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THE PROBLEM-BASED LEARNING (PBL) MODEL TO IMPROVE ENGLISH VOCABULARY MASTERY IN ELEMENTARY SCHOOL

Farisatma[1]*, Nur Jannah[2], Anisa Rizkayati[3], Krisnawati[4]

[1,2,3,4]Fakultas Keguruan dan Ilmu Pendidikan, University Muhammadiyah Buton, Indonesia

Email correspondence: farisatma.umbuton@gmail.com

ABSTRACT

This study was motivated by the low level of English vocabulary mastery among elementary school students, which has an impact on their communication skills. The learning process, which is still teacher-centered and focused on memorization, makes students less active and limits their ability to use vocabulary in meaningful contexts. The study aims to improve students' English vocabulary mastery through the implementation of the Problem-Based Learning (PBL) model in elementary school classrooms. This research employed Classroom Action Research conducted in several cycles, each consisting of planning, acting, observing, and reflecting stages. The participants were a class of elementary school students. Data were collected through observation, vocabulary tests, and documentation. Quantitative data were analyzed by examining the improvement of mean scores and the level of learning mastery, while qualitative data were analyzed based on students' participation and learning activities during the implementation of the PBL model. The findings revealed a consistent improvement in students' vocabulary mastery from the initial condition to the final cycle. Learning mastery increased significantly, accompanied by greater student participation and engagement in the learning process. Students demonstrated higher confidence in using new vocabulary and were more actively involved in group discussions and problem-solving activities. The implementation of the PBL model proved to be effective in enhancing English vocabulary mastery among elementary school students.

Keywords: *Problem-Based Learning, English Vocabulary Mastery, Classroom Action Research*

1. Introduction

The Problem-Based Learning (PBL) model is an instructional approach that places problems as the starting point of the learning process (Erlina et al., 2023). Through this model, students are actively involved in identifying, analyzing, and finding solutions to contextual problems that are closely related to their daily lives (Kusumawati, 2024). The implementation of PBL in teaching English at the elementary school level provides students with opportunities to use vocabulary directly in real-life situations (Usman, 2020). As a result, learning does not merely focus on memorization, but emphasizes meaningful understanding and practical use of words in appropriate contexts.

The use of the Problem-Based Learning (PBL) model to improve English vocabulary mastery in elementary school can help students develop critical thinking, communication, and collaboration skills in a more structured way (Ilma & Wulandari, 2023). This model requires students to be actively involved in identifying problems related to their daily lives and discussing possible solutions using English in contextual situations (Rachmawati & Lestari, 2025). Such activities encourage students not only to memorize vocabulary but also to understand its meaning and appropriate usage in real-life contexts (Pratiwi et al., 2025). The learning process

becomes more meaningful because students take an active role as participants who construct their own knowledge rather than merely receiving information from the teacher (Rosmilasari & Adoe, 2021).

Students learn through group discussions, exploration of various learning resources, observation of their surrounding environment, and presentations of problem-solving results that encourage them to use new vocabulary both orally and in written form (Ramadhania & Adnan, 2022). Interaction among group members provides opportunities for students to exchange ideas and enrich their vocabulary. The teacher acts as a facilitator who guides students' thinking processes and provides feedback on the appropriate use of vocabulary (Ahmad et al., 2023). This process creates a more engaging, interactive, and collaborative learning atmosphere. Students' learning motivation increases because they feel directly involved in the learning process (Dwiyamtini, 2023). Vocabulary mastery becomes more optimal as words are learned through real experiences and repeated practice (Fathoni & Muhtadin, 2024). Students' retention of vocabulary also tends to last longer compared to conventional learning approaches.

Previous studies have shown that the implementation of Problem-Based Learning (PBL) is effective in improving students' learning outcomes and higher-order thinking skills. Research conducted by (Bintarti et al., 2024) emphasizes that PBL promotes active student engagement through meaningful inquiry and problem-solving processes. Similar findings were reported by (Maulana et al., 2024), who stated that PBL helps students develop critical thinking, collaboration, and self-directed learning skills. In addition, (Hardono, 2020) found that problem-based instruction strengthens conceptual understanding because students connect learning materials with real-life contexts. In the context of elementary education, (Solehudin & Rochmiyati, 2023) explained that PBL can enhance students' learning motivation and active participation as it centers on direct experience. In the field of English language learning, (Salsabila et al., 2022) highlighted the importance of using vocabulary in authentic contexts to ensure stronger retention. (Jesika et al., 2024) also demonstrated that task- and problem-based learning strategies effectively enrich students' vocabulary acquisition. Furthermore, (Mahesti et al., 2025) argued that English instruction at the elementary level becomes more effective when students are engaged in meaningful communicative activities. Based on these findings, it can be concluded that integrating the PBL model into English instruction has significant potential to improve vocabulary mastery among elementary school students.

The gap in English vocabulary instruction at the elementary school level is still evident between curriculum expectations that emphasize communicative learning and classroom practices that remain focused on memorization (Zakiyah et al., 2025). The learning process is often teacher-centered, relying on lectures and lists of words without clear contextual usage (Suhandary et al., 2024). This condition causes students to have limited understanding of word meanings and difficulties in using vocabulary in simple sentences (Muhsinin et al., 2024). Another emerging issue is the low level of active student participation, resulting in limited English interaction in the classroom (Lumbantobing et al., 2025). As a consequence, students'

vocabulary mastery tends to be low and easily forgotten because it is not practiced consistently in meaningful situations (Mutmainnah, 2024).

