

Improving The Reading Comprehension Skills of Students with Learning Difficulties Through Scientific Learning Assisted by Big Book Media in Grade IV of Inclusive Elementary School

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Abstract

Based on a document study of reading assessment results and observations of Indonesian language learning in grade IV of SDN 003 Kayan Hulu, information was obtained that the students' reading comprehension skills were still low. Out of 12 students, only 4 students (33.3%) had reached the Minimum Mastery Criterion (KKM) of 75, while 8 students (66.7%) had not yet reached the KKM. This classroom action research aims to improve students' reading comprehension skills through the application of scientific learning assisted by Big Book media. This research applied the Classroom Action Research (CAR) method with the Kemmis and McTaggart model design, which was conducted in two cycles. The research subjects involved 12 students. Data collection used learning outcome tests, observations, questionnaires, and documentation. The results of the research showed a very significant improvement in reading comprehension skills after being given action up to Cycle II. In the pre-cycle, the class average score on the initial assessment was 66.25 with a classical mastery of 33.33%. In Cycle I, the class average score increased to 74.16 with a classical mastery of 50%. After improving the learning action in Cycle II, the percentage of class classical mastery skyrocketed to 100% where all 12 students successfully exceeded the KKM threshold, and the class average spiked to reach 89.19 which falls into the excellent category. The application of scientific learning based on big book media is able to improve the reading comprehension skills of students with learning difficulties in grade IV of Inclusive Elementary School.

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INTRODUCTION

Basic literacy is no longer just a mechanical ability to sound out a string of letters, but a fundamental cognitive skill in processing and constructing meaning. According to (Auliya & Setiyowati, 2024), reading skills are divided into basic and advanced levels. The early reading stage, which is usually built at an early age until the early grades (elementary school), is an absolute foundation. The inability of students to master basic literacy at this stage will directly result in their failure to understand more complex academic texts at the next level. In line with that from cognitive and psychomotor aspects, (Arifin et al., 2023) emphasize that basic literacy, especially early reading, involves a combination of cognitive processes (phoneme recognition, letter decoding, spelling, and vocabulary comprehension) and psychomotor processes (eye coordination, muscle movement, and visual tracking). This is supported that UNESCO's Continuous Construction of Meaning (2017) positions basic literacy as a learning continuum. This includes the ability to identify, understand, and interpret using print and digital materials to empower individuals to participate fully in society.

Literacy is integrated with multisensory learning theory (Multisensory Approach). The multisensory approach is rooted in the Orton-Gillingham method which stimulates multiple sensory channels simultaneously to create stronger memory traces in the brain. In line with the explanation above on the VAKT components: (Sofa et al., 2024) explain that the multisensory approach integrates four main modalities (VAKT) which are very essential for early childhood and elementary school children because they are highly dependent on concrete stimulation including: Visual (Sight), Auditory (Hearing), Kinesthetic (Kinesthetic Movement), and Tactile (Tactile Touch). Increased Retention and Comprehension Capacity: Findings (Latifah, 2017) empirically prove that multisensory strategies are significantly able to improve reading comprehension in students with diverse learning profiles. Neuroeducation and Inclusion: (Williams et al., 2021) asserts that multisensory is a neuroeducational pedagogical approach. A monovariate literacy approach (only relying on the blackboard and the teacher dictating) often burdens students cognitively because letter symbols are basically very abstract. Integrating VAKT into basic literacy is a concrete form of applying constructivism theory. Students are positioned as active subjects building their own language understanding through sensorimotor and cognitive synchronization, making the transition process from spoken language to written language adaptive, unthreatening, and

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inclusive (Frost et al., 2024).

