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The Effect of the Problem Based Learning (PBL) Learning Model Assisted by CANVA Media on Elementary School Students' Learning Motivation and Learning Outcomes

Noorma Lenny[1], Banun Havifah Cahyo Khosiyono[2], Syarifuddin[3]
Master of Elementary Education, Faculty of Teacher Training and Education, Universitas Terbuka

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ABSTRACT

This study aims to examine the relationship between the *Problem Based Learning* (PBL) model assisted by Canva media and elementary school students' learning motivation and learning outcomes. The research employed a quantitative approach supported by qualitative data obtained through teacher interviews. Quantitative data were analyzed using the Wilcoxon test on students' learning motivation scores as well as pretest and posttest results. The findings indicate that the implementation of the PBL model assisted by Canva media has a significant relationship with the improvement of students' learning motivation, as reflected in increased interest, activeness, confidence in expressing opinions, and seriousness in participating in learning activities. In addition, students' learning outcomes also showed a significant improvement, not only in written test scores but also in their ability to understand the material, answer questions, and verbally express their understanding during the learning process. Simultaneously, increased learning motivation positively contributes to improved learning outcomes. Therefore, it can be concluded that the PBL model assisted by Canva media is effective in creating a more engaging, meaningful, and effective learning process, particularly in Indonesian language subjects at the elementary school level.

Corresponding Author:

Noorma Lenny
Master of Elementary Education, Faculty of Teacher Training and Education, Universitas Terbuka
Email: 530060664@ecampus.ut.ac.id

1. INTRODUCTION

21st-century learning requires all components of education to utilize technology, particularly in designing learning media. The use of technology can contribute to increased teacher innovation, making learning media more engaging for students [1]. In an effort to create an engaging learning environment, teachers are expected to be proficient in using technology. Competent teachers can influence the quality of education in schools. This competence is demonstrated through their ability to teach in the classroom. The quality of

education will impact students' success in achieving competencies in subjects. Learning activities in Indonesia still tend to be teacher-oriented, predominantly using stories or lectures. Padilah et al. [2] explain that in the learning process, students tend to participate passively due to teachers' lack of intensity in involving learning media, and this impacts the learning process as less meaningful. This indirectly impacts the difficulty of achieving learning objectives.

Learning objectives can be achieved when teachers implement instructional models that align with students' needs and characteristics [3]. Limited variation in learning models has been shown to reduce students' learning motivation, teachers are encouraged to apply student-oriented models [4]. One such model is Project-Based Learning (PBL), which is problem-centered, student-oriented, and based on real-life contexts relevant to learning objectives [5].

The PBL model enhances students' learning motivation by encouraging them to actively explore and solve problems independently [6]. It also improves critical, creative, and collaborative thinking skills [7] while providing authentic and relevant learning challenges that accommodate students' learning pace [8]. Therefore, PBL implementation should adapt to technology-based educational developments.

Learning motivation plays a crucial role in students' academic success, as it determines persistence and effort in learning [9]. Motivation is defined as an internal and external driving force that directs behavior and supports academic achievement [10]. However, several studies report low student motivation due to limited active participation, teacher-centered instruction, unclear learning goals, and a lack of alignment with students' interests and needs [11]

Strong learning motivation positively influences learning outcomes, which reflect students' knowledge, attitudes, and skills acquired through learning experiences [12]. Engaging and innovative learning activities are essential, as monotonous and conventional teaching approaches reduce classroom interaction and learning outcomes [13]. Consequently, improving instructional models is necessary to optimize students' motivation and learning outcomes.

Observations at SD Muhammadiyah 001 Melak indicate that students' learning motivation remains low, as reflected in passive participation, limited teacher–student collaboration, and a monotonous learning atmosphere, which ultimately affects students' learning outcomes. Preliminary data show that 16 out of 28 fifth-grade students (57.14%) did not meet the Minimum Mastery Criterion (KKM = 75), while 18 students (64.29%) were categorized as having low learning motivation. These findings suggest a strong relationship between low learning motivation and suboptimal learning outcomes, highlighting the need for student-centered learning models supported by engaging and interactive media.