The challenges faced by teachers in addressing these issues include limited instructional time, differences in students' abilities, and a lack of innovation in implementing contextual learning models (Leasa et al., 2024). The implementation of a model such as Problem-Based Learning requires careful planning, teachers' readiness to design problems that are appropriate to students' developmental levels, and effective classroom management (Rahmawati et al., 2025). In addition, not all students are accustomed to collaborative and active learning, so a gradual adaptation process is necessary (Marlina & Rahmah, 2023). If these challenges are not properly addressed, the gap in vocabulary mastery will continue and may negatively affect students' English communication skills at higher levels of education (Putranto et al., 2023).

Based on the results of the preliminary observation at Public Elementary School 2 Nganganaumala, the English learning process, particularly in vocabulary mastery, still shows several challenges. Classroom activities are largely dominated by lecture-based instruction and the provision of word lists for memorization, which limits students' opportunities to use vocabulary in meaningful communicative contexts. Students' participation in asking questions, engaging in discussions, and practicing new words remains relatively low. Some students also demonstrate a lack of confidence when asked to pronounce words or construct simple sentences in English. Differences in students' abilities are clearly visible, as some students are able to follow the lessons effectively, while others struggle to understand word meanings and appropriate usage. This situation indicates that the current instructional approach has not fully supported all learners in developing vocabulary mastery. Therefore, there is a strong need to implement a more active, contextual, and collaborative learning model that can engage students more effectively and enhance their English vocabulary acquisition in a meaningful way.

A possible solution to address the problem of English vocabulary mastery in elementary school is the implementation of the Problem-Based Learning (PBL) model in the teaching process (Sajidan et al., 2022). This model provides students with opportunities to learn through contextual problems that are closely related to their daily lives, so vocabulary is not only learned theoretically but also applied directly in meaningful situations (Husna et al., 2024). Through group discussions, information exploration, and presentations of problem-solving results, students are encouraged to actively use new vocabulary in both spoken and written communication. PBL also enables teachers to act as facilitators who guide students and provide continuous feedback, making the learning process more interactive and student-centered.

This study is important to conduct because it offers an innovative approach to improving English vocabulary mastery at the elementary school level, particularly in learning contexts that are still conventional in nature. The study is relevant to the need for enhancing the quality of English instruction from an early stage, considering that vocabulary mastery serves as a fundamental component of language skills. It also provides novelty by specifically applying the Problem-Based Learning model to vocabulary instruction in elementary schools, an area that

remains limited in local research contexts. The findings are expected to contribute practical benefits for teachers in selecting more effective instructional strategies, as well as to serve as an academic reference for the development of more contextual and meaningful English learning models.

2. Research Methods

The type of research used in this study is Classroom Action Research. Classroom Action Research is conducted by teachers in their own classrooms with the aim of improving and enhancing the quality of the learning process and outcomes in a continuous manner (Putra et al., 2023). This research is reflective and collaborative in nature, as it involves planning the action, implementing the action, observing the process, and reflecting on the results obtained (Zaenuri et al., 2020). Through Classroom Action Research, the problem of low English vocabulary mastery can be directly identified in the classroom and addressed through corrective actions in the form of implementing the Problem-Based Learning model (Azizah et al., 2023). The results of each action are analyzed to determine the level of success and to serve as the basis for improvement in the subsequent cycle.

The research design follows the Classroom Action Research cycle model, which consists of four main stages: planning, acting, observing, and reflecting. The study was carried out in several cycles until the predetermined indicators of success were achieved. During the planning stage, the researcher prepared PBL-based lesson plans, observation instruments, and assessment tools to measure students' vocabulary mastery. The acting stage involved implementing the Problem-Based Learning model in English instruction. Observation was conducted to monitor both teacher and student activities throughout the learning process. The reflection stage aimed to evaluate the results of the action and formulate improvements for the next cycle in order to achieve significant enhancement in students' vocabulary mastery.

The subjects of this study were all students in one class consisting of twenty-one learners at SD Negeri 2 Nganganaumala. The selection of participants was carried out using total sampling, as Classroom Action Research focuses on improving the learning process within a particular class. The students had diverse academic abilities, representing the actual condition of English learning in the school. All students were actively involved in the implementation of the Problem-Based Learning model to improve their English vocabulary mastery. The variation in students' levels of understanding and participation was taken into consideration during the planning of the action, so that the instructional strategies were designed to accommodate different learning needs. Research data were obtained through observations of students' activities and vocabulary tests administered in each cycle to measure overall improvement in learning outcomes.

Data collection in this study was carried out through several techniques, namely observation, tests, and documentation. Observation was used to obtain data on teacher and student activities during the implementation of the Problem-Based Learning model in English vocabulary instruction (Sihombing, 2025). The observation sheets were systematically designed to record students' participation levels, activeness in group discussions, ability to use new vocabulary, and the implementation of PBL procedures by the teacher. Observations were conducted in

each cycle to monitor the development of the learning process and to serve as the basis for reflection and improvement in the subsequent cycle. Tests were administered to measure students' vocabulary mastery before and after the implementation of the action in each cycle. The test formats were adjusted to the material being taught, such as matching words with pictures, completing simple sentences, or constructing sentences using new vocabulary. The test results were analyzed to determine improvements in the class mean score and the percentage of learning mastery. In addition, documentation in the form of photographs of learning activities, attendance lists, and students' work records was used as supporting data to strengthen the research findings and to provide a clear picture of the implementation of the action in the classroom.

Data analysis in this study was conducted using both quantitative and qualitative approaches in accordance with the characteristics of Classroom Action Research. Quantitative data were obtained from the results of English vocabulary mastery tests administered in each cycle. Students' scores were analyzed by calculating the class mean and the percentage of learning mastery. The class mean was calculated by summing all students' scores and dividing the total by the number of students, which consisted of twenty-one learners (Lutpiah et al., 2024). The percentage of learning mastery was determined by dividing the number of students who achieved the Minimum Mastery Criteria by the total number of students and then multiplying the result by one hundred percent. These analyses were used to compare improvements in learning outcomes from the pre-cycle to the subsequent cycles in order to determine the effectiveness of the Problem-Based Learning model. Qualitative data were obtained from observations of teacher and student activities during the learning process. The data were analyzed through the stages of data reduction, data display, and conclusion drawing. Data reduction was carried out by selecting and focusing on information relevant to the research objectives, particularly related to students' participation, collaboration, and use of vocabulary. The data were then presented in the form of tables or narrative descriptions to facilitate understanding. The final stage involved drawing conclusions by reflecting on the results of observations and tests in each cycle to determine the success of the action and to formulate necessary improvements for the following cycle.

3. Results and Discussion

3.1 Results

The results of the study indicate that the implementation of the Problem-Based Learning model had a positive impact on improving students' English vocabulary mastery. The improvement was reflected in the increase in the class mean score and the percentage of learning mastery from the pre-cycle stage to the final cycle. This condition demonstrates that learning outcomes improved gradually and systematically through each action implemented. The reflection process in every cycle also contributed to refining the instructional strategies, leading to more optimal results. Quantitative data obtained from the vocabulary tests show that the majority of students were able to achieve the Minimum Mastery Criteria after the consistent implementation of the Problem-Based Learning model.

Positive changes were also evident in the learning process. Students' activity and participation increased, as reflected in their confidence in using new vocabulary during discussions, their ability to collaborate effectively in groups, and their skill in constructing simple sentences with greater self-assurance. Interaction between students and the teacher became more dynamic because the learning process was centered on solving contextual problems. The classroom atmosphere became more lively, communicative, and collaborative, which further enhanced students' learning motivation. These findings reinforce that the Problem-Based Learning model is effectively implemented in elementary school English instruction, particularly in promoting meaningful and sustainable vocabulary mastery.

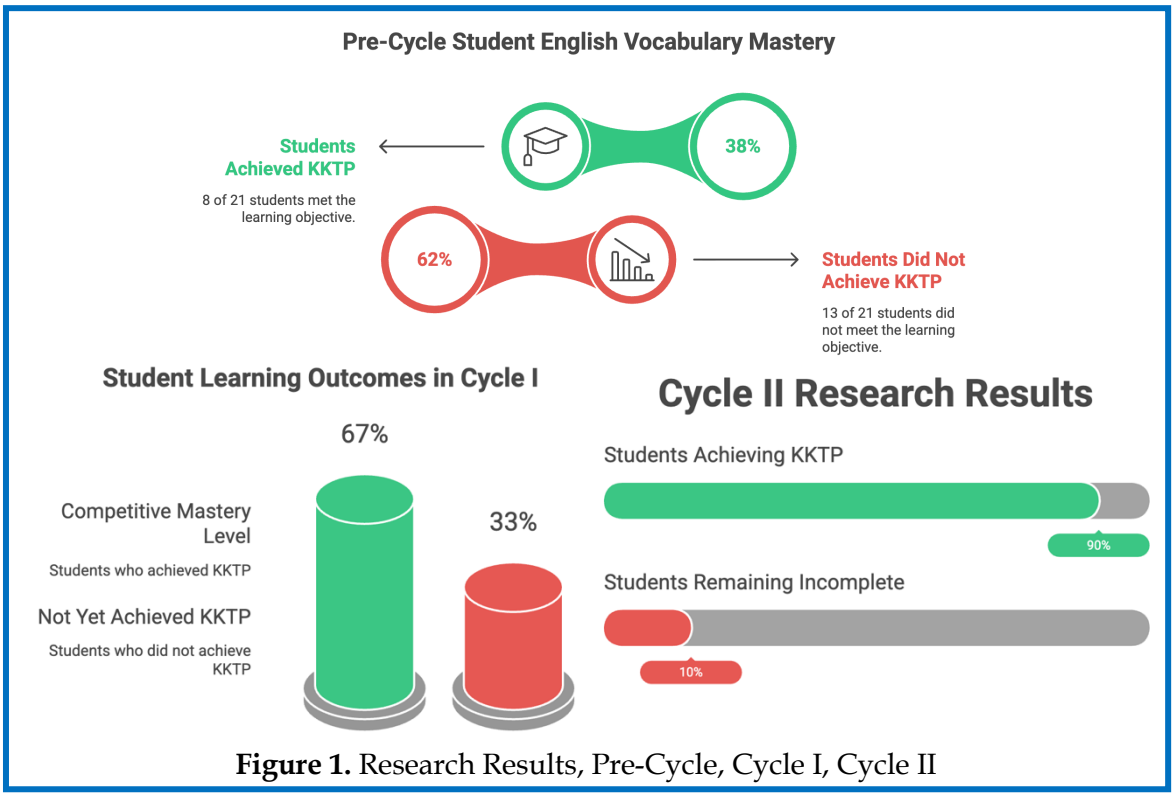

Figure 1. Research Results, Pre-Cycle, Cycle I, Cycle II

The figure presents the research findings on students' English vocabulary mastery at the Pre-Cycle, Cycle I, and Cycle II stages. In the Pre-Cycle stage, out of twenty-one students, only eight students, or thirty-eight percent, achieved the Minimum Mastery Criteria, while thirteen students, or sixty-two percent, had not yet reached mastery. These data indicate that before the implementation of the action, the majority of students still experienced difficulties in understanding and using English vocabulary appropriately. In Cycle I, there was an improvement in learning outcomes after the implementation of the Problem-Based Learning model. The percentage of students who achieved the Minimum Mastery Criteria increased to sixty-seven percent, while thirty-three percent of students were still not yet proficient. This improvement demonstrates the positive impact of the action, although the results were not yet optimal. Several students began to show progress in using vocabulary and participating in group discussions; however, further refinement of instructional strategies was still needed for the following cycle.

More significant results were observed in Cycle II. The percentage of students who achieved the Minimum Mastery Criteria increased to ninety percent, while the

proportion of students who had not yet achieved mastery decreased to ten percent. The horizontal bar chart in the figure shows a clear dominance of the green color as an indicator of mastery compared to the red color. This illustrates that the majority of students were able to master English vocabulary in accordance with the predetermined learning targets. Overall, the figure demonstrates a consistent improvement in learning outcomes from the Pre-Cycle to Cycle II. The upward trend in the percentage of learning mastery indicates that the implementation of the Problem-Based Learning model was effective in enhancing students' English vocabulary mastery. In addition to the increase in scores, positive changes are also reflected in the significant reduction in the number of students who did not achieve the Minimum Mastery Criteria. This visual data strengthens the conclusion that the actions implemented in the study successfully met the established indicators of success.

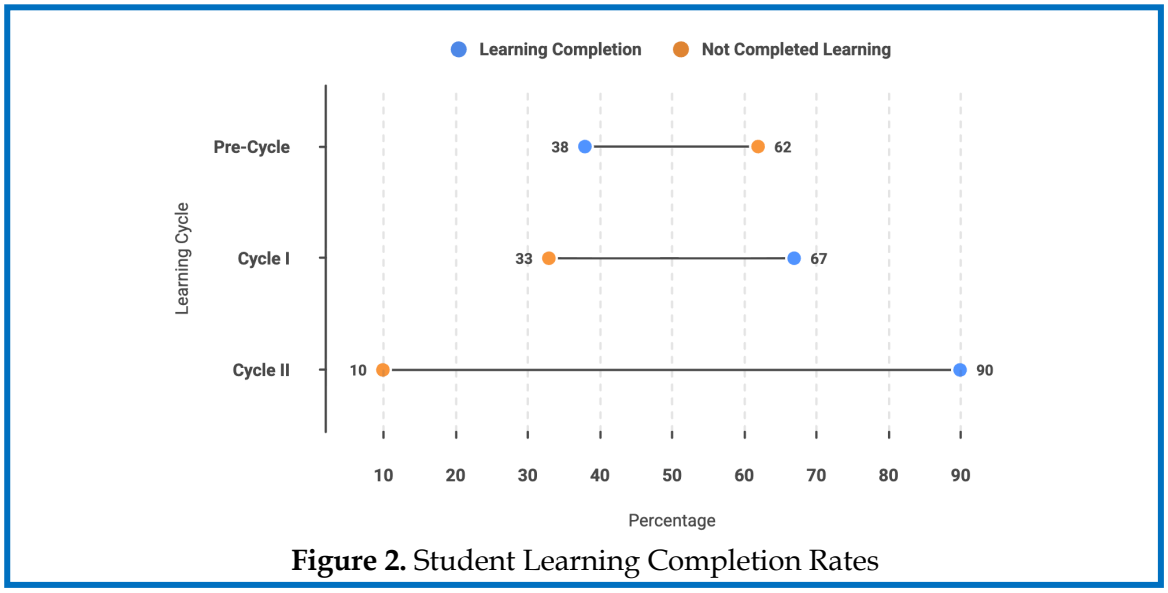

Figure 2. Student Learning Completion Rates

The comparison of results in each cycle shows a gradual and significant improvement in students' English vocabulary mastery. In the Pre-Cycle stage, the percentage of learning mastery was thirty-eight percent, while sixty-two percent of students had not yet achieved the Minimum Mastery Criteria, reflecting low learning outcomes before the implementation of the action. After the application of the Problem-Based Learning model in Cycle I, the percentage of mastery increased to sixty-seven percent, indicating a substantial improvement from the initial condition and demonstrating the positive impact of the implemented action. A more optimal improvement was observed in Cycle II, where the percentage of learning mastery reached ninety percent and only ten percent of students remained below the Minimum Mastery Criteria. Compared to Cycle I, this stage showed a further notable increase, and when compared to the Pre-Cycle condition, the overall improvement was even more significant. These data indicate that each cycle demonstrated a consistent upward trend, and the refinement of instructional strategies at every stage successfully enhanced students' learning outcomes in a meaningful way.

3.2 Discussion

The pre-cycle stage indicated that students' English vocabulary mastery was still relatively low, with a learning mastery percentage of thirty-eight percent, while sixty-two percent of students had not yet met the Minimum Mastery Criteria. This condition suggests that the previous learning process had not effectively encouraged students to understand and use vocabulary optimally. Instruction tended to be teacher-centered, relying on lecture methods and memorization, which limited students' opportunities to practice vocabulary in meaningful contexts. As a result, students showed low active participation and lacked confidence in pronouncing words or constructing simple sentences in English. The low learning outcomes were also influenced by the limited variation in instructional models that actively and collaboratively engaged students. Interaction among students was not fully developed, and the use of new vocabulary had not been integrated into discussion or problem-solving activities. Students were more likely to wait for the teacher's directions rather than explore their language abilities independently. This situation highlights the need for instructional innovation that can increase student engagement and provide contextual learning experiences.

These findings are consistent with the view of (Adriani & Arnawa, 2020), who stated that vocabulary mastery is difficult to develop if students merely memorize words without using them in real contexts. The results also support the perspective of (Sari & Ningsih, 2023), who emphasized that non-problem-based instruction tends to make students passive and less cognitively engaged. Therefore, the implementation of a more active and contextual learning model becomes an urgent necessity to significantly improve students' vocabulary mastery.

Cycle I demonstrated an improvement in learning outcomes after the implementation of the Problem-Based Learning model. The percentage of learning mastery increased to sixty-seven percent compared to the pre-cycle condition, which was only thirty-eight percent. The class mean score also improved, indicating progress in students' English vocabulary mastery. The learning process became more interactive, as students were involved in group discussions, attempted to use new vocabulary in simple contexts, and began to show confidence in expressing their opinions. These changes indicate that the implementation of the Problem-Based Learning model created a more active learning environment compared to the previous instructional approach. However, the results in Cycle I had not yet fully achieved the predetermined indicators of success. Some students still experienced difficulties in constructing sentences accurately and using vocabulary appropriately in context. A number of students remained passive during group discussions and required more intensive guidance from the teacher. Reflection on the implementation of Cycle I highlighted the need for improved time management, more varied examples of vocabulary usage, and stronger motivational support to enhance students' confidence in communicating in English.

The findings of Cycle I are consistent with the study of (Ruhana, 2023), which states that the early stages of PBL implementation often show increased participation and conceptual understanding, although adjustments in instructional strategies are still necessary. The research conducted by (Zhang, 2024) also emphasizes that problem-based instruction gradually enhances student motivation

and engagement through collaborative processes. These findings reinforce that the improvement observed in Cycle I represents a positive initial step toward more optimal learning outcomes in the subsequent cycle.

Cycle II showed a more significant improvement in learning outcomes compared to Cycle I. The percentage of learning mastery reached ninety percent, with the majority of students meeting the Minimum Mastery Criteria. The class mean score also increased substantially, indicating that students' English vocabulary mastery had improved considerably. The learning activities became more effective as students were already familiar with the steps of the Problem-Based Learning model. Group discussions were more focused, students were more active in asking and answering questions, and they were able to use new vocabulary in simple sentences more accurately and confidently. Improvements in instructional strategies based on the reflection from Cycle I had a positive impact on both the learning process and outcomes in Cycle II. The teacher provided clearer guidance during the problem-solving stages and offered more varied examples of vocabulary usage. Interaction among students increased, and collaboration within groups became stronger. Students' confidence in speaking English also developed, creating a more communicative and collaborative classroom atmosphere. This condition indicates that the continuous implementation of the Problem-Based Learning model can enhance student engagement while strengthening meaningful vocabulary understanding.

The findings in Cycle II are consistent with the view of (Wijayanti et al., 2025), who stated that problem-based instruction strengthens conceptual understanding when students actively connect learning materials with real-life situations. The results also support the perspective of (Jeldu et al., 2024), who emphasized that using language in task-based or real problem contexts can improve vocabulary mastery more effectively and sustainably. The alignment of these findings reinforces that the Problem-Based Learning model is effective in improving English vocabulary mastery at the elementary school level.

4. Conclusion

The conclusion of this study indicates that the implementation of the Problem-Based Learning model is effective in improving elementary school students' English vocabulary mastery. The improvement was observed gradually from the pre-cycle stage through Cycle I and Cycle II, both in terms of the class mean score and the percentage of learning mastery. The mastery level, which was initially categorized as low, increased significantly until it met the predetermined indicators of success. These results demonstrate that problem-based instruction can systematically enhance both the learning process and learning outcomes. The student-centered learning process, carried out through group discussions, problem-solving activities, and the use of vocabulary in real contexts, contributed to increased participation, confidence, and communication skills among students. The classroom atmosphere became more active, collaborative, and interactive, which further strengthened students' learning motivation. The implementation of the Problem-Based Learning model not only improved students' academic performance but also supported the development of their attitudes and language skills. Therefore, this model can be

considered an effective alternative instructional strategy for improving English vocabulary mastery in elementary schools.

