 / 0	0 / 0	0 / 0
V	SANW	3 / 60	10 / 53	0 / 0	1 / 20	1 / 20	0 / 0	2 / 40	0 / 0	0 / 0	0 / 0	0 / 0
V	ZAR	3 / 60	12 / 63	2 / 33	1 / 20	1 / 20	0 / 0	1 / 20	0 / 0	1 / 20	1 / 20	1 / 20
IV	ADK	5 / 100	18 / 95	3 / 50	2 / 40	0 / 0	2 / 40	1 / 20	0 / 0	1 / 20	1 / 20	0 / 0
IV	FAA	5 / 100	18 / 95	2 / 50	1 / 100	2 / 40	1 / 20	1 / 20	0 / 0	1 / 20	1 / 20	0 / 0
IV	NS	3 / 100	9 / 95	1 / 33	1 / 0	1 / 0	0 / 0	0 / 0	0 / 0	0 / 0	1 / 20	0 / 0
IV	NR	3 / 100	9 / 47	0 / 17	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0

The average scores in Table 5 indicate that most students have begun to recognize vowel letters. Although their performance remains within the "low" category, the majority of students have demonstrated emerging recognition of vowel letters. In contrast, their performance in reading syllables and words, as shown in Table 5, suggests that students have not yet mastered these decoding skills.

Based on the data presented, it can be concluded that students with intellectual disabilities exhibit relatively good linguistic awareness when learning in Grade IV. However, challenges related to articulation and pronunciation persist. Phonological awareness also remains a difficulty for several students in Grades IV and V, whereas Grade VI students appear to have developed adequate phonological awareness skills. Decoding skills, particularly syllable and word reading, continue to pose challenges for students with intellectual disabilities across all grade levels. Nevertheless, most students with intellectual disabilities are able to recognize both vowel and consonant letters. The development of early reading skills among students with beginning reading difficulties can be observed in Table 6 below.

Table 6. Stages of Reading Development

Grade Level	**Developmental Focus**
I – III	Formation of Linguistic Awareness
IV	Development of Phonological Awareness
V	(Not specified — you may add: "Emerging Decoding Skills" or "Transition in Phonological Processing," depending on your data)
VI	Development of Decoding Ability

The development of early reading skills is grounded in the understanding that beginning reading is an integral extension of language development (Bunawan & Yuwati, 2000). Although this aspect is accommodated in the Indonesian Language curriculum for special schools, a key issue arises: the learning outcomes for Phase A, particularly those related to pre-reading abilities, do not explicitly encompass linguistic awareness and phonological awareness. According to Westwood (2001), reading difficulties may emerge as a consequence of curricular shortcomings. In practice, students with intellectual disabilities often exhibit early reading abilities limited to recognizing letter names, both vowels and consonants. Alphabet knowledge is indeed introduced at the onset of schooling (Badan Standar Kurikulum dan Asesmen Pendidikan, Ministry of Education, Culture, Research, and Technology, 2022). ÖZMEN & ATBAŞI (2016) found that students with intellectual disabilities are capable of recognizing the alphabet as part of developing the ability to differentiate letter forms. However, teaching reading through letter names is strongly discouraged (Wolff, 2011; Laubach, 2013).

Linguistically, words in Indonesian are formed syllabically (Soewargana, 1971). Indonesian itself derives from Malay. Laubach (2013) notes that the Malay people historically used Arabic script in their written communication. The Arabic–Malay script, or Jawi, is a consonantal writing system in which letters can only be pronounced when accompanied by vowels (Ministry of Religious Affairs, 2016). This indicates that teaching the alphabet as a starting point for reading may pose significant challenges for students with intellectual disabilities, particularly in blending letters into syllables—the foundational unit in Indonesian word construction.

Language development initially depends on auditory capacities in both receptive and expressive domains (Wolf, Vellutino, & Gleason, 1998; Bunawan & Yuwati, 2000). Linguistic awareness refers to the sensitivity and understanding of the nature and function of language (Wang & Liu, 2024). For students with intellectual disabilities, language serves primarily as a tool of communication. Auditory language development in this population is a complex process (Keskinova & Ajdinski, 2018), yet such challenges can be mitigated through supportive social environments that interact directly with the learner (Panopoulos & Drossinou-Korea, 2020). Students with intellectual disabilities generally require more time for cognitive processing, which consequently slows their developmental progression. Thus, their linguistic awareness develops over a longer trajectory and does not align with that of typically developing peers.

Phonological awareness is the strongest predictor of early reading development (Taboer, Rochyadi, Sunardi, & Bahrudin, 2020). It refers to the learner's ability to detect and manipulate the sound units that make up spoken words. Empirical evidence shows that students with intellectual disabilities can develop phonological awareness by the time they reach Grade VI. Findings by Saad (2017) and Kumaş, Dada, & Dodur (2025) similarly indicate that children with intellectual disabilities can enhance phonological awareness through appropriate interventions. This suggests that with effective instructional support, students in Grades IV and V may also experience meaningful growth in phonological awareness.

The concept of global developmental delay (American Psychiatric Association, 2013) as described in the DSM-5 provides a framework for understanding that the development of early reading skills in students with intellectual disabilities is delayed. Language development is the primary domain requiring focused attention (Bunawan & Yuwati, 2000). Accordingly, the development of linguistic awareness constitutes a prolonged developmental process for students with intellectual disabilities, particularly those in the mild category.

CONCLUSION

Students with intellectual disabilities, when viewed through a more progressive and inclusive perspective, are now increasingly recognized as having the potential to develop their academic abilities. Early reading, which in the past was often regarded as an indicator of intellectual impairment, is now understood differently. A growing body of research has demonstrated that students with intellectual disabilities are capable of developing beginning reading skills. Findings from the present study indicate that prior to entering Grade IV, students had already begun to develop linguistic awareness. As they progressed through Grades IV and V, their phonological awareness continued to develop. By Grade VI, they demonstrated adequate phonological awareness and were ready to learn reading skills or enter the decoding phase.

Based on the results of this study, it is recommended that future researchers conduct similar studies with a larger number of student participants. Additionally, there is a need for targeted intervention strategies aimed at supporting the three essential phases of early reading development: the linguistic awareness phase, the phonological awareness phase, and the decoding phase. The findings of this study may serve as a reference for the development of Indonesian language instructional programs for students with intellectual disabilities.

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