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The Effectiveness of Problem-Based Learning in Improving Fable Text Comprehension Among 5th Grade Elementary Students: A Classroom Action Research

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ABSTRACT

The background of this study is the low learning outcomes of students, primarily caused by conventional teaching methods that fail to actively engage learners. The Problem-Based Learning (PBL) model was chosen because it emphasizes collaborative, contextual, and independent problem-solving. This research employed a Classroom Action Research (CAR) approach carried out in two cycles. Each cycle consisted of the stages of planning, action, observation, and reflection. Instruments used included observation sheets for both student and teacher activities, as well as pre-test and post-test questions. The research subjects were 20 fifth-grade students. The results revealed an improvement in student learning outcomes from cycle I to cycle II. In cycle I, the average pre-test score was 69.16, which increased to 73.33 in the post-test. The mastery level rose from 41.66% (8 students meeting the Minimum Mastery Criteria or KKM) to 66.6% (13 students achieving mastery). However, these results still fell short of the KKM benchmark of 75%. Therefore, revisions were made in cycle II. In this cycle, the average pre-test score rose to 81.6, and the post-test average reached 85.83. The mastery level increased to 83.3% (17 students), with certain indicators showing that 90% of students had reached or exceeded the KKM. This indicates a significant improvement in their understanding of content, moral messages, and the structure of fable texts. Moreover, students' engagement also improved positively, particularly in aspects such as teamwork, the courage to express opinions, and discipline during group discussions. The implementation of the PBL model also enhanced teachers' creativity in designing meaningful and engaging learning activities. Teachers acted as facilitators, while students took an active role in the learning process. This created a classroom atmosphere that was enjoyable, intellectually stimulating, and supportive of critical thinking development. Based on these findings, it can be concluded that the Problem-Based Learning model is effective in improving students' comprehension of fable texts and is highly relevant for implementation within the Kurikulum Merdeka, which emphasizes differentiated, student-centered learning.

Keywords: Problem-Based Learning, Learning Outcomes, Fable Texts, Meaning Comprehension

I. INTRODUCTION

Mastery of Indonesian-language literacy represents a foundational competency in elementary education, serving as the cornerstone for academic development across subsequent educational stages. Within the Indonesian language curriculum for elementary schools, fable texts occupy a significant pedagogical position, functioning not only as literary artifacts but also as vehicles for moral education, critical thinking development, and cultural transmission. Fables narrative texts featuring anthropomorphized animals that embody human characteristics and convey ethical lessons offer rich opportunities for developing students' interpretive skills, inferential reasoning, and value formation. However, empirical observations across Indonesian elementary schools reveal a persistent challenge: students frequently demonstrate superficial comprehension of fable texts, failing to grasp the underlying moral messages, analyze narrative structures, or connect textual meanings to real-world contexts (Juita Sari, 2025).

This pedagogical challenge manifests with particular acuity at SD S 118 Muhammadiyah Gunungtua in Mandailing Natal Regency, where preliminary investigations conducted in February 2025 revealed concerning patterns of student achievement. Among 20 fifth-grade students, only 40% demonstrated mastery of fable text comprehension, meeting the established Minimum Mastery Criteria (Kriteria Ketuntasan Minimal or KKM) of 75. The remaining 60% exhibited inadequate understanding, characterized by a limited ability to identify narrative elements, interpret implicit moral lessons, or analyze character motivations within fable contexts.

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These findings align with broader concerns in Indonesian language education regarding the efficacy of conventional instructional approaches in developing higher-order literacy skills.

Diagnostic interviews with the collaborating classroom teacher illuminated several contributing factors to these suboptimal outcomes: The predominant instructional model remained firmly teacher-centered, characterized by lecture-based information transmission with minimal opportunities for student dialogue, inquiry or collaborative meaning-making. Students assumed passive roles as information recipients rather than as active knowledge constructors. Classroom discourse patterns reflected low levels of student participation, with few students willing to pose questions, contribute ideas, or engage in interpretive discussions regarding fable texts. The instructional approach prioritizes factual recall—identifying plot sequences, naming characters, or memorizing explicit moral statements—while neglecting the development of analytical and evaluative competencies essential for authentic text comprehension (Alvin G. Juanillo & Josephine B. Baguio, 2025).

Furthermore, the temporal structure of lessons provides insufficient opportunities for sustained engagement with texts. Brief reading periods followed by teacher-directed question-and-answer sessions precluded the deep processing necessary for students to construct personal interpretations, evaluate multiple perspectives, or connect fable narratives to their lived experiences. The reliance on textbooks as singular instructional resources, without supplementary materials or varied learning activities, has contributed to monotonous classroom environments that fail to stimulate intellectual curiosity or intrinsic motivation for literacy engagement (Lustig et al., 2025).

Addressing these multifaceted challenges necessitates a fundamental reconceptualization of instructional approaches—a shift from transmission-oriented pedagogy to constructivist, student-centered models that position learners as active agents in knowledge construction. Problem-Based Learning (PBL) has emerged as a particularly promising pedagogical innovation aligned with this imperative. Rooted in constructivist epistemology, PBL represents an instructional approach in which authentic, contextualized problems serve as catalysts for student learning, investigation, and collaborative knowledge building (Ahmad et al., 2025).

PBL is a learning method in which students encounter problems before receiving any formal instruction on relevant concepts, thereby creating cognitive disequilibrium that motivates authentic inquiry. This conception fundamentally challenges traditional pedagogical sequences, wherein teachers systematically present content before students encounter application contexts. Instead, PBL leverages the motivational and cognitive affordances of problem-solving as the primary mechanism for learning. As students grapple with complex, authentic problems, they identify knowledge gaps, formulate learning objectives, gather and evaluate information from multiple sources, develop and test hypotheses, and ultimately construct solutions, ―processes that mirror authentic disciplinary practices (Sutiani et al., 2025).