Reading comprehension is not just a mechanical process in voicing written symbols, but a complex and interactive cognitive process to construct meaning. According to Snow (2002), reading comprehension is the process of extracting and constructing meaning simultaneously through interaction and involvement with written language. In line with this, Somadayo (2011) asserts that reading comprehension is an interactive process where readers use their background knowledge, contextual clues, and linguistic understanding to reconstruct meaning from the author. In the context of inclusive education, especially for students with learning difficulties, this meaning construction process often experiences obstacles. Westwood (2008) explains that students with learning difficulties often experience deficits in working memory, reading fluency, and a lack of vocabulary, which directly impacts their low reading comprehension skills. According to Duke and Cartwright (2021), explaining the shift from the Simple View to the Active View of Reading over decades, experts used the Simple View of Reading theory. However, new findings in 2021 revised this to the Active View of Reading, stating that reading barriers do not only occur because children cannot spell or do not know vocabulary, but because of weak Executive Function. Linguistic and Sociocultural Discrepancy Theory (Linguistic Mismatch) is the most relevant theory, where reading difficulties in children in remote areas are often not cognitive deficits, but a mismatch between the mother tongue that shapes their brain schema and the formal instructional language in schools.

Conceptually, Big Book is defined as a printed picture literacy media designed with enlarged dimensions both on paper size, visual illustrations, and text typography that is specifically used to facilitate the shared reading process in the classroom. Prawiyogi et al. (2021) assert that Big Book is not just an ordinary enlarged book, but a pedagogical instrument that allows communal learning interactions to occur between educators and students, where strong visuals act as the main focus attractor. This media is specifically designed for early childhood and early-grade elementary school students to build a bridge of understanding between spoken language and written language (Yani, 2023). According to the Whole Language approach and Shared Reading method (Gunarwati et al., 2021), the systematic syntax or steps of using Big Book include the Pre-reading, During Reading, and Post-reading stages. The selection of Big Book media in this research is also supported by the research results of Mufidah (2018) which showed that the use of Big Book was able to improve the reading comprehension skills of grade IV elementary school students. However, the research has not examined the application of Big Book in elementary schools in remote areas which have bilingual environmental characteristics, limited literacy

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access, and the dominance of regional languages in daily life. Therefore, the novelty of this research lies in the application of scientific learning based on Big Book media as a language bridge to improve the reading comprehension skills of students with learning difficulties at SDN 003 Kayan Hulu.

RESEARCH METHODOLOGY

This research applies the Classroom Action Research (CAR) method, which describes the learning process and outcomes of students in an effort to improve the quality of learning. The research design used is the Kemmis and McTaggart model, which is carried out through repeated cycles to achieve the set learning objectives. Each cycle consists of four main phases, namely: planning, action, observation, and reflection. This CAR is designed with a collaborative approach, meaning the researcher partners with a colleague to act as an objective observer and discussion partner to ensure the effectiveness of the actions provided.

The research was conducted in Grade IV of SDN 003 Kayan Hulu, located in Long Betaoh Village, Kayan Hulu District, Malinau Regency, North Kalimantan Province. The subjects of this research involved 12 students, consisting of 7 females and 5 males. This class was chosen because the students are less active in class during Indonesian language learning on reading comprehension material, and there are still some students who cannot read fluently, resulting in learning outcomes below the minimum mastery criteria standard (KKM). The research time was carried out over a period of one month in the even semester of the 2025/2026 academic year, divided into two stages, namely cycle 1 and cycle 2.

To obtain accurate and comprehensive data regarding the improvement of students' reading comprehension skills, this research uses several data collection techniques. The main instrument is the learning outcome test in the form of a pre-test and post-test to measure students' quantitative achievements based on the reading comprehension taxonomy which includes literal, inferential, and evaluative aspects. The observation technique is used to collect qualitative data regarding the activities of the teacher and students during the learning process. Questionnaires are used to determine the students' subjective responses to the use of Big Book media, and documentation functions to strengthen the research data.

The data analysis technique uses percentage calculations to measure the classical mastery of the class. A student is declared to have completed learning individually if they obtain a reading comprehension test score of $66 \leq p < 79$, which is in the minimal "Good" category. This research is declared successful classically if at least 75% of the total research subjects have achieved



individual mastery. Besides the test results, the action using Big Book media is considered successful if the implementation process meets the target percentage based on observation sheets, where the teacher's activity reaches a minimum of 80% and the students' activity reaches a minimum of 75%.

RESEARCH RESULTS

Results

The application of the Big Book media was integrated sequentially with the five stages of the Scientific approach. First, during the Observing stage, the teacher displayed the Big Book classically, allowing students to observe texts, illustrations, and storylines presented visually to recognize factual information such as characters, places, and times.



Figure 1. Students observing big book media

Second, in the Questioning stage, the visual stimuli encouraged students to ask about new vocabulary or uncomprehended visual details.



Figure 2. Student questioning activity

Third, during the Gathering Information or Experimenting stage, students, guided by the teacher, searched for meanings of difficult words by guessing based on picture clues and surrounding sentences.



Figure 3. Students' activity in class gathering information

Fourth, in the Reasoning or Associating stage, students practiced sorting main ideas and supporting information by correlating pages of the Big Book to draw simple inferential conclusions sequentially.



Figure 4. Students presenting results in front of the class

Finally, in the Communicating stage, students retold the plot of the reading material from the Big Book using proper Indonesian structures and language that they understood.



Figure 5. Students retelling the reading content from big book media

The physical evidence of the media used to support this process is presented below.



Figure 6. Big Book Media



Figure 7. Story content inside the Big Book

In the pre-cycle condition, the class average score for reading comprehension skills stood at 66.25, with only 4 out of 12 students (33.33%) passing the Minimum Mastery Criterion (KKM $\geq$ 75). The learning process relied on standard textbooks, which created a high cognitive load for students with learning difficulties, leading to a lack of focus and comprehension barriers caused

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by the linguistic gap between their regional mother tongue and formal Indonesian.

Cycle I interventions increased the class average to 74.16, with 6 students passing (50%). While the Big Book successfully increased shared attention and literal comprehension, students struggled with Inferential and Evaluative questions when working individually, often giving up when encountering complex vocabulary without peer assistance.

Addressing these shortcomings, Cycle II integrated peer tutoring and collaborative group work. This modification caused the class average score to jump to 86.25, achieving a classical mastery of 91.6%. By the final cumulative evaluation of Cycle II, the average score reached 89.19 (Excellent category), with a 100% classical mastery rate where all 12 students exceeded the KKM.

Table 1. Comparison of Learning Outcomes in Cycle I and Cycle II

No	Achievement Indicator	Cycle I	Cycle II	Improvement Description (Cycle I to Cycle II)
1	Class Average Score	74.16	86.25	Increased by +12.09 points. Located in the Excellent category.
2	Number of Passed Students (≥ 75)	6 students	11 students	Increased by +5 students who successfully reached the KKM.
3	Number of Failed Students (< 75)	6 students	1 student	Decreased significantly, leaving only 1 student who requires intensive guidance.
4	Classical Mastery Percentage	50%	91.6%	Increased sharply by +41.6%.
5	CAR Success Status	Unsuccessful	Successful	Cycle II exceeded the class classical mastery success indicator target (i.e., $\geq 80\%$).

Table 2. Individual Scores of Cycle II

No	Student Initial	Score	Category
1	AS	90.63	Excellent
2	BP	90.63	Excellent
3	CL	89.06	Excellent
4	DK	84.38	Good
5	ES	93.75	Excellent

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6	FT	81.25	Good
7	GG	96.88	Excellent
8	HS	84.38	Good
9	IW	93.75	Excellent
10	JS	87.50	Excellent
11	KJ	90.63	Excellent
12	LU	87.50	Excellent

Table 3. Students' Final Scores

Initial	Score	Category
AS	96.88	Excellent
BP	93.75	Excellent
CL	93.75	Excellent
DK	90.63	Excellent
ES	90.63	Excellent
FT	90.63	Excellent
GG	89.06	Excellent
HS	87.50	Excellent
IW	87.50	Excellent
JS	84.38	Good
KJ	84.38	Good
LU	81.25	Good