Reference

Adriani, M., & Arnawa, I. M. (2020). Development of Problem-Based Mathematical Learning Device on Problem Based Learning (PBL) Models by Using GeoGebra Aids to Improve the Problem Solving Skill of the Students in VIII Class of Junior High School (Preliminary Research). In *Proceedings of the International Conference on Biology, Sciences and Education (ICoBioSE 2019)*. Atlantis Press. https://doi.org/10.2991/absr.k.200807.074

Ahmad, S., Aryanti, D., & Kurniawan, R. (2023). Model Pembelajaran Problem Based Learning (PBL) Pada Pembelajaran Tematik Di Sekolah Dasar. In *ELEMENTARY SCHOOL JOURNAL PGSD FIP UNIMED* (Vol. 13, Issue 2, pp. 213–225). State University of Medan. https://doi.org/10.24114/esjpgsd.v13i2.46491

Azizah, H. N., Oktoviana, L. T., & Harini, S. (2023). The Implementation of Problem-based Learning (PBL) to Improve Contextual Mathematics Problem-solving Ability in Students XI-B3 Senior High School 3 Malang. In *KnE Social Sciences*. Knowledge E DMCC. https://doi.org/10.18502/kss.v8i10.13457

Bintarti, Linda, R., & Rasmiwetti. (2024). Development of Interactive Multimedia Based on Android Integrated Problem Based Learning (PBL) to Improve Students's Mastery of Concepts. In *Orbital: Jurnal Pendidikan Kimia* (Vol. 8, Issue 1, pp. 79–91). State Islamic University of Raden Fatah Palembang. https://doi.org/10.19109/ojpk.v8i1.22057

Dwiyamtini, M. R. (2023). Application of Problem Based Learning (PBL) to Improve English Speaking Skills. In *Applied Research on English Education (AREE)* (Vol. 1, Issue 2, p. 80). LPPM Universitas Muhammadiyah Semarang. https://doi.org/10.26714/aree.1.2.2023.80-91

Erlina, E., Lokaria, E., & Purwasih, L. A. (2023). Penerapan Model Pembelajaran Problem Based Learning (PBL) Berbantuan Media Puzzle. In *Journal of Elementary School (JOES)* (Vol. 6, Issue 2, pp. 260–271). IPM2KPE. https://doi.org/10.31539/joes.v6i2.6663

Fathoni, A., & Muhtadin, K. (2024). Implementation of Problem Based Learning (PBL) Model to Improve SMP Students' Concepts Mastery in Additive Materials and its Correlation with Surat Al Baqarah Verse 168. In *Pengabdian: Jurnal Abdimas* (Vol. 2, Issue 1, pp. 61–70). Yayasan Pendidikan Islam Daarut Thufulah. https://doi.org/10.55849/abdimas.v2i1.741

Hardono, F. P. (2020). Application Of The Problem Based Learning Model To Improve Communicating Skill In Elementary School Students. In *Kalam Cendekia: Jurnal Ilmiah Kependidikan* (Vol. 9, Issue 1). Universitas Sebelas Maret. https://doi.org/10.20961/jkc.v9i1.53796

Husna, N., Kartinah, & Munfarichah, S. (2024). Pengaruh model problem based learning (PBL) berbantuan media interaktif terhadap penguasaan konsep siswa kelas V pada materi siklus air. In *COLLASE (Creative of Learning Students Elementary Education)* (Vol. 7, Issue 2, pp. 249–256). IKIP Siliwangi Bandung. https://doi.org/10.22460/collase.v7i2.22506

Ilma, M., & Wulandari, F. E. (2023). Problem Based Learning (PBL) Model on Students' Environmental Literacy Ability in Elementary School Natural Science Lessons. In *Indonesian Journal of Education Methods Development* (Vol. 18, Issue 2). Universitas Muhammadiyah Sidoarjo. https://doi.org/10.21070/ijemd.v22i.741

Jeldu, F. A., Lucha, Z. T., & Feyisa, J. J. (2024). Effects of Applying Problem Based Learning (PBL) Strategy Use on Students' Oral Vocabulary as One Aspect of Speaking Performance. In *English Language, Literature & Culture* (Vol. 9, Issue 1, pp. 16–28). Science Publishing Group. https://doi.org/10.11648/j.ellc.20240901.13

Jesika, V., Fitriyana, N., & Abadi, C. (2024). Penerapan Model Problem Based Learning (PBL) terhadap Hasil Belajar Matematika Siswa Kelas V SDN 166 Rejang Lebong. In *Journal of Elementary School (JOES)* (Vol. 7, Issue 2, pp. 22–29). IPM2KPE. https://doi.org/10.31539/joes.v7i2.12032

Kusumawati, R. I. (2024). Model Problem-Based Learning (PBL) dengan Strategi Pembelajaran Berdiferensiasi untuk Meningkatkan Motivasi Belajar dan Hasil Belajar Kognitif. In *J-SES : Journal of Science, Education and Studies* (Vol. 3, Issue 1). Universitas Muhammadiyah Surabaya. https://doi.org/10.30651/jses.v3i1.22124

Leasa, M., Pelamonia, J., Talakua, M., & Batlolona, R. (2024). Emotional Literacy of Elementary School Teachers: A Study on Science Learning with Problem-Based Learning (PBL) and Homogeinity Psycho Cognition (HPC) Program. In *KnE Social Sciences*. Knowledge E DMCC. https://doi.org/10.18502/kss.v9i31.17605

Lumbantobing, S. G., Jampel, I. N., & Simamora, A. H. (2025). Learning Video Based on a Contextual Approach to Improve Metacognitive Skills in Grade III Elementary School English. In *Jurnal Media dan Teknologi Pendidikan* (Vol. 5, Issue 2, pp. 221–232). Universitas Pendidikan Ganesha. https://doi.org/10.23887/jmt.v5i2.100530

Lutpiah, S., Pratama, D. F., & Wulandari, M. A. (2024). Penggunaan model pembelajaran problem based learning (PBL) untuk meningkatkan pemahaman konsep IPA pada siswa kelas V SD. In *COLLASE (Creative of Learning Students Elementary Education)* (Vol. 7, Issue 6, pp. 1111–1116). IKIP Siliwangi Bandung. https://doi.org/10.22460/collase.v7i6.19598

Mahesti, A., Danish, M., & Hoa, L. T. (2025). THE IMPLEMENTATION OF THE PROBLEM BASED LEARNING MODEL TO IMPROVE STUDENTS' PROBLEM-SOLVING SKILLS IN ENGLISH LEARNING AT JUNIOR HIGH SCHOOL. In *ELTE Journal (English Language Teaching and Education)* (Vol. 13, Issue 2, pp. 50–57). Universitas PGRI Palembang. https://doi.org/10.31851/eltejournal.v13i02.20287

Marlina, & Rahmah, S. (2023). Application of the Problem Based Learning Model in Mathematics Content to Improve the Learning Outcomes of Class IV Elementary School Students. In *Asian Journal of Applied Education (AJAE)* (Vol. 2, Issue 2, pp. 257–268). PT Formosa Cendekia Global. https://doi.org/10.55927/ajae.v2i2.3761

Maulana, L. M. S., Kosim, K., Zuhdi, M., & Wahyudi, W. (2024). Development of Student Worksheets Based on Problem Based Learning (PBL) Assisted by PhET Simulations to Improve Mastery of High School Physics Concepts. In *AMPLITUDO : Journal of Science and Technology Innovation* (Vol. 3, Issue 2, pp. 104–110). Balai Publikasi Indonesia. https://doi.org/10.56566/amplitudo.v3i2.196

Muhsinin, Rahman, A., Hassan, A. J., & Manu, S. M. T. (2024). The Use of Picture-Based English Materials to Improve Students' Vocabulary Mastery for States Elementary Schools. In *Journal of Language and Literature Studies* (Vol. 4, Issue 1, pp. 135–149). Lembaga Penelitian dan Pemberdayaan Masyarakat - LITPAM. https://doi.org/10.36312/jolls.v4i1.1795

Mutmainnah, M. (2024). The Influence Of Application Of Problem Based Learning(PBL)Learning Model On The Ability To Think Student Criticism In Class V Thematic Lessons UPT SPF SD Inpres Rappokalling 1 Tallo District,Makassar City. In

International Journal of Elementary School Teacher (Vol. 4, Issue 1). Universitas Negeri Makassar. https://doi.org/10.70713/ijest.v4i1.63043

Pratiwi, Y., Maulina, M., & Nasrullah, R. (2025). Effectiveness of Using Game Techniques to Improve English Vocabulary Mastery in Elementary School: A Systematic Literature Review. In *Jambura Journal of English Teaching and Literature* (Vol. 6, Issue 2, pp. 87–101). Universitas Negeri Gorontalo. https://doi.org/10.37905/jetl.v6i2.34711

Putra, D. A., Faradita, M. N., & Faradillah, D. M. (2023). Problem-Based Learning (PBL) Instructional Materials for Enhancing Mathematics Learning Outcomes of Elementary School Students. In *Education and Human Development Journal* (Vol. 8, Issue 2, pp. 1–9). Universitas Nahdlatul Ulama Surabaya. https://doi.org/10.33086/ehdj.v8i2.5018

Putranto, A. W., Umam, M., & Ismail, A. D. (2023). Application of PBL Model to Improve Mathematics Learning Outcomes of Grade II Elementary School Students. In *Journal of Management Economic and Financial* (Vol. 1, Issue 2, pp. 1–5). Politeknik Sci. https://doi.org/10.46799/jmef.v1i2.20

Rachmawati, A. M., & Lestari, B. A. (2025). AR-Based Flashcards to Improve Primary School Students' English Vocabulary Mastery: Insights from Vocabulary Learning Research. In *Journal of Language and Literature Studies* (Vol. 5, Issue 4, pp. 1148–1159). Lembaga Penelitian dan Pemberdayaan Masyarakat - LITPAM. https://doi.org/10.36312/rxsmg853

Rahmawati, L., Setiaji, A., & Setyorini, A. (2025). The Use Of Simon Says Game To Improve Students' Vocabulary Mastery In Learning English At Sma 1 Juwana. In *Journal of English Language Learning* (Vol. 9, Issue 2, pp. 254–263). Universitas Majalengka. https://doi.org/10.31949/jell.v9i2.14976

Ramadhania, S., & Adnan, H. (2022). Crossword Puzzle Learning Media to Improve Indonesian Vocabulary Mastery for Grade 2 Elementary School Students. In *Journal of Innovation and Research in Primary Education* (Vol. 1, Issue 2, pp. 50–55). Paguyuban Panalungtik Sunda. https://doi.org/10.56916/jirpe.v1i2.177

Ramadhina, R., Yusnan, M., Hasrifina, H., Aulia, N., & Risfanda, R. (2025). Strategi Pembelajaran dalam Pengelolaan Kelas sebagai Solusi Guru untuk Meningkatkan Minat Belajar Siswa di Sekolah Dasar. *EDUKATIF: Jurnal Penelitian dan Pembelajaran*, *1*(02), 55-61.

