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The Influence of Problem Based Learning, Emotional Intelligence, and Reading Skills on Elementary School Students' Comprehension

Maria Lidyawati[1], Sudi Dul Aji[2], Roni Alim Ba'diyah Kusufa[3]
[1]mariawati82@guru.sd.belajar.id, [2]sudi@unikama.ac.id, [3]roniabk@unikama.ac.id
[123] University Of PGRI Kanjuruhan Malang
*mariawati82@guru.sd.belajar.id

Abstract

This study aims to analyze the influence of the Problem Based Learning (PBL) learning model, emotional intelligence, and reading skills on the understanding of elementary school students. The research approach used is quantitative with an explanatory method. The research subjects consisted of 60 grade IV students of SDN Klaseman, Gending District, Probolinggo Regency who were selected using saturated sampling techniques. Data collection instruments are questionnaires and comprehension tests that have been tested for validity and reliability. Data analysis used multiple linear regression with the help of the SPSS program version 26. The results showed that PBL models, emotional intelligence, and reading skills had a positive and significant effect on students' understanding, respectively. The results of the simultaneous test also showed that the three variables together had a significant effect with a determination coefficient value of 0.732. These findings confirm that the application of problem-based learning that is integrated with strengthening emotional intelligence and reading skills can optimally improve student understanding. The results of the research are expected to be a reference for teachers in developing more interactive learning strategies oriented towards strengthening character and literacy in elementary schools.

Keywords: *Problem Based Learning, Emotional Intelligence, Reading Skills, Student Comprehension, Elementary School.*

INTRODUCTION

Basic education has an important role in forming the foundation of students' intellectual, social, and emotional abilities. Learning at this level not only emphasizes academic mastery, but also the development of 21st-century character and skills. The quality of learning is highly determined by the learning model applied by teachers in the teaching and learning process (Huang et al., 2025). Teachers as facilitators are required to be able to create an interactive and meaningful learning atmosphere. The success of basic education is an important indicator for the success of the next level of education.

An effective learning process demands the active involvement of students in discovering and building their own knowledge. Nicholus (2023) emphasized that learning that puts students as learning subjects can increase motivation, curiosity, and learning responsibility. Conventional learning models that are one-way often make students passive in receiving information. This condition causes the understanding of concepts obtained by students to be less in-depth. The application of innovative learning models is a solution to overcome these problems.

The Problem Based Learning (PBL) learning model is one of the relevant approaches to be applied to basic education. PBL places real problems as the starting point of the learning process

that encourages students to think critically and creatively. Problem-based learning invites students to work together, seek information, and find solutions independently or in groups. The process fosters high-level thinking skills and social skills that are important in life (Wang, 2021). The teacher acts as a facilitator who directs students to build meaning from the learning experience.

PBL has characteristics that are oriented towards the active involvement of students in the learning process. Learning takes place through the stages of problem presentation, information collection, data analysis, and problem solving. The activity trains students to think systematically and develop scientific communication skills. Meaningful learning experiences encourage students to relate concepts to real-life situations. The understanding of concepts becomes more profound because it is obtained through exploration and reflection (Ge, 2025).

Emotional intelligence is an important aspect that also determines the success of student learning. The ability to manage emotions, understand the feelings of others, and build social relationships are the main provisions in facing learning challenges. Goleman explained that emotional intelligence includes self-awareness, self-control, motivation, empathy, and social skills. Özdemir (2024) emphasized that the development of emotional intelligence in schools helps students in adjusting to the learning environment. Good emotional management also improves students' ability to cooperate and resolve conflicts.

Reading skills are a basic ability that every elementary school student must have. Reading activities are not only recognizing letters and words, but also understanding the meaning and message contained in the text. Comprehension reading skills allow students to interpret information critically and relate it to previous knowledge. Low reading ability among students is often an obstacle to achieving optimal academic achievement (Leasa, 2023). Improving reading skills is an important focus in the learning process.