PBL is an instructional model organized around ill-structured, real-world problems that promote active student engagement in inquiry and problem-solving processes. Central to this definition is the concept of "ill-structured problems"—challenges that lack a single correct solution, require information from multiple domains, and necessitate the consideration of diverse perspectives. Such problems contrast sharply with the well-defined exercises typical of traditional instruction, approximating the ambiguous, multifaceted challenges characteristic of real-world contexts. This alignment between classroom problems and authentic situations enhances the perceived relevance of learning, thereby increasing student motivation and facilitating the transfer of knowledge to novel contexts (Fadhila Fadhila et al., 2025).

PBL's distinctive characteristics include student-centered learning processes, authentic problem contexts, small collaborative groups, teachers as facilitators rather than information providers, and problems as drivers for developing problem-solving skills and acquiring content knowledge. These features collectively distinguish PBL from conventional instruction methods. Rather than receiving pre-packaged knowledge, students assume responsibility for their learning trajectories, determining what they need to know, how to acquire the necessary information, and how to integrate diverse knowledge sources in problem-solving. The collaborative dimension proves equally critical; when working in small groups, students articulate their thinking processes, negotiate meanings, distribute cognitive labor, and develop interpersonal competencies alongside disciplinary knowledge (Pamuji et al., 2026).

The facilitative role of teachers in PBL contexts represents another departure from traditional practices. Rather than serving as primary information sources, PBL teachers orchestrate learning environments, scaffold inquiry processes through strategic questioning, monitor group dynamics, provide targeted guidance when students encounter impasses, and promote metacognitive reflection on learning strategies. This facilitation requires sophisticated pedagogical judgment—knowing when to intervene, what questions to pose, how to balance providing support with preserving productive struggle, and how to foster student autonomy while ensuring that learning objectives are achieved.

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The application of PBL to fable text comprehension instruction demonstrates a compelling pedagogical coherence. Fables inherently present interpretive challenges that are suitable for problem-based exploration. Questions such as "What motivated the tortoise's persistence despite apparent disadvantage?" "How do the ant's and grasshopper's different choices reflect broader life principles?" or "What alternative endings might emerge if characters made different moral choices?" constitutes an authentic interpretive problem lacking a singular correct answer. Such questions invite students to marshal textual evidence, draw inferences, consider multiple perspectives, and construct reasoned interpretations—precisely the cognitive activities that PBL seeks to promote (Coty, 2025).

The moral lessons embedded in fables offer a particularly rich terrain for PBL implementation. Rather than teachers simply announcing that "The Tortoise and the Hare teaches us that slow and steady wins the race," PBL approaches position students as active interpreters who must excavate moral meanings through analysis of character actions, narrative consequences, and thematic patterns. Students might examine the following question: Why did the hare fail? What personal qualities enabled the tortoise's success? How might this narrative inform our understanding of effective goal pursuit? Such interpretive work requires students to engage in higher-order thinking—analysis, evaluation, and synthesis—rather than merely recalling explicitly stated morals. Furthermore, the concise narrative structures and familiar animal characters of fables reduce the cognitive load related to the comprehension of surface-level narrative details, thereby freeing cognitive resources for deeper interpretive work. The accessibility of fable narratives enables students with diverse ability levels to engage meaningfully with texts while still encountering genuine intellectual challenges in interpretation and application. This characteristic aligns well with the PBL's emphasis on accessible entry points combined with opportunities for sophisticated analysis.

Collaborative discussions, which are central to PBL implementation, are particularly valuable for fable comprehension. Individual students bring diverse life experiences, cultural backgrounds, and interpretive lenses to the texts. When students discuss fables collaboratively, they encounter alternative interpretations, must articulate and defend their readings with textual evidence, consider perspectives they might not have independently generated, and collectively construct richer understandings than any individual might achieve alone. This dialogic meaning-making mirrors authentic literary interpretation practices while developing students' communication skills, perspective-taking abilities, and collaborative competencies.

II. METHODS

A. *Research Design*

This study employed Classroom Action Research (CAR) methodology, a cyclical, participatory approach wherein practitioners systematically investigate their own practices to improve educational outcomes. CAR is particularly appropriate for examining pedagogical innovations within authentic classroom contexts, enabling the iterative refinement of instructional approaches based on empirical evidence. Unlike traditional experimental research, which manipulates variables under controlled conditions, CAR acknowledges the complexity of classroom environments while maintaining systematic rigor in data collection and analysis (Creswell, J. W., & Creswell, 2018).

This study implemented a two-cycle action research design, with each cycle comprising four phases: planning, action, observation, and reflection. This cyclical structure enables progressive refinement, — withinsights from the initial implementation informing modifications in subsequent cycles, thereby optimizing instructional effectiveness. The decision to conduct two cycles was determined pragmatically: preliminary results indicated substantial improvement in Cycle II, with student mastery rates exceeding the 75% target criterion, suggesting that additional cycles were unnecessary.

B. *Research Setting and Participants*

The research was conducted at SD S 118 Muhammadiyah Gunungtua, a private Islamic elementary school located in the Mandailing Natal Regency, North Sumatra Province, Indonesia. The school serves a predominantly middle-income community, with students coming from families engaged in agriculture, small businesses, and civil service. Class sizes average 20-25 students, consistent with typical Indonesian elementary schools in semi-urban areas.