DISCUSSIONS

The empirical data generated from Cycle I and II confirms that Big Book media effectively dismantled the cognitive-visual barriers faced by students with learning difficulties. The macro paper dimensions, large typography, loose spacing, and a 60% proportion of visual illustrations directly addressed the frustration these students exhibited when previously confronted with standard, dense textbooks. Sweller's Cognitive Load Theory, as adapted for special needs education, explains this phenomenon: conventional texts impose a high extraneous cognitive load, forcing students to exhaust their working memory simply trying to decode letters. The visual scaffolding provided by the Big Book psycholinguistically mitigated the crowding effect often experienced by slow learners or those with mild dyslexia, redirecting their cognitive energy toward

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substantive meaning rather than technical reading mechanics. The immediate spike in Literal Comprehension scores during Cycle I validates Fletcher and Vaughn's Dual-Coding Theory, which posits that synchronizing colorful imagery with short texts triggers dual information processing pathways in the brain.

Coupling the Big Book with the 5M Scientific Approach and Discovery Learning catalyzed a shift from superficial decoding to deep understanding. Students with learning difficulties typically exhibit passive reading behaviors, engaging in zero internal dialogue with the text. The structured 5M stages forced this dialogue to manifest. During the Observing and Questioning phases, visual prompts required students to formulate questions, aligning with Mercer, Wegerif, and Major's Social Constructivism theory which argues that conceptual understanding is best forged through dialogic guided inquiry. When prompted to explain why UNESCO recognized Batik, students were compelled to connect prior knowledge with new textual facts, a core requirement of inferential reasoning as outlined by Duke et al.

The critical pivot in this research occurred between Cycle I and Cycle II, addressing the stagnation in Evaluative Comprehension scores. Individual tasks in Cycle I left students in cognitive gridlock. By modifying the intervention to include heterogeneous groups based on Peer Scaffolding in Cycle II, classical mastery surged to 91.6%. This sharp quantitative leap directly demonstrates Vygotsky's Zone of Proximal Development (ZPD). Peer-Assisted Learning Strategies (PALS), as contextualized by Fuchs et al., acted as cognitive catalysts. Students experiencing high affective filters (anxiety) when answering higher-order thinking questions from the teacher found those same concepts accessible when mediated by peers using casual, concrete analogies. Applying Tomlinson's Differentiated Instruction principles, this collaborative framework ensured that inclusive students were not marginalized with simplified tasks, but were instead supported by the social-cognitive network of their peers to tackle high-quality reading materials. Group presentations ultimately reinforced their self-efficacy, establishing the affective foundation necessary for sustained academic performance in inclusive settings.

CONCLUSION

The implementation of scientific learning assisted by big book media in reading comprehension learning for students with learning difficulties in grade IV of Inclusive Elementary School has been carried out well according to the stages of the scientific approach, namely observing, questioning, gathering information, reasoning, and communicating. Big book media helps teachers present reading materials more attractively through large text sizes and pictures



so that they are easily observed by all students, including students experiencing learning difficulties. During the learning process, students showed more active involvement in observing the reading content, asking questions, discussing, finding important information, and conveying the results of their understanding. Learning becomes more interactive, fun, and provides opportunities for students to construct understanding based on direct learning experiences.

The application of scientific learning based on big book media is able to improve the reading comprehension skills of students with learning difficulties in grade IV of Inclusive Elementary School. This improvement can be seen from the increase in students' ability to understand reading content, find main ideas, identify important information, answer questions based on the text, conclude reading content, and retell the text content in their own language. Besides the improvement in learning outcomes, students also showed an increase in active participation, attention, self-confidence, and motivation while participating in reading learning. Therefore, the application of scientific learning assisted by big book media is proven to be effective in supporting the improvement of reading comprehension skills of students with learning difficulties in grade IV of Inclusive Elementary School.

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