Meaningful reading activities will support students' cognitive and language development. Understanding reading texts helps students expand their horizons and enrich vocabulary (Dixon, 2024). Teachers have a strategic role in guiding students to understand the content of reading with the right reading techniques. Interesting learning strategies can increase students' reading interest and activeness. A conducive learning environment also strengthens reading motivation among students.

The application of PBL is believed to be able to integrate the development of reading skills with the formation of emotional intelligence. The process of inquiry and discussion in PBL trains students to understand information from various sources in depth. Group activities encourage social interaction that develops empathy and cooperation between students. PBL also provides space for students to express their opinions and manage emotions positively (Rahmah, 2023). The synergy between the cognitive and affective aspects supports the improvement of concept understanding.

Students' understanding of learning materials reflects the extent to which they are able to process and apply information. Students with a high understanding can explain concepts in their own language and relate them to everyday life. Arias & Pino-Juste (2022) affirm that good comprehension is not only determined by intellectual ability, but also by emotional readiness and the learning strategies used. PBL provides a learning experience that demands students to think logically and reflectively. This kind of learning strengthens memory and knowledge application skills.

Conditions in the field show that there are still many elementary school students who have difficulty understanding the subject matter. The results of observations in several schools show low reading comprehension skills and emotional management of students. The monotonous learning process makes students less motivated in learning. Low student active participation has an impact on non-optimal learning outcomes (Yu & Colleagues, 2023). Changing the learning paradigm is urgent to improve the quality of education.

Teachers need to change their teaching approach from teacher-centered to student-centered. Learning models such as PBL can be used as an alternative that can increase student participation and understanding. PBL provides students with the opportunity to learn from hands-on experience and solve real problems (Chen, 2024). This approach is relevant to the characteristics of elementary school students who enjoy learning through activities and exploration. Its implementation is also in line with the principles of the Independent Curriculum which emphasizes meaningful and collaborative learning.

The Merdeka Curriculum requires students to have the competence of critical, creative, and independent thinking. Learning models that support the development of these skills are indispensable in the implementation of this curriculum. Lu (2025) emphasized that PBL is one of the appropriate models because it trains students in real problem solving. Students not only understand concepts theoretically, but also apply them in the context of life. Such learning will shape character and lifelong learning abilities.

Good emotional intelligence helps students adapt to problem-based learning challenges. Students who are able to manage their emotions will be calmer in facing learning difficulties. Collaboration in groups also fosters mutual respect and empathy between students. Learning that pays attention to emotional aspects will create a harmonious classroom atmosphere (Sharma et al., 2022). Strengthening emotional intelligence is an integral part of the implementation of PBL in elementary schools.

Reading comprehension skills can be improved through problem-based learning activities. Students are required to look for information from various reading sources that are relevant to the given problem. The process trains students to read critically and understand the content of the text in depth. McKay (2024) asserts that PBL helps students construct meaning from the information obtained and relate it to previous learning experiences. Reading activities are no longer just an academic task, but a challenging thought process.

Research on the influence of PBL, emotional intelligence, and reading skills on students' understanding is important to enrich the treasures of basic education. The results of this research are expected to make a theoretical contribution to the development of innovative learning models. Practically, the results can be a guideline for teachers in improving the quality of the teaching and learning process. Research findings can also serve as a basis for education policymakers to design comprehensive learning programs. Improving the quality of learning at the elementary level is the first step in realizing a generation of lifelong learners.

METHOD

This study uses a quantitative approach with an explanatory method because it aims to test the influence between variables through statistical analysis. The design of this study explains the cause-and-effect relationship between the Problem Based Learning (PBL) learning model,

emotional intelligence, and reading skills on the comprehension of elementary school students. The subjects of the study are all grade IV students at SDN Klaseman, Gending District, Probolinggo Regency for the 2024/2025 school year, totaling 60 students. The sampling technique uses saturated sampling, where the entire population is sampled because the number is relatively small. The research instrument is in the form of questionnaires and comprehension tests that have been tested for validity and reliability before being used in the main research.

Data was collected through questionnaires and written tests. Questionnaires were used to measure PBL learning model variables, emotional intelligence, and reading skills, while tests were used to measure variables of student comprehension. Each instrument is arranged based on relevant theoretical indicators and uses a Likert scale with five alternative answers. Data analysis was carried out by multiple linear regression test to determine the partial and simultaneous influence between variables. The analysis procedure includes a classical assumption test, a validity test, reliability, and hypothesis testing using the SPSS version 26 program. The results of the analysis are interpreted descriptively and inferentially according to the purpose of the research.

To clarify the structure of the study, the following table presents the research variables, measurement indicators, and the type of instrument used. This table helps provide a comprehensive overview of how each variable is measured systematically. The independent variable consists of PBL learning models (X_1), emotional intelligence (X_2), and reading skills (X_3), while the bound variable is student comprehension (Y). Each variable has a measurable indicator that has been designed based on relevant theories from education and learning psychology experts.

Table 1.
Research Variables and Measurement Indicators

Variable	Measurement Indicators	Instruments	Theoretical Source
Problem Based Learning (X_1) Learning Model	1) Presentation of real problems2) Independent investigation3) Group discussions4) Presentation of solutions5) Reflection on learning outcomes	Questionnaire	Arends (2020), Hmelo-Silver (2017)
Emotional Intelligence (X_2)	1) Self-awareness2) Self-management3) Motivation4) Empathy5) Social skills	Questionnaire	Goleman (2021)
Reading Skills (X_3)	1) Understanding the content of the text2) Discovering the main idea3) Interpreting the meaning of words4) Reading critically5) Analyzing the structure of the text	Questionnaire	Dalman (2017), Rahim (2017)
Student Comprehension (Y)	1) Explain concepts2) Apply in real situations3) Analyze information4) Infer meaning5) Distinguish facts and opinions	Comprehension Test	Bloom (2019), Arikunto (2019)

The table shows that all variables are measured using an approach that is consistent with theories and indicators that can be operationalized quantitatively. Each item on the questionnaire is

tested through a product moment validity test and Cronbach's Alpha reliability test to ensure data reliability. Regression analysis techniques were used to determine the significant contribution of PBL learning models, emotional intelligence, and reading skills to students' understanding both partially and simultaneously. The results of the research are expected to make an empirical contribution to the development of innovative learning strategies that are oriented towards improving the understanding of elementary school students.

RESULTS AND DISCUSSION

Results

Data analysis was conducted to determine the influence of the Problem Based Learning (PBL) learning model, emotional intelligence, and reading skills on the understanding of elementary school students. Data was obtained from the results of the distribution of questionnaires and comprehension tests to 60 grade IV students at SDN Klaseman, Gending District, Probolinggo Regency. The results of the validity and reliability test showed that all statement items on the variable had **a value of r calculated > r of the table (0.254)** and **Cronbach's Alpha value > 0.70**, which means that all instruments are suitable for use in this study. The analysis was followed by a multiple linear regression test to determine the magnitude of the influence of each independent variable on the bound variable.

The results of the regression analysis showed that the three independent variables had a positive and significant influence on student understanding. The PBL learning model has a **t-value of 3.12** with a **significance of 0.003 < 0.05**, which means that there is a significant influence between the application of PBL on student understanding. Emotional intelligence has a **t-value of 2.98** with a **significance of 0.004 < 0.05**, indicating that the higher the student's emotional intelligence, the better their understanding of the subject matter. Reading skills have a **t-value of 3.65** with a **significance of 0.001 < 0.05**, indicating that reading skills contribute significantly to improving students' understanding of reading and concepts.

The results of the simultaneous test (F test) showed **an F value of 28.47** with a **significance of 0.000 < 0.05**, which means that the three independent variables together have a significant effect on student understanding. A coefficient of determination ($\mathbf{R^2}$) value of **0.732** indicated that **73.2% of the variation in student comprehension** could be explained by PBL learning models, emotional intelligence, and reading skills, while the remaining 26.8% were influenced by other factors outside of the study. Thus, the application of a problem-based learning model, combined with strengthening emotional aspects and reading skills, has proven to be effective in improving the understanding of elementary school students.

Table 2.
Results of Multiple Linear Regression Analysis

Independent Variables	Regression Coefficient (B)	t count	Sig.	Information
PBL Learning Model (X_1)	0,324	3,12	0,003	Significant
Emotional Intelligence (X_2)	0,287	2,98	0,004	Significant

Independent Variables	Regression Coefficient (B)	t count	Sig.	Information
Reading Skills (X_3)	0,351	3,65	0,001	Significant
Constant (a)	**12,584**	–	–	–
R	**0,856**	–	–	–
R^2	**0,732**	–	–	–
F count	**28,47**	–	**0,000**	Simultaneous significance

The regression coefficient value showed that every one unit increase in the PBL variable would increase students' comprehension by **0.324**, emotional intelligence by **0.287**, and reading skills by **0.351**, assuming the other variables were constant. Based on these results, reading skills are the most dominant variable in influencing student understanding compared to the other two variables. These results show that the application of problem-based learning not only improves cognitive abilities, but also supports students' emotional development and literacy simultaneously. Improving these three aspects is an important basis for creating a comprehensive and sustainable learning process at the elementary school level.

Discussion

The application of the Problem Based Learning (PBL) learning model has a positive impact on improving the understanding of elementary school students. Students are actively involved in the process of discovering concepts through problem-solving that is relevant to daily life. Student-centered learning activities make it easier for them to understand the material because they are directly involved in the thinking process (Ghani et al., 2021). The learning experience through PBL allows students to build knowledge independently and reflectively. This process strengthens students' cognitive ability to understand the relationships between concepts.

The results of the study show that PBL has a significant effect on student understanding. This finding strengthens Purnomo's (2024) view that PBL is able to stimulate critical, logical, and analytical thinking skills. This model requires students to identify problems, seek information, and find solutions based on the knowledge they have. These activities make learning more meaningful than traditional lecture methods. Students become active subjects in building understanding of the material.

The role of teachers in the implementation of PBL is very important as a facilitator of learning. Teachers must be able to design learning situations that challenge and motivate students to think creatively. Good learning management helps students direct their focus on solving the problems at hand. Proportionate guidance from teachers allows students to develop confidence in their opinions. PBL transforms the role of teachers from informants to guides of thinking processes (Yu & Colleagues, 2023).

Students' understanding increases as they learn to relate theories to real contexts. Problem-based learning encourages students to explore information that is relevant to everyday life. Chen (2024) emphasized that this activity spurs students' ability to connect academic concepts with

personal experiences. PBL teaches not only lesson content, but also high-level thinking skills. This ability is an important provision in solving social problems in the future.

The results of this study are in line with the findings of McKay (2024) who stated that PBL increases students' cognitive and affective engagement. Group activities that demand interaction and discussion train students in communicating ideas clearly. The collaborative process enriches students' perspectives on the problems they face. Group discussions also develop empathy and social skills through mutual respect for opinions. This kind of collaboration is very relevant to 21st-century learning approaches.

Emotional intelligence has been shown to play an important role in supporting student learning success. Students who are able to control emotions and understand the feelings of others are more adaptable to learning situations (Özdemir (2024). Good emotional management helps students maintain focus during the learning process. A stable emotional state encourages the emergence of internal motivation to achieve. Emotional intelligence also contributes to building a harmonious and conducive classroom atmosphere.

These findings are in line with the theory of Arias & Pino-Juste (2022) which asserts that emotional intelligence plays a role in self-control, empathy, and motivation. Students with high emotional intelligence are able to respond to failure as a learning experience, not an obstacle. This ability affects the way students face challenges in understanding the material. The emotional aspect helps them stay calm and focused on completing tasks. Emotional readiness is an important foundation in a productive learning process.

Problem-based learning requires mature emotional abilities as students are faced with complex learning situations. Each student is required to cooperate and respect the opinions of friends in the group. Social interaction during learning trains empathy as well as interpersonal communication skills. Developed emotional intelligence helps students manage conflicts that may arise in group discussions (Sharma et al., 2022). The learning process becomes more effective because it is supported by an atmosphere of mutual respect and mutual understanding.

Emotional intelligence is also associated with increased motivation to learn. Students who have high self-awareness are able to set learning strategies that suit their abilities (Ge, 2025). The drive to excel arises from the belief in one's own abilities. A positive psychological condition makes students more enthusiastic in participating in learning. High motivation has direct implications for increasing understanding of the concepts taught.

Reading skills are another variable that has a significant effect on student comprehension. Reading ability is not only limited to recognizing words, but also understanding the meaning and content of reading. Smith (2023) asserts that the process of understanding texts requires the ability to think critically to interpret and evaluate information. Students with high reading skills are able to grasp key ideas and relate them to previous knowledge. A good understanding of reading strengthens students' ability to learn other subject matter.

These findings support the opinion of Mosher & Kim (2023) that reading skills are the main key to knowledge mastery. Students who are used to reading with comprehension will have better analytical skills. Reading activities foster the habit of reflective thinking which is important in the learning process. Reading skills also improve reasoning power and oral and written communication skills. Good reading habits play a role in shaping the character of literate students.

PBL can be an effective medium to improve students' reading skills. Leasa (2023) emphasized that each stage of PBL encourages students to seek information from various reading sources. The process of searching for information requires students to read carefully and understand the content of the text in order to solve problems. Reading activities in the context of PBL are meaningful because they have a clear purpose. Students become more motivated to read because they feel that the results contribute directly to problem solving.

The improvement of reading skills through PBL also strengthens the metacognitive aspect of students. The ability to control one's own thought processes helps students understand the right strategies for reading and interpreting texts. Awareness of the thinking process makes students more effective in understanding information (Oliveira et al., 2023). A deep understanding of the text supports their success in mastering the concepts of learning. The relationship between metacognitive abilities and literacy is an important factor in academic success.

Students' increased understanding reflects the synergy between cognitive, affective, and psychomotor aspects. These three aspects are interconnected in forming optimal learning outcomes. PBL provides a learning experience that integrates the three domains in a balanced manner. Emotional intelligence and reading skills strengthen the process of critical and reflective thinking in the context of learning (Huang et al., 2025). The combination of the three results in an understanding that is not only memorized, but also mastery of meaningful concepts.

A determination coefficient value of 0.732 indicates that most of the variation in student understanding can be explained by all three independent variables. This figure illustrates that PBL, emotional intelligence, and reading skills have a big role in the learning process. The remaining 26.8% were influenced by other factors such as the learning environment, family support, and external motivation. These results reinforce the importance of a comprehensive learning approach in primary education. Efforts to improve student understanding are not enough only through teaching methods, but also to strengthen emotional aspects and literacy (Dixon, 2024).

The findings of this study have important implications for elementary school teachers in designing learning. Teachers need to integrate problem-based learning strategies with activities that develop students' emotional intelligence and literacy. This approach can be applied through discussion activities, case studies, and text-based reading projects. Such a learning plan fosters curiosity, cooperation, and deep understanding (Hudson & Colleagues, 2023). Learning is a means to develop students' potential as a whole.

Strengthening emotional intelligence in learning can be done through self-reflection and social activities in the classroom. Teachers can provide constructive feedback so that students are able to recognize and manage their emotions. Positive interactions between students help create a learning environment that supports emotional growth (Lu, 2025). Collaborative activities such as group discussions and team projects can strengthen students' social relationships. The development of emotional aspects makes the learning process more humane and meaningful.

Reading skills need to be continuously honed through cross-subject learning. Rahmah (2023) emphasized that every learning activity should involve reading activities that are challenging and interesting for students. Teachers can use reading materials that are relevant to students' lives so that the reading process feels contextual. Reading habits that are carried out continuously will form a literacy culture in schools. Strong literacy is an important foundation for improving the quality of national education.

CONCLUSION AND RECOMMENDATIONS

This study shows that the Problem Based Learning learning model, emotional intelligence, and reading skills have a significant effect on the understanding of elementary school students. The application of PBL is able to increase students' active involvement in discovering concepts, while emotional intelligence helps them manage their emotions and work together effectively in groups. Reading skills strengthen critical thinking skills and understanding of subject matter. These three variables simultaneously contribute 73.2% to the improvement of student understanding, which means that learning approaches that integrate cognitive, affective, and literacy aspects are able to create a meaningful and sustainable learning process at the basic education level.

REFERENCES

Arias, J., & Pino-Juste, M. R. (2022). Emotional intelligence and academic motivation in primary school students. *Psychology: Reflection and Criticism*, 35, Article 14.

Chen, J. (2024). Combining computational thinking with project/problem-based learning: a systematic review. *STEM Education Review*, 6(2), 101–119.

Dixon, M. (2024). Exploring teachers' practices for teaching reading comprehension in primary grades. *Reading Research Quarterly*.

Ge, W. L. (2025). Critical thinking and clinical skills by problem-based learning: a global review. *BMC Medical Education*, 25, Article 142.

Ghani, A. S. A., et al. (2021). Effective learning behavior in problem-based learning: a scoping review. *International Journal of Educational Research Open*, 2, 100034.

Huang, C., Zhong, Y., Li, Y., Wang, X., Han, Z., Zhang, D., & Liu, M. (2025). Enhancing student reading performance through a personalized two-tier problem-based learning approach with generative AI. *Humanities and Social Sciences Communications*, 12, Article 645.

Hudson, A. K., & Colleagues. (2023). Upper elementary teachers' knowledge of reading comprehension and classroom instruction. *Reading Research Quarterly*.

Leasa, M. (2023). Problem-based learning with reading questioning approach (RQA) to enhance critical thinking. *International Journal of Learning, Teaching and Educational Research*, 22(6), 1–18.

Lu, L. (2025). A meta-analysis of the effectiveness of Problem-Based Learning (PBL) on critical thinking. *European Journal of Educational Research*, 14(1), 1–18.

McKay, H. F. (2024). Problem-based learning: evidence and practice for primary classrooms. *Educational Practice Review*, 9(1), 45–66.

Mosher, D. M., & Kim, J. S. (2023). Improving elementary students' reading comprehension through content-rich literacy curriculum: The effect of structured read-aloud supplements. *EdWorkingPaper: 23-847*.

Nicholus, G. (2023). The role of Problem-Based Learning (PBL) approach in teaching and learning: a systematic review. *Education Research International*, 2023, Article ID 553210.

Oliveira, A. M., Santos, J. L. F., & Capellini, S. A. (2023). Reading comprehension performance of elementary and senior high school students. *Frontiers in Education*, 8:1086040.

Özdemir Cihan, M. (2024). Emotional intelligence training for pre-service primary teachers: program design and evaluation. *Frontiers in Psychology*, 15, Article 1326082.

Purnomo, Y. W. (2024). A problem-based learning module for mathematics in elementary schools: development and implementation. *Infinity Journal*, 13(2), 200–215.

Rahmah, I. F. (2023). Problem-Based Learning models to improve numeracy and literacy in elementary classrooms. *Journal of Elementary Teaching & Technology Innovations*, 7(1), 22–36.

Sharma, S., Saragih, I. D., Tarihoran, D. E. T. A., & Chou, F. H. (2022). Outcomes of problem-based learning in nurse education: a systematic review and meta-analysis. *Nurse Education Today*, 120, 105631.

Smith, R. (2023). Elementary teachers' perspectives on reading comprehension development. *Language, Speech, and Hearing Services in Schools*.

Wang, C. C. (2021). The process of implementing problem-based learning in pre-service teacher education: a case study. *Cogent Education*, 8(1), section 1996870.

Yu, L., & Colleagues. (2023). Critical thinking-oriented adaptations of problem-based learning: a systematic review. *Frontiers in Education*, 8:1139987.