The participants comprised all 20 students enrolled in the fifth-grade class during the 2025-2026 academic year. The fifth grade was selected because fable texts constitute a curricular focus at this level, aligned with the national curriculum standards for Indonesian language education. The class included 11 male and 9 female students, aged 10-11 years, representing diverse academic ability levels. While specific learning disabilities

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were not formally diagnosed among the participants, the classroom teacher identified approximately 30% of students as struggling readers who consistently performed below grade-level expectations.

The researcher served dual roles: as the principal investigator responsible for research design, data collection, and analysis, and as the implementing teacher who designed and delivered PBL-based instruction. This insider-researcher positionality offers advantages—intimate knowledge of students, authentic classroom context, and immediate responsiveness to emerging issues—while also presenting challenges regarding objectivity. To mitigate potential bias, the regular classroom teacher served as a collaborative observer, providing independent documentation of the classroom processes and student behaviors.

C. *PBL Implementation Framework*

The PBL intervention followed a structured five-phase model adapted and contextualized for fable text instruction.

Phase 1: Orienting Students to the Problem. Each lesson commenced with the presentation of a problem scenario related to the fable text. For example, when studying "The Ant and the Grasshopper," students encountered the scenario: "Imagine you have two friends with very different approaches to their responsibilities. One works diligently on homework immediately, while the other prefers playing and postpones work. What might be the consequences of each approach? How should you advise them?" This problem orientation activates prior knowledge, generates cognitive engagement, and establishes purposeful reading (Sugiyono, 2019).

Phase 2: Organizing Students for Learning. Students were arranged into heterogeneous groups of four, intentionally mixing students of varying ability levels, genders, and social relationships to encourage collaboration. Each group received explicit roles: facilitator (keeps the discussion focused), recorder (documents key ideas), researcher (locates textual evidence), and presenter (shares findings). Role rotation across sessions ensured that all students developed diverse competencies. The groups received structured task sheets specifying their problem-solving objectives, guiding questions, and collaborative norms.

Phase 3: Guiding individual and group investigations. This phase constitutes the core of the PBL process. Students read fables independently and then collaboratively analyzed the texts to address the problem. Teacher facilitation involved circulating among groups and posing probing questions ("What evidence supports that interpretation?" "How might another character view this situation?" "What connections do you see to your own experiences?"), providing scaffolding when groups encountered impasses and ensuring all members participated. Students consulted multiple resources—texts, dictionaries, and prior knowledge—to construct their interpretations.

Phase 4: Developing and Presenting the Artifacts. Groups synthesized their analyses into presentable forms, such as —charts mapping character traits to actions, written summaries of moral lessons with supporting evidence, or role-play demonstrations of alternative narrative endings. Presentations to the whole class enabled peer learning, exposed students to multiple interpretive perspectives, and developed their communication competencies. Audience members were required to pose questions, offer critiques, and suggest alternative interpretations, fostering dialogic learning.

Phase 5: Analyzing and Evaluating the Problem-Solving Process. At the end of each lesson, teacher-facilitated whole-class reflections examined both content learning and process: What moral lessons emerged? How did we determine these meanings? What evidence is the most persuasive? What challenges did the groups encounter? How can we approach similar problems more effectively? This metacognitive reflection promotes awareness of learning strategies and their effectiveness.

D. *Data Collection Instruments and Procedures*

Multiple data sources enabled triangulation, enhancing the validity and comprehensiveness of findings:

Pre-tests and Post-tests. Researcher-developed comprehension assessments were administered before and after each instructional cycle. The assessments comprised 10 items evaluating multiple dimensions of fable comprehension: identifying narrative elements (characters, settings, and plot), determining main ideas, inferring character motivations, interpreting moral messages, and applying lessons to hypothetical scenarios. The items included multiple-choice, short-answer, and extended-response formats, enabling the assessment of both factual recall and higher-order thinking. The assessments were validated through expert reviews by two experienced Indonesian language teachers and pilot-tested with students from a comparable school to ensure clarity and appropriate difficulty. The scores were converted to a 100-point scale, with 75 representing the mastery threshold.

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Observation Protocols. Systematic classroom observation documented student behaviors across five indicators: attention to teacher explanations, questioning during discussions, collaborative participation in group work, presentation of solutions to the whole class, and contribution to lesson summaries. The collaborating teacher, serving as the primary observer, recorded the frequencies of target behaviors using structured observation forms. Field notes captured qualitative details regarding student engagement, group dynamics, and instructional challenges. Observations were conducted during all instructional sessions across both cycles.

Teacher's Reflective Journal. The researcher maintained detailed reflective notes documenting pedagogical decisions, students responses, unexpected challenges, and emerging insights throughout the study. Entries were made immediately after each session, capturing fresh impressions before memory faded. This journal provided rich qualitative data on the implementation processes and informed iterative refinements between cycles.

Student Work Artifacts. Samples of student work—group analysis charts, written interpretations, and presentation materials—were collected and analyzed as evidence of learning processes and outcomes. These artifacts illuminate students' interpretive strategies, depth of analysis, and collaborative products.

E. *Data Analysis*

Quantitative data from the pre- and post-tests were analyzed using descriptive statistics: means, ranges, and mastery percentages (proportion of students scoring ≥75). Paired comparisons examined changes within each cycle (pre-test to post-test) and across cycles (Cycle I to Cycle II), documenting the improvement trajectories. While inferential statistical tests were not employed given the action research design and small sample size, effect sizes were calculated using Cohen's d to estimate the magnitude of observed changes.

Observation data were analyzed by calculating the percentage frequencies for each behavioral indicator and then averaging across indicators to derive overall engagement scores. Changes in these percentages across cycles were interpreted as evidence of shifting participation patterns in the study.

