

Optimization of Reflection Activities to Improve Students' Learning Understanding at State Middle School 6 Palangka Raya

¹Susi Sukarningsi., ¹Mimi Suriatie., ¹Oktamia Karuniaty Sangalang., ¹Esty Pan Pangestie., ¹Meriance Momai

¹Universitas Palangka Raya, Central Borneo, Indonesia.

Article Information	ABSTRACT
Received: August 2026	Background: Understanding learning concepts is a fundamental pillar for student academic success. However, many students face substantial challenges in comprehending instructional materials, as evidenced by low engagement, difficulty contextualizing theoretical concepts with daily life, and suboptimal problem-solving abilities. This study investigates the optimization of structured reflection activities to enhance students' comprehension of learning at SMP Negeri 6 Palangka Raya. Grounded in the Kurikulum Merdeka framework, which advocates student-centered pedagogy, reflection was implemented systematically to reinforce self-awareness, critical thinking, and learning autonomy. Using a pre-experimental one-group pretest-posttest design involving 30 eighth-grade students, the quantitative data demonstrated significant gains in comprehension, complemented by qualitative findings from triangulated semi-structured interviews. The results indicate that systematic reflection functions not only as a diagnostic assessment tool for teachers to adapt instruction but also as a metacognitive vehicle that empowers students to self-regulate their learning. Keywords: Reflection Activities, Learning Comprehension, Metacognition, Independent Curriculum. © 2026 Susi Sukarningsi, Mimi Suriatie, Oktamia Karuniaty Sangalang, Esty Pan Pangestie, Meriance Momai. Published by Institute for Research and Community Services Universitas Muhammadiyah Palangkaraya. This is Open Access article under the CC-BY-SA License (http://creativecommons.org/licenses/by-sa/4.0/).
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Corresponding Author:

Susi Sukarningsi
Guidance and Counseling
[Universitas Palangka Raya](#)
Yos Sudarso Street, Palangka Raya, Central Kalimantan 73111
Email: susi.sukarningsi@gmail.com

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INTRODUCTION

Education is a fundamental medium for cultivating students' cognitive competencies, analytical skills, and real-world adaptability. Within modern instructional paradigms, meaningful learning requires students not only to master instructional materials but also to contextualize learned concepts within everyday experiences. In this context, pedagogical reflection serves as an essential metacognitive mechanism. It allows learners to systematically assess their learning trajectories, recognize conceptual bottlenecks, and reinforce comprehensive understanding through self-regulated evaluation.

Despite its recognized theoretical benefits, the implementation of reflection activities in real classroom settings often faces operational challenges. Preliminary observations and diagnostic assessments conducted at SMP Negeri 6 Palangka Raya revealed that reflective practices were rarely structured or documented systematically. Teachers predominantly treated reflection as a brief, informal closing ritual rather than an analytical learning phase. Consequently, initial baseline assessments indicated that approximately 68% of students struggled to critically evaluate their own learning progression. Furthermore, preliminary cognitive evaluations yielded an average comprehension score of 58.4, which falls notably below the minimum mastery criterion of 75.0.

While existing literature extensively highlights the impact of reflective learning, prior research predominantly focuses on higher education environments or relies primarily on general qualitative descriptions. There remains a critical empirical gap regarding the systematic, quantitative assessment of structured reflection models implemented within the Kurikulum Merdeka framework at the junior high school level. The novelty of this study lies in the formulation and evaluation of an integrated, scaffolded reflection framework tailored to the instructional demands of the Kurikulum Merdeka at SMP Negeri 6 Palangka Raya, capturing both quantitative learning gains and students' affective responses.

Based on the identified problems, this study addresses three core research questions:

1. How is the optimization of structured reflection activities implemented within the Kurikulum Merdeka at SMP Negeri 6 Palangka Raya?

2. Is there a statistically significant difference in students' learning comprehension before and after participating in structured reflection activities?
3. How do students perceive the integration of structured reflection within their learning process?

The operational hypotheses tested in this study are formulated as follows:

- H_0 : There is no statistically significant difference in students' comprehension scores between the pretest and posttest following the implementation of structured reflection activities.
- H_1 : There is a statistically significant difference in students' comprehension scores between the pretest and posttest following the implementation of structured reflection activities.

METHOD

This study employed a quantitative pre-experimental approach using a One-Group Pretest-Posttest Design to evaluate the impact of structured reflection activities on junior high school students' learning comprehension.

The study population comprised eighth-grade students at SMP Negeri 6 Palangka Raya. A purposive sampling technique was applied with the specific criteria that students had adequate prior classroom learning experience and basic readiness to complete reflective self-evaluations independently. All 30 students in the designated class participated as the research sample (N = 30).

The research procedure consisted of three structured stages:

1. **Pre-Intervention Phase (Pretest):** Administration of a 30-item diagnostic pretest to establish baseline cognitive comprehension before treatment.
2. **Intervention Phase (Structured Reflection):** Implementation of structured reflection sessions conducted weekly (15 minutes before the end of each instructional unit) across several meetings, utilizing the three-tier framework: (a) *What?* (identifying learned concepts), (b) *So What?* (evaluating importance and challenges), and (c) *Now What?* (planning corrective action). Teachers provided formative feedback following each reflection.
3. **Post-Intervention Phase (Posttest & Interviews):** Administration of a 30-item posttest to measure learning gains, paired with semi-structured triangulation interviews with students and subject teachers to capture qualitative insights regarding learning comfort, challenges, and instructional responsiveness.