Rosmilasari, D. M. A. R., & Adoe, D. P. (2021). Design and Implementation of Online Problem Based Learning (PBL) Assisted by Innovative Media to Improve Elementary School Student Learning Outcomes. In *Journal of Education Technology* (Vol. 4, Issue 4, p. 456). Universitas Pendidikan Ganesha. https://doi.org/10.23887/jet.v5i1.29929

Ruhana, R. (2023). Improving English Vocabulary Through Picture Games AT the Elementary School. In *Asshika: Journal of English Language Teaching and Learning* (Vol. 1, Issue 1, pp. 56–65). Saniya Institute. https://doi.org/10.65190/637731

Sajidan, S., Suranto, S., Atmojo, I. R. W., Saputri, D. Y., & Etviana, R. (2022). Problem-Based Learning-Collaboration (PBL-C) Model in Elementary School Science Learning in the Industrial Revolution Era 4.0 and Indonesia Society 5.0. In *Jurnal Pendidikan IPA Indonesia* (Vol. 11, Issue 3, pp. 477–488). Universitas Negeri Semarang. https://doi.org/10.15294/jpii.v11i3.30631

Salsabila, R., Saputra, E. R., & Indihadi, D. (2022). Application Of Word Square and Scramble Sentence Learning Model to Improve English Vocabulary for Elementary School Students. In *LITE: Jurnal Bahasa, Sastra, dan Budaya* (Vol. 18, Issue 2, pp. 74–82). Universitas Dian Nuswantoro. https://doi.org/10.33633/lite.v18i2.5713

Sari, D. K., & Ningsih, Y. (2023). The effect of problem based learning (PBL) model on fourth-grade students' learning outcomes of data presentation. In *Journal Of Teaching And Learning In Elementary Education* (Vol. 6, Issue 1, p. 46). Program Studi PGSD FKIP Universitas Riau. https://doi.org/10.33578/jtlee.v6i1.7961

Sihombing, L. N. (2025). The Influence Of Problem Based Learning (PBL) On The Learning Motivation Of Class III Students At State Elementary School. In *Jurnal Ilmu Sosial Mamangan* (Vol. 12, Issue 3, pp. 538–545). Universitas PGRI Sumatera Barat. https://doi.org/10.22202/mamangan.v12i03.7886

Solehudin, S., & Rochmiyati, S. (2023). Differentiated learning through the PBL model to improve indonesian language learning outcomes for elementary school students. In *Jurnal Bidang Pendidikan Dasar* (Vol. 7, Issue 2, pp. 99–105). Universitas PGRI Kanjuruhan Malang. https://doi.org/10.21067/jbpd.v7i2.8637

Suhandary, D., Syamsi, A., & Mudiyanto, H. (2024). The Effect of the Use of Problem Based Learning (PBL) Based on Student Worksheets (LKPD) on the Mastery of Science Concepts in Class V Ecosystem Materials. In *Indonesian Journal of Elementary Education (IJEE)* (Vol. 6, Issue 1, p. 20). IAIN Syekh Nurjati Cirebon. https://doi.org/10.24235/ijee.v6i1.13647

Usman, H. (2020). The Relationship between Interest in Reading and English Vocabulary Mastery at Elementary School. In *Journal of Advanced Research in Dynamical and Control Systems* (Vol. 12, pp. 585–594). Institute of Advanced Scientific Research. https://doi.org/10.5373/jardcs/v12sp4/20201525

Wijayanti, S. D., Taqiya, I., Sari, F. K., & Amaliyah, F. (2025). Application of The Problem-Based Learning Model to Improve Students' Mathematical Problem-Solving Abilities in Elementary School. In *Riemann: Research of Mathematics and Mathematics Education* (Vol. 7, Issue 2, pp. 131–138). Universitas Katolik Santo Agustinus Hippo. https://doi.org/10.38114/reimann.v7i2.59

Zaenuri, Imam, F., & Nugroho, S. E. (2020). The effectiveness of problem based learning (PBL) model with ethnomatematics to improve mathematics literation ability of high school students. In *Journal of Physics: Conference Series* (Vol. 1567, Issue 2, p. 22086). IOP Publishing. https://doi.org/10.1088/1742-6596/1567/2/022086

Zakiyah, Y., Setyaningsih, N., Qudriyati, A., & Murtiasa, B. (2025). Integration of Tolkama Media in the Problem Based Learning (PBL) Model to Improve Understanding of the Concept of Multiplication in Elementary Schools. In *Daya Matematis: Jurnal Inovasi Pendidikan Matematika* (Vol. 13, Issue 3, p. 206). Universitas Negeri Makassar. https://doi.org/10.26858/jdm.v13i3.81543

Zhang, M. (2024). The Feasibility of Problem-based Learning (PBL) in Junior High School English Teaching—A Case Study of Seventh Grade English Grammar Class. In *Education Research* (Vol. 1, Issue 1, pp. 1–7). Zeus Press. https://doi.org/10.70267/xws21019