Qualitative data, including ―observation field notes, reflective journal entries, and student work artifacts, ―were subjected to thematic analysis. The data were read iteratively to identify recurring patterns, challenges, and insights. The themes were organized around key research questions regarding PBL's impact of PBL on comprehension, engagement, and collaborative learning. Representative examples were selected to illustrate the findings in the Results section.

F. *Ethical Considerations*

Although Indonesian educational research contexts do not universally require formal institutional review board approval for classroom-based action research, this study adhered to the ethical principles of educational research. The school administration granted permission for the study. Parents received information about the research and could opt their children out, although none chose to do so. Student identities were anonymized in all reports. Because PBL represents a research-supported instructional approach aligned with curricular objectives, no students were denied effective instruction; rather, all participants received enhanced instruction designed to improve their outcomes.

G. *Trustworthiness and Limitations*

Several strategies enhance the trustworthiness of research. Triangulation of multiple data sources (tests, observations, and artifacts) provided convergent evidence. Collaboration with the classroom teacher as an observer introduced an external perspective, reducing potential researcher bias. Detailed documentation through journals and observation protocols created an audit trail, enabling the verification of interpretations. Iterative cycles allowed for the testing and refinement of emerging interpretations.

However, the limitations of this study must be acknowledged. The action research design, while providing rich contextual insights, precludes causal claims; observed improvements cannot be definitively attributed to PBL in the absence of a control group. The small sample size from a single classroom limits generalizability. The researcher's dual role as a teacher-investigator introduced potential bias despite the mitigation strategies. These limitations suggest that the findings should be interpreted as promising preliminary evidence warranting further investigation rather than definitive conclusions about PBL's universal effectiveness of PBL.

III. RESULTS AND DISCUSSION

A. *Descriptive Statistics*

Analysis of data collected across the two action research cycles revealed substantial improvements in both student achievement on fable comprehension assessments and behavioral indicators of engagement. These

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improvements were neither immediate nor uniform; rather, they emerged progressively across cycles as students became increasingly familiar with PBL processes, and the researcher refined instructional approaches based on reflective analysis. This section presents quantitative achievement data, followed by qualitative evidence of learning processes, and concludes with an integrated discussion situating the findings within broader theoretical and practical contexts.

B. Cycle I: Initial Implementation and Outcomes

Cycle I comprised two instructional sessions focused on the fables "The Tortoise and the Hare" and "The Ant and the Grasshopper." Pre-test administration revealed a baseline mean score of 69.16 (SD = 8.72), with scores ranging from 50−80. Only eight students (41.66%) achieved the mastery threshold of 75, indicating that the majority entered the instruction with inadequate fable comprehension skills. Post-test results demonstrated modest improvement: the mean increased to 73.33 (SD = 7.45), with a range of 55-85. Mastery rates increased to 66.6% (13 students), representing a 25-percentage-point increase. While encouraging, these results fell short of the target 75% mastery rate, indicating the need for instructional refinement.

Tabel 1. Student Achievement Results Across Cycles

Cycle	Test Phase	Mean Score	SD	Minimum	Maximum	N Mastery	% Mastery
I	Pre-test	69.16	8.72	50	80	8	41.66%
I	Post-test	73.33	7.45	55	85	13	66.6%
II	Pre-test	81.6	6.83	60	85	15	75%
II	Post-test	85.83	5.91	60	90	17	83.3%

The within-cycle gain of 4.17 points (Cohen's d = 0.52, medium effect) suggested that PBL began producing measurable impacts, although additional refinement was necessary. Analysis of individual item performance revealed differential gains across the comprehension dimensions. Students showed marked improvement in identifying explicit narrative elements (characters, settings) and recalling plot sequences—lower-order comprehension skills after the intervention. However, performance on items requiring inference of character motivations or interpretation of implicit moral messages remained weak, with mean scores on these higher-order items remaining below 70% accuracy, even after instruction.

Similiarly, the observational data indicated incomplete success during Cycle I. Five behavioral indicators were monitored across two instructional sessions, with percentages representing the proportion of students demonstrating target behaviors.

Tabel 2. Student Engagement Indicators - Cycle I

Indicator	Session 1	Session 2	Mean	Category
Attention to teacher explanation	75%	66.6%	70.8%	Adequate
Questioning during discussion	66.6%	66.6%	66.6%	Adequate
Collaborative group work	58.3%	75%	66.5%	Adequate
Presenting solutions to class	66.6%	75%	70.8%	Adequate
Contributing to lesson summary	66.6%	75%	70.8%	Adequate
Overall Engagement	66.6%	71.6%	69.1%	Adequate

The overall engagement rate of 69.1% indicated that approximately two-thirds of the students actively participated in the PBL processes, representing an improvement over baseline observations, wherein fewer than half actively engaged. However, there remains substantial room for improvement. Notably, collaborative group work showed the lowest initial engagement (58.3%) but improved markedly by Session 2 (75%), suggesting that students required time to adapt to collaborative norms. Conversely, attention to teacher

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explanations declined from Session 1 to Session 2, possibly indicating fatigue or the need for more engaging introduction strategies.

Qualitative analysis of the observation notes and teacher reflections identified several implementation challenges. First, time management was problematic. Group investigations frequently extended beyond the allocated time, compressing the discussion and reflection phases. Students required extensive time to read texts, comprehend scenarios, formulate interpretations, and reach consensus processes that the initial lesson plans underestimated. Consequently, several groups failed to complete the analyses or produced superficial responses.

Second, the group dynamics varied considerably. Some groups demonstrated productive collaboration, with members contributing equitably and engaging in substantive, interpretive discussions. Other groups exhibited problematic patterns: dominant students monopolizing discussions while quieter peers remained passive, groups fragmenting into parallel individual work rather than genuine collaboration, and conflicts over role assignments or differing interpretations. The teacher's attempts to circulate and support all groups proved insufficient, given the number of students requiring intervention.

Third, many students struggled with the open-ended nature of the interpretive problems. Accustomed to questions with singular correct answers, students expressed frustration when facing problems with multiple valid interpretations. Some sought teacher validation: Is this the right answer?"—rather than engaging in evidence-based argumentation. Others simply selected the first plausible interpretation without considering alternatives or systematically examining textual support.

Fourth, the presentations varied markedly in quality. While some groups produced thoughtful analyses supported by textual evidence, others offered superficial responses barely exceeding plot summaries. Audience engagement during presentations was minimal; students passively watched rather than actively listening, questioning, or critiquing. The intended dialogic learning was not realized.

Reflective analysis identified several factors contributing to these challenges: insufficient scaffolding of collaborative norms and interpretive strategies, inadequate time allocations, problems too complex for initial implementation, and ineffective group composition. These insights informed substantial modifications to Cycle II.

Based on the Cycle I reflection, multiple refinements were implemented for Cycle II. First, collaborative norms were explicitly instructed. Time was allocated for teaching and practicing active listening, equitable participation, constructive disagreement, and evidence-based argumentation. Groups established behavioral contracts that specified participation expectations. These investments in collaborative competency development are aimed at enhancing group functioning.

Second, the problems were strategically simplified and thoroughly scaffolded. Rather than immediately confronting complex interpretive problems, Cycle II began with structured analysis tasks: identifying character traits and supporting evidence, mapping cause-effect relationships in the plot, and listing possible moral lessons. Only after completing these preparatory tasks did the groups address interpretive problems. This graduated complexity prevents cognitive overload while building analytical skills.

Third, time allocations were substantially increased, with sessions being extended from 60 to 90 minutes. Additional time enabled more thorough reading, richer discussions, and adequate presentation and reflection periods. Pacing guidelines were introduced, specifying target times for each phase to help groups manage their time effectively.

Fourth, group compositions were revised based on the social dynamics and compatibility observed in Cycle I. Students with demonstrated leadership skills were distributed across groups rather than being concentrated. Potential personality conflicts, which were evident in Cycle I, were avoided. While maintaining heterogeneity in academic ability, greater attention is paid to social compatibility.

Fifth, the presentation expectations were clarified and structured. Groups received explicit criteria specifying that presentations must include a summary of the problem, key interpretive claims, textual evidence supporting claims, consideration of alternative interpretations, and application to real-life situations. Audience members received structured response protocols—each must pose one question or offer one critique. These structures aim to transform presentations into genuine learning opportunities rather than performative rituals.

Sixth, the teachers' facilitation strategies were refined. Rather than reactive troubleshooting, proactive monitoring was implemented by —regularly checking each group's progress, posing questions to advance thinking, providing targeted scaffolding, and ensuring equitable participation. Teachers modeled interpretive thinking through occasional think-aloud demonstrations, making expert strategies visible to novices.

These refinements produced markedly improved outcomes in Cycle II, which focused on the fables "The Lion and the Mouse" and "The Fox and the Grapes." The pre-test results revealed substantial retention from Cycle

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I, with a mean score of 81.6 (SD = 6.83), and 75% of students (15 of 20) achieving mastery. This represented significant growth from the Cycle I post-test scores, suggesting that learning was sustained rather than ephemeral. Importantly, even students who had not mastered the content in Cycle I demonstrated improvement, indicating that the refined approach reached diverse learners.

Post-test results confirmed the effectiveness of Cycle II refinements: mean score reached 85.83 (SD = 5.91), with 83.3% mastery (17 of 20 students). Only three students failed to achieve the 75-point threshold, and even these students demonstrated growth from their pre-test scores. The within-cycle gain of 4.23 points (Cohen's d = 0.68, medium-to-large effect) paralleled Cycle I's improvement magnitude, but occurred from a substantially higher baseline, indicating continued growth rather than plateau effects.Particularly encouraging, item-level analysis revealed improvements extending beyond basic recall to higher-order comprehension. Mean accuracy on items requiring inferential reasoning about character motivations increased from 68% (Cycle I post-test) to 84% (Cycle II post-test). Items assessing interpretation of implicit moral messages showed similar gains, from 65% to 82% accuracy. These results suggest PBL successfully developed precisely the analytical and interpretive competencies that traditional instruction had failed to cultivate.Furthermore, the reduced standard deviation in Cycle II post-test (5.91) compared to pre-study baseline (8.72) indicates decreased achievement variability—students converged toward higher performance levels rather than maintaining wide gaps between high and low achievers. This pattern suggests PBL may promote more equitable outcomes than traditional instruction, potentially by providing struggling students with collaborative supports while challenging advanced students through open-ended problems.

Parallel to achievement gains, student engagement indicators improved substantially in Cycle II:

Table 3. Student Engagement Indicators - Cycle II

Indicator	Session 1	Session 2	Mean	Category
Attention to teacher explanation	91%	91%	91%	Excellent
Questioning during discussion	83%	91%	87%	Excellent
Collaborative group work	83%	83%	83%	Excellent
Presenting solutions to class	75%	83%	79%	Good
Contributing to lesson summary	75%	75%	75%	Good
Overall Engagement	81.6%	85.83%	83%	Excellent

The overall engagement rate of 83% represented a 14-percentage-point increase from Cycle I (69.1%), with particularly notable gains in attention (70.8% to 91%) and questioning (66.6% to 87%) during Cycle II. These improvements suggest that students became increasingly comfortable with PBL processes, developed greater investment in learning, and perceived classroom activities as meaningful rather than perfunctory. Qualitative observations corroborate these quantitative patterns.

Attention behaviors have transformed markedly. Whereas Cycle I revealed frequent off-task behaviors students gazing around the room, doodling, or conversing about irrelevant topics during teacher explanations Cycle II demonstrated sustained focus. Students leaned forward attentively, tracked the teacher’s movements, and exhibited facial expressions indicating cognitive engagement. This shift likely reflects both improved instructional design (clearer, more engaging problem presentations) and students' growing recognition that attending to explanations facilitated subsequent group work.

Questioning behaviors similarly evolved. Early Cycle I questioning was dominated by procedural clarifications"Should we write this down?" "How long should our answer be?"rather than substantive content inquiries. By Cycle II, questions increasingly addressed conceptual issues: "Could the fox have obtained grapes through cooperation instead of giving up?" "Why does the author make the lion show mercy?" Such questions indicated students were engaging deeply with textual meanings rather than superficially completing tasks.Collaborative group work exhibited the most dramatic transformation. Cycle I groups frequently worked in parallel—students sitting together physically but cognitively isolated, each completing tasks individually. By contrast, Cycle II groups demonstrated genuine collaboration: animated discussions, disagreements resolved through evidence examination, shared construction of interpretations. Students utilized academic

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language frames introduced during collaborative norms instruction"I respectfully disagree because..." "The evidence on page X suggests..." "Building on your idea..."indicating internalization of productive discourse patterns.

The presentation quality improved markedly. Whereas Cycle I presentations often consisted of one student reading from notes while others stood silently, Cycle II presentations demonstrated distributed responsibility, with different members presenting distinct components of the topic. Groups incorporated visual aids, such as charts and drawings, to enhance communication. Perhaps most significantly, the presentations generated substantive audience engagement; questions, critiques, and extensions emerged organically, transforming the presentations into dialogic learning events.

Beyond quantitative metrics, rich qualitative evidence illuminates the mechanisms through which PBL enhances learning. Three themes emerged from the analysis of the observation notes, teacher reflections, and student work artifacts.

Theme 1: From Passive Reception to Active Construction. Students' epistemic stances—their beliefs about knowledge and learning shifted throught the study. Initially, students approached fables as repositories of pre-existing meanings that teachers possessed and transmitted to them. Questions such as "What's the moral of this story?" anticipated teacher-supplied answer. By Cycle II, the students increasingly recognized themselves as legitimate interpreters capable of constructing meaning. Statements such as "I think the moral is..." replaced "The moral is..." This subtle linguistic shift insertion of "I think" markin a profound conceptual transformation: acknowledgment that interpretation involves personal agency, that multiple valid readings may coexist, and that one's ideas warrant articulation and defense.

This transformation manifested in the students' treatment of textual ambiguity. Initially, ambiguous elements generated frustration, and students sought teacher clarification to resolve uncertainty definitively. Progressively, students came to view ambiguity as an invitation for interpretation. For instance, when analyzing "The Fox and the Grapes," different groups offered distinct interpretations of the fox's motivations: some argued that the fox genuinely could not reach the grapes and rationalized failure to protect self-esteem; others contended that the fox did not genuinely want grapes and merely sought attention; a third group proposed that the fox wanted to encourage others that unattainable goals are not worth pursuing. Rather than seeking teacher adjudication of which interpretation was "correct," students debated the merits of each, examining textual evidence and logical coherence. This comfort with interpretive plurality marks sophisticated literacy development.Theme 2: Collaborative Dialogue as Cognitive Scaffold. Vygotsky's (1978) sociocultural theory posits that higher-order thinking initially emerges in social interactions before becoming an internalized individual capacity. Classroom observations provide compelling evidence for this process. During group discussions, students think aloud, question each other, offer alternative perspectives, and collectively construct interpretations. These dialogic interactions served as cognitive scaffolds, enabling students to accomplish interpretive work beyond their individual capabilities.

For example, one group analyzing "The Lion and the Mouse" initially proposed a simple interpretation: "Help everyone because they might help you later." Through discussion, this interpretation was progressively elaborated and nuanced further. One student noted that the lion initially did not help the mouse intentionally but rather showed mercy, prompting the group to distinguish helping from mercy. Another observed that the lion probably doubted that a mouse could ever reciprocate, adding the element of humility—recognizing that even seemingly powerless others possess value. The third member connected the story to real experiences of being helped by unexpected sources. The final interpretation—"We should show kindness without expecting returns, remain humble about our own power, and recognize that everyone has potential to contribute"—far exceeded any individual's initial thinking, emerging through collaborative cognitive work.

Importantly, productive disagreement was central to cognitive growth. Groups that reached a consensus too quickly, without genuine engagement with alternative perspectives, produced less sophisticated interpretations. Groups in which members respectfully challenged each other, demanded textual evidence, and considered multiple possibilities generated richer analyses. This finding underscores the importance of establishing classroom norms that frame disagreements as intellectually productive rather than socially threatening.

Theme 3: Metacognitive Awareness and Strategic Learning. The reflection phases concluding each lesson promoted metacognitive awareness—students' thinking about their own thinking and learning processes. Over time, the students articulated increasingly sophisticated insights into effective interpretation strategies. Comments such as "We should read the story twice—once to understand what happens, then again to think about why characters act that way" or "Looking for patterns across fables helps identify common lessons" revealed developing strategic knowledge. Some groups began creating interpretive heuristics—systematic

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approaches for analyzing fables—demonstrating the transfer of learning beyond specific texts to generalizable strategies.

This metacognitive development is a critical outcome of PBL. Traditional instruction rarely creates space for students to examine their learning processes; the focus remains on content mastery, with little attention to how that mastery is achieved. In contrast, PBL's reflective phases position learning processes as legitimate objects of inquiry. Students come to recognize that effective learning requires strategic thinking, that different problems may demand different approaches, and that reflecting on strategy effectiveness enables continuous improvement. These metacognitive competencies transcend fable comprehension, representing transferable learning-to-learn skills that are applicable across domains.

C. Discussion

The substantial achievement gains and engagement improvements documented in this study align with the theoretical predictions regarding PBL's learning mechanisms of PBL. From a constructivist perspective, PBL's effectiveness derives from positioning students as active knowledge constructors rather than passive recipients. When students encounter authentic problems before receiving explicit instruction, cognitive disequilibrium is created, —as existing knowledge proves inadequate for problem resolution, motivating learning. This motivated learning, driven by a genuine need-to-know rather than external compliance, tends to be deeper and more durable than that resulting from traditional instruction (Sliwka et al., 2024).

The fable interpretation problems employed in this study created precisely this type of productive disequilibrium. Questions such as "Why did the hare lose despite being faster?" cannot be answered through simple recall; they required analysis, inference, and synthesis. Students recognized that their existing knowledge was insufficient, motivating them to read carefully, consider character motivations, identify causal patterns, and construct explanations. This problem-driven inquiry resulted in more thorough text engagement than would occur in traditional instruction, where teachers simply announce interpretations.

Additionally, PBL's collaborative dimension of PBL activates sociocultural learning mechanisms. Vygotsky's zone of proximal development concept posits that students can accomplish more complex tasks with assistance from more capable peers than they can independently. Heterogeneous grouping in this study ensured that each group contained students with diverse strengths some strong in reading fluency, others in inferential reasoning, and others in verbal articulation. Through collaboration, students supported each other's learning, collectively achieving interpretive sophistication that exceeded their individual capabilities (Gibney et al., 2025).

The gradual improvement across cycles also reflects PBL's iterative, scaffold-to-fade design principle of PBL. Initial cycles provided substantial scaffolding structured analysis tasks, explicit modeling, and frequent teacher intervention. As students developed competency, scaffolding was progressively reduced, and students assumed greater autonomy. By Cycle II, groups initiated analyses without awaiting teacher direction, managed their own discussions, and sought teacher support selectively rather than dependently. This progressive autonomy development represents a key PBL outcome: students learning not just content but also how to learn.

The findings of this study have several implications for instructional practice. First, they provide empirical support for implementing PBL in elementary language arts classrooms, specifically for literary-text comprehension. While PBL has been extensively researched in science and mathematics, this study demonstrates its viability and effectiveness in developing interpretive reading competencies. Elementary teachers seeking to move beyond traditional comprehension instruction which often reduces to literal recall questioning—can look to PBL as a structured approach for promoting higher-order thinking (Alanazi & Al-Zahrani, 2025).

Second, this study illuminates the implementation considerations critical for PBL's success of PBL. The challenges encountered in Cycle I time management difficulties, unproductive group dynamics, and student struggles with open-endedness are likely common across PBL implementations. The successful refinements in Cycle II suggest several facilitation strategies: explicit instruction in collaborative norms before expecting productive group work; graduated problem complexity, starting with structured analysis before confronting open-ended interpretation; adequate time allocations recognizing that inquiry-based learning is time-intensive; strategic grouping attending to both academic heterogeneity and social compatibility; and structured presentation protocols transforming them into genuine learning opportunities.

Third, the findings emphasize the necessity of teacher facilitation skills. PBL's student-centeredness should not be misconstrued as teacher absence. Rather, teachers play sophisticated roles, such as designing problems at appropriate complexity levels, scaffolding inquiry processes through strategic questioning, monitoring group dynamics and intervening judiciously, orchestrating whole-class discussions that synthesize insights

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across groups, and promoting metacognitive reflection. These facilitation competencies require professional development; teachers cannot simply adopt PBL without prior preparation. Schools implementing PBL should invest in sustained teacher learning that focuses on facilitation strategies.

Fourth, this study suggests PBL's potential of PBL for promoting educational equity. The reduced standard deviation in achievement across cycles indicates that struggling students made proportionally greater gains than initially high-achieving students, thus narrowing the achievement gaps. This pattern likely reflects PBL's collaborative structure of PBL, providing struggling students with peer support while simultaneously challenging all students through open-ended problems. In contexts characterized by wide achievement variability, PBL may offer a more equitable instructional approach than ability-grouped differentiated instruction, which can inadvertently reinforce disparities.

Implementing PBL in Indonesian classrooms introduces specific cultural and contextual considerations. Indonesian educational culture has historically emphasized teacher authority, respect for knowledge, and individual assessment. PBL's collaborative, student-centered, and inquiry-oriented approach represents a significant departure from these traditions. Several factors mediated the successful implementation of this study.

First, framing PBL as aligned with Kurikulum Merdeka's principles proved important. Rather than positioning PBL as a foreign import, it was presented as operationalizing the independent curriculum's emphasis on student-centered, differentiated learning. This framing enhanced teacher buy-in and parental acceptance.

Second, explicit attention to Indonesian cultural values shaped the implementation. Collaborative norms emphasized not only participation but also adab (respectful conduct), recognizing that Indonesian students may be less accustomed to questioning or disagreeing openly. Structured sentence frames helped students articulate disagreement respectfully: "I understand your perspective, however I see it differently because..." This culturally responsive adaptation enabled productive disagreement without violating relational norms.

Third, the action research methodology used in this study proved to be culturally appropriate. Indonesian teachers increasingly engage in classroom action research for professional development, making this approach familiar and feasible. The iterative and reflective nature of action research aligns with teachers' developing identities as reflective practitioners.

Fourth, linking fable interpretation to Islamic values proved pedagogically powerful, given the school's Islamic identity. Fables' moral lessons were connected to Islamic ethical principles—honesty, humility, diligence, and compassion—making them culturally resonant for students. This integration demonstrates PBL's adaptability of PBL to diverse value systems.

These contextual considerations suggest that while PBL's core principles of PBL possess cross-cultural validity, its implementation must be culturally responsive, attending to local values, norms, and educational contexts.

While this study provides encouraging evidence of PBL's effectiveness, several limitations warrant acknowledgment. The absence of a control group precludes definitive causal attribution; observed improvements might reflect maturation, practice effects, or other factors beyond PBL's implementation. The small sample size from a single classroom limits generalizability. The researcher's dual role as a teacher-investigator introduced potential bias despite triangulation efforts. The relatively short intervention duration (two cycles, approximately six weeks) does not address questions about long-term retention or transfer.

Future research should address these limitations in several ways. Quasi-experimental designs comparing PBL classrooms to matched comparison groups employing traditional instruction would strengthen the causal inference. Multi-site studies across diverse Indonesian contexts—urban/rural, public/private, and varying socioeconomic compositions—would illuminate how contextual factors mediate PBL's effectiveness. Longitudinal investigations examining sustained impacts and transfers to new texts or domains would provide evidence of enduring learning. A fine-grained discourse analysis of group interactions illuminates the micro-processes through which collaborative problem-solving produces learning. Studies investigating teacher professional development for PBL facilitation can inform scalable implementation.

Additionally, future research might examine PBL's effectiveness for other literary genres or literacy competencies. Does PBL similarly enhance the comprehension of expository texts, poetry, or longer narratives? Can PBL support writing development, such as composition of original fables? How might PBL be adapted for multilingual contexts in which students are learning Indonesian as an additional language?

IV. CONCLUSIONS

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This classroom action research investigated the effectiveness of Problem-Based Learning() PBL in enhancing fifth-grade students' fable text comprehension in an Indonesian elementary school. Across two action research cycles, quantitative and qualitative evidence documented substantial improvements in achievement outcomes and engagement indicators. Student mastery rates increased from 41.66% at baseline to 83.3% following refined PBL implementation, while mean assessment scores rose from 69.16 to 85.83. Parallel improvements occurred in behavioral engagement, with overall participation rates increasing from 69.1% to 83%. These gains extended beyond superficial recall to encompass higher-order competencies, such as inferring character motivations, interpreting implicit moral messages, and constructing evidence-based arguments. Qualitative analysis illuminated the mechanisms underlying these improvements in the study. PBL transformed students from passive knowledge recipients to active constructors of meaning, fostered collaborative dialogue that served as a cognitive scaffold for interpretive work, and promoted metacognitive awareness of learning strategies. The iterative refinement across cycles demonstrated both PBL's adaptability and the importance of responsive facilitation—adjusting problem complexity, scaffolding collaborative processes, and structuring reflection opportunities. These findings have important implications for Indonesian elementary education. As schools implement Kurikulum Merdeka's student-centered vision, PBL offers a structured, theoretically grounded, and empirically supported approach for operationalizing these principles. This study provides practical guidance regarding implementation challenges and effective facilitation strategies, potentially informing teacher professional development efforts. Importantly, evidence of reduced achievement variability suggests PBL's potential for promoting more equitable learning outcomes, —a critical consideration in contexts characterized by wide performance gaps.

Funding Statement

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Ethical Compliance

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Data Access Statement

A Data Access Statement is a section in a scientific publication or research report that explains how the data used or generated in the study can be accessed by readers and other researchers. This statement aims to promote transparency, support research reproducibility, and comply with open-access policies, where applicable.

Common Elements in a Data Access Statement:

1. Data Location: Specifies where the data are stored, such as online repositories (e.g., Zenodo, Dryad, or institutional repositories).
2. Access Instructions: Provides information on how to access the data, such as direct links, DOI (Digital Object Identifier), or contact details.
3. Data Availability: Indicates whether the data are publicly accessible, available upon request, or restricted due to ethical, legal, or privacy considerations.
4. Data Licensing: If the data are open, specify the applicable license (e.g., Creative Commons).

Examples of Data Access Statements:

1. Open Data:
   - "The data supporting this study are openly available in Zenodo at [DOI:10.xxxx/zenodo.xxxx]."
2. Restricted Data:
   - "The data that support the findings of this study are available upon request from the corresponding author. Due to privacy concerns, the data are not publicly available."
3. No Data Available:
   - "No datasets were generated or analyzed during the current study."
4. Conditional Access:
   - "The data supporting this study are available under restricted access and can be obtained upon reasonable request form the corresponding author with the permission of the ethics committee."

Purpose of a Data Access Statement:

- Reproducibility: Enables other researchers to replicate or verify the findings.
- Collaboration: Encourages further collaboration by sharing data.

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- Compliance: Adheres to the policies of funding agencies or journals that require open access to data.

Conflict of Interest Declaration

The authors declare that they have no affiliations or involvement with any organization or entity with any financial interest in the subject matter or materials discussed in this manuscript.

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