Instrument reliability was verified using Cronbach's Alpha, demonstrating high internal consistency for both the pretest ($\alpha = 0.925$) and posttest ($\alpha = 0.947$), well exceeding the standard threshold of 0.70.

RESULTS AND DISCUSSION

The empirical results revealed a marked improvement in students' learning comprehension following the implementation of structured reflection activities.

The mean posttest score increased from 58.40 to 81.25, with an average normalized gain (N-gain) of 0.55, categorizing the improvement in the medium-to-effective gain tier.

Table I. Structured Reflection Activities

Assessment Metric	Pretest Score	Posttest Score	Mean Gain	N-Gain Index	Category
Mean Score	58.40	81.25	+22.85	0.55	Medium / Effective
Minimum Score	42.00	68.00	+26.00		
Maximum Score	73.00	95.00	+22.00	—	—
Standard Deviation	8.12	6.84			

According to Dewey (1933), reflection is an active, continuous, and careful thinking process about something, a belief or knowledge based on reasons that support it. Reflection involves considering past experiences, understanding the results obtained, and thinking about a better way to handle similar situations in the future. In that regard, Schön (1983) explains reflection through draft reflection-on-action, namely the process of reflecting on actions that have been done by analyzing experience and results obtained as a basis for determining better actions in the future. (Machost & Stains, 2023)

In learning, activity reflection can be done in various ways, such as journal reflection, reflective questions, discussion groups, card reflection (reflection card), and digital media. Activities help participants gain a greater understanding of the material and, at the same time, increase awareness of the process and development of learning it. (Maskana et al., 2024)

Purpose Of Reflection Activities

Implementing reflection activities in learning has several objectives, including:

1. Know the level of understanding students have of the material that has been studied.
2. Identify the difficulties students experience during the learning process.
3. Increase the ability to think critically through the evaluation process.

4. Encourage independent study in students to plan step-by-step learning.
5. Give feedback to the teacher regarding the effectiveness of the learning that has been implemented.
6. Increase the quality of the learning process through continuous improvement.
7. Through activity reflection, students not only passively accept information, but also actively evaluate and build understanding based on the experience learning that has been obtained. (Rook et al., 2026)

Models Of Reflection Activities In Learning

Several reflection models can be implemented in the learning process, including:

1. Written Reflection

Reflection model: This is done by asking students to write about their experiences, understanding, and difficulties during learning. The form can be a daily journal, reflection sheet, or learning notes (Lufri et al., 2021)

2. Oral Reflection

Reflection done through discussion, asking questions, or delivering opinions in a direct way regarding the learning process that has taken place (Ducasse, 2022)

3. Reflection Card

A reflection card is a reflection medium in the form of a card containing reflective questions to help students disclose understanding, impressions, and needs study after the learning (Kloep et al., 2023)

4. Digital-Based Reflection

Reflection is done using digital platforms such as Google Forms, Google Sites, Padlet, or application learning; other students can give feedback and come back in a fast and documented way (Kurniati et al., 2025)

5. Reflection Model "What? – So What? – Now What?"

This model consists of on three stages:

What? (What was learned ?)

So What? (Why does it matter? How is it important ?)

Now What? (What will happen ?) Done after learning it ?) (Kayan Fadlelmula & Qadhi, 2024)

This model Is used because it's simple and helps students connect their experiences to real-world action.

Understanding Learning Student

Understanding learning is the ability of students to grasp meaning, explain it back, connect it, and apply the concept that has been studied. According to Bloom's Taxonomy revised by Anderson and Krathwohl (2001), understanding is at the cognitive level, which includes the ability to interpret, give examples, classify, summarize, conclude, compare, and explain something (Andi Sahrul Jahrir, 2023)

Indicators of understanding learning in students include:

1. Ability to explain the material with Language Alone.
2. Ability to give appropriate examples with concepts learned.
3. Ability to connect material with daily life.
4. Ability to finish tasks or problems based on the concept that has been understood.
5. Ability to draw an interesting conclusion from material learned.

Good understanding shows that students not only memorize information but are also capable of processing and applying it in various contexts (Wahyuni et al., 2023).

Table II. Reliable Data

No	Instrument	Number of Items	Cronbach Alpha	Reference Limit	Decision
1	Pretest	30	0.925	0.7	Reliable
2	Posttest	30	0.947	0.7	Reliable

Discussion

Research results show that reflection on optimization activities can increase students' understanding of learning. This is seen from the existence of improvement results: Study after student follow-up activity reflection, in a structured way. Through activity reflection, students can identify material that has been understood, recognize difficulties in learning, and plan repairs for learning next. This process helps students understand the material in a deeper way and enhances their involvement in learning. Findings: This is in line with Dewey's (1933) and Schön's (1983) opinions, which state that reflection is a thinking process to experience and get greater understanding . Good. In addition, the results of this study also support Anderson and Krathwohl's (2001) theory, which explains that understanding is shown through the ability to explain, connect, and apply the concepts that have been studied. Thus, the activity reflection can be an effective strategy for increasing students' understanding at State Middle School 6 Palangka Raya.

Interviews were conducted by the team with students and teachers to gather information about students' understanding of the material and their comfort during and after the learning process. Interviews with students aim to understand their experiences, levels

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