One instructional medium that can be utilized is Canva, a web-based platform that provides various graphic design templates to support the development of attractive learning materials [14]. Previous studies have shown that the implementation of Problem-Based Learning (PBL) supported by Canva positively influences student well-being, learning outcomes, concentration, and learning activities across several subjects, including science

and mathematics [15]. Moreover, the integration of PBL and Canva creates a positive learning atmosphere and enhances students' learning experiences [16]

However, most existing studies focus on science and mathematics subjects and rarely examine learning motivation as a mediating variable. Research on the application of PBL supported by Canva in Indonesian language learning at the elementary level is still limited, even though this subject plays a crucial role in developing students' literacy, communication, and critical thinking skills. In practice, many elementary students still fail to achieve the KKM in Indonesian language subjects due to low attention, limited use of engaging media, and less optimal learning models that promote active student involvement, which ultimately leads to low learning motivation and achievement.

Therefore, based on the background presented, there are still research gaps that require further study, particularly regarding the effect of implementing the Problem-Based Learning (PBL) model with the aid of Canva media on student motivation and learning outcomes in Indonesian language learning in fourth-grade elementary schools. This research is expected to provide an empirical overview of the effectiveness of this learning model in improving learning motivation and optimal student learning outcomes.

2. METHOD

Research Location and Time

The research will be conducted at Muhammadiyah 001 Melak Elementary School with fourth-grade students. The research will take place during the odd semester of the 2025/2026 academic year.

Research Design and Planning

This study employed a quasi-experimental design to examine the effects of Problem-Based Learning (PBL) supported by Canva media and learning motivation on the learning outcomes of fourth-grade elementary students. The research used a Non-equivalent Control Group Design, involving an experimental group and a control group that was not randomly selected but received the same pretest and posttest measurements. The experimental group was taught using the PBL model assisted by Canva, while the control group continued with conventional instruction. This design was chosen because the groups were not fully equivalent but shared relevant characteristics [17]. The use of this quasi-experimental design allows for objective comparison of students' learning outcomes before and after treatment, in line with Sugiyono [18], who states that in quasi-experimental research, only the experimental group receives treatment.

Experimental	O_1	X	O_2
Control	O_3		O_4

Source: Cohen et al. (2011)

Description:

Experimental: Group of students receiving treatment in the form of PBL learning assisted by Canva media

Control: Group of students not receiving treatment

01: Pretest results for the experimental group
02: Posttest results for the control group
03: Pretest results for the control group
04: Posttest results for the control group
X: Treatment

Population and Sample

The population is defined as a group of subjects or objects with specific characteristics determined by the researcher for analysis and conclusion drawing [19]. Accordingly, the population of this study consisted of 35 fourth-grade students at SD Muhammadiyah 001 Melak.

The sample is a subset of the population selected to represent the entire population in the research process. This study employed total sampling, in which all members of the population were included as research participants, due to the relatively small population size and the suitability of all subjects with the research criteria [19]. Therefore, the sample comprised all 35 fourth-grade students at SD Muhammadiyah 001 Melak.

In the implementation of the quasi-experimental Non-equivalent Control Group Design, the sample was divided into experimental and control groups based on existing classes without random assignment. This approach aligns with the characteristics of quasi-experimental research, where full randomization of subjects is not feasible, while equivalence between groups is maintained based on relevant characteristics.

3. RESULTS AND DISCUSSION

3.1. Results

Instrument Testing and Analysis Prerequisites

Validity Test

The validity test was conducted to ensure that the research instruments accurately measured the intended variables. In this study, validity testing was applied to the learning motivation questionnaire and student learning outcome test using item–total score correlations. Items with correlation values exceeding the *r* table at the specified significance level were considered valid and used in the analysis.

Based on the validity test results of the pretest learning motivation instrument shown in Table 1, all 28 items were declared valid, as each item's correlation coefficient (*r* calculated) exceeded the *r* table value of 0.361. The highest *r* value was found in item Y1.10 (0.852), while the lowest was in item Y1.16 (0.481). Therefore, all items met the validity criteria and were suitable for data collection.

Table 1. Validity Test of Learning Motivation Pretest

Statement	r count	r table	Criteria
Y1.1	0.804	0.361	Valid
Y1.2	0.811	0.361	Valid
Y1.3	0.733	0.361	Valid
Y1.4	0.846	0.361	Valid
Y1.5	0.737	0.361	Valid
Y1.6	0.843	0.361	Valid
Y1.7	0.751	0.361	Valid
Y1.8	0.791	0.361	Valid
Y1.9	0.774	0.361	Valid
Y1.10	0.852	0.361	Valid
Y1.11	0.628	0.361	Valid
Y1.12	0.618	0.361	Valid
Y1.13	0.516	0.361	Valid
Y1.14	0.518	0.361	Valid
Y1.15	0.627	0.361	Valid
Y1.16	0.481	0.361	Valid
Y1.17	0.584	0.361	Valid
Y1.18	0.683	0.361	Valid
Y1.19	0.523	0.361	Valid
Y1.20	0.535	0.361	Valid
Y1.21	0.780	0.361	Valid
Y1.22	0.776	0.361	Valid
Y1.23	0.756	0.361	Valid
Y1.24	0.726	0.361	Valid
Y1.25	0.795	0.361	Valid
Y1.26	0.707	0.361	Valid
Y1.27	0.695	0.361	Valid
Y1.28	0.735	0.361	Valid

Source: SPSS Output Results, 2025

Reability Test

The reliability test was conducted to examine the consistency of the learning motivation instrument using Cronbach's Alpha with SPSS. The instrument was considered reliable when the Cronbach's Alpha value reached an acceptable level, indicating its suitability for research data collection.

Table 2. Reliability Test of Learning Motivation Pretest

Variable	Number of Items	Cronbach's Alpha Value	Criteria	Description
Motivation to learn	28	0,959	Reliable	Instruments fit for use

Source: SPSS Output Results, 2025

Based on the reliability test results of the pretest learning motivation instrument presented in Table 2, the Cronbach's Alpha value was 0.959 for 28 items. This result indicates that the instrument has an acceptable level of reliability, demonstrating good consistency and suitability for data collection in this study.

Quantitative Research Results

The Relationship between the Problem Based Learning (PBL) Model Assisted by Canva Media and Elementary Students' Learning Motivation

Hypothesis testing was conducted to examine differences in students' learning motivation before and after the implementation of the Canva-assisted Problem Based Learning (PBL) model. Since the normality test indicated that the data were not normally distributed, a nonparametric statistical test, namely the Wilcoxon Signed Rank Test, was employed.

Table 3. Wilcoxon Rank Test Results for Student Learning Motivation

Comparison	Number of Students (N)	Mean Rank	Total Rank
Decline (Posttest < Pretest)	0	0,00	0,00
Improvement (Posttest > Pretest)	35	18,00	630,00
Total	**35**		

Source: SPSS Output Results, 2025

Based on the Wilcoxon Signed Rank Test results for students' learning motivation presented in Table 3, all students showed an improvement in learning motivation after the implementation of the Canva-assisted Problem-Based Learning (PBL) model. This is indicated by 35 Positive Ranks with a Mean Rank of 18.00 and a Sum of Ranks of 630.00, while Negative Ranks and Ties were both zero. These findings indicate that posttest motivation scores were higher than pretest scores for all respondents, suggesting that the Canva-assisted PBL model effectively increased students' learning motivation.

Table 4. Wilcoxon Statistical Results of Student Learning Motivation Test

Comparison	Z Value	Sig. (2-tailed)	Decision
Learning Motivation (Posttest – Pretest)	-5,161	0,000	H_0 rejected

Source: SPSS Output Results, 2025

Based on the Wilcoxon Signed Rank Test results for students' learning motivation shown in Table 4, a Z value of −5.161 with an Asymptotic Significance (2-tailed) of 0.000 (< 0.05) was obtained. These results indicate a significant difference in students' learning motivation before and after the implementation of the Canva-assisted Problem Based Learning (PBL) model. Therefore, the research hypothesis stating that the use of the Canva-assisted PBL model affects elementary students' learning motivation is accepted.

The Relationship between the Canva-Assisted Problem Based Learning (PBL) Model and Elementary Students' Learning Outcomes

Hypothesis testing for students' learning outcomes was conducted to examine differences in learning outcomes before and after the implementation of the Canva-assisted Problem Based Learning (PBL) model. Since the normality test indicated that the learning outcomes data were not normally distributed, a nonparametric statistical test, namely the Wilcoxon Signed Rank Test, was applied.

Table 5. Results of the Wilcoxon Rank Test for Learning Outcomes

Comparison	Number of Students (N)	Mean Rank	Total Rank
Decline (Posttest < Pretest)	0	0,00	0,00
Improvement (Posttest > Pretest)	35	18,00	630,00
Total	**35**		

Source: SPSS Output Results, 2025

The Wilcoxon Signed Rank Test results in Table 5 show that all students experienced improved learning outcomes after the implementation of the Canva-assisted Problem Based Learning (PBL) model. All 35 students were in the Positive Ranks category, indicating higher posttest scores than pretest scores. This suggests that the Canva-assisted PBL model effectively improves students' learning outcomes.

Table 6. Wilcoxon Statistical Results of Learning Outcomes

Comparison	Z Value	Sig. (2-tailed)	Decision
Learning outcomes (Posttest – Pretest)	-5,174	0,000	H_0 rejected

Source: SPSS Output Results, 2025

Based on the Wilcoxon Signed Rank Test results on students' learning outcomes in Table 6, a Z value of −5.174 with a significance level of 0.000 (< 0.05) was obtained. This indicates a significant difference in students' learning outcomes before and after the implementation of the Canva-assisted Problem Based Learning (PBL) model. Therefore, the research hypothesis stating that the Canva-assisted PBL model affects elementary students' learning outcomes is accepted.

The Relationship Between the Problem Based Learning (PBL) Learning Model Assisted by Canva Media on Elementary School Students' Learning Motivation and Learning Outcomes

Overall, the quantitative analysis shows that the implementation of the Canva-assisted PBL model has a significant positive effect on both students' learning motivation and learning outcomes. Statistical results indicate significant improvements in motivation and achievement from Pretest to posttest, supported by Wilcoxon Signed Rank Test significance values of 0.000 (< 0.05) for both variables. All students demonstrated increased motivation and learning outcomes, with no decreases or unchanged scores.

These findings confirm that the Canva-assisted PBL model simultaneously influences students' motivation (affective aspect) and learning outcomes (cognitive aspect), demonstrating its effectiveness in improving the overall quality of learning among elementary school students.

Qualitative Research Findings

Description of the Implementation of PBL Assisted by Canva Media

The implementation of Indonesian language learning using the Problem Based Learning (PBL) model assisted by Canva media was conducted in a planned, systematic, and student-centered manner. Based on interviews with the fourth-grade teacher, learning began with contextual problems related to poetry that were closely connected to students' daily

lives to stimulate curiosity. Canva was used as a visual medium to present learning materials such as poetry examples and supporting illustrations, which helped attract students' attention and create a more engaging classroom atmosphere.

Students were organized into small groups to actively discuss and analyze poetry elements, themes, and messages, while the teacher acted as a facilitator. Canva supported the systematic presentation of material and encouraged student participation, including those who were previously passive. Students then presented their discussion results using Canva, followed by reflection and evaluation. Overall, the teacher reported that PBL assisted by Canva created a more enjoyable learning environment and improved students' understanding compared to conventional learning.

Teacher Interview Results Related to Students' Learning Motivation

Based on interviews with the fourth-grade teacher, the implementation of PBL assisted by Canva had a positive impact on students' learning motivation. The teacher stated that students showed greater interest, focus, and enthusiasm during learning activities. "After using PBL with Canva, students became more enthusiastic, focused, and willing to ask questions." (Fourth-grade teacher)

This indicates that Canva serves as an effective initial stimulus by providing attractive visual displays that maintain students' attention and reduce learning boredom. The teacher also noted changes in students' attitudes, where previously passive students became more active and confident in expressing opinions.

"Students who were usually passive are now more confident in sharing their ideas." Additionally, students showed greater persistence in completing tasks because learning activities were contextual and visually engaging.

"Students work more seriously on tasks because they are presented attractively and problem-based."

Overall, these findings indicate that PBL assisted by Canva enhances students' intrinsic motivation, which aligns with increased interest, active participation, and sustained attention. These qualitative findings support quantitative results showing increased motivation scores after the implementation of PBL assisted by Canva.

Teacher Interview Results Related to Students' Learning Outcomes

Interviews with the fourth-grade teacher revealed that PBL assisted by Canva significantly improved students' learning outcomes in Indonesian language subjects. "Students' understanding improved, as seen from higher posttest scores compared to pretest results and their ability to answer questions during discussions."

Improved learning outcomes were reflected not only in test scores but also in students' ability to explain poetry content, interpret meanings, and express opinions orally. The teacher emphasized that Canva helped clarify abstract poetry concepts through visual presentation.

"Poetry material became clearer when presented visually through Canva." Furthermore, PBL encouraged students to learn through direct experience via group discussions and problem-solving activities.

"Through group discussions, students understand better because they are directly involved in the learning process." The teacher also highlighted that almost all students experienced learning improvements. "Overall, students' scores improved. Nearly all students showed better results."

These findings are consistent with quantitative data showing increased posttest scores for all students, confirming the effectiveness of integrating PBL with Canva in improving learning outcomes.

Synthesis of Qualitative Findings

Based on teacher interviews, it can be synthesized that the implementation of PBL assisted by Canva positively affected the learning process, students' motivation, and learning outcomes. This approach created an active, interactive, and student-centered learning environment, with the teacher acting as a facilitator rather than the sole source of information. Canva played an important role in supporting PBL by presenting visually engaging materials that helped students better understand poetry content. Qualitative findings indicate increased student motivation, confidence, participation, and persistence in completing tasks. In terms of learning outcomes, improvements were evident not only in evaluation scores but also in students' conceptual understanding and communication skills. Overall, these qualitative findings reinforce the quantitative results, demonstrating that PBL assisted by Canva is an effective and innovative instructional strategy for improving motivation and learning outcomes in Indonesian language learning at the elementary school level.

3.2. Discussion

The Relationship between the Problem Based Learning (PBL) Model Assisted by Canva Media and Elementary Students' Learning Motivation

Based on the quantitative findings, there was a significant difference in students' learning motivation before and after the implementation of the Problem Based Learning (PBL) model assisted by Canva media. This was confirmed by the Wilcoxon Signed Rank Test, which showed a significance value of 0.000 (< 0.05). All students experienced an increase in motivation scores in the posttest compared to the Pretest, indicating that the research hypothesis was accepted. These results demonstrate that PBL assisted by Canva has a positive effect on elementary students' learning motivation.

The increase in students' motivation indicates that student-centered learning creates a more meaningful and supportive learning environment. Through problem-solving, discussion, and presentation activities, students actively participated in the learning process rather than passively receiving information. This active involvement enhanced students' focus, enthusiasm, and willingness to engage in learning activities, reflecting a clear improvement in learning motivation.

Canva media played an important supporting role by presenting learning materials in a visually attractive and varied format. The use of colors, images, and structured layouts helped capture students' attention and maintain their focus, reducing boredom and increasing

interest. Thus, Canva functioned as an effective stimulus that strengthened students' attention and interest, which are key components of learning motivation.

Furthermore, the PBL model fostered students' intrinsic motivation by encouraging collaboration, discussion, and problem-solving related to real-life situations. The teacher's role as a facilitator created a supportive atmosphere that increased students' confidence and independence in learning. This approach aligns with the cognitive development stage of elementary students, who better understand concrete and visual information. Canva's visual presentation supported this need by enhancing students' cognitive and emotional engagement.

The combination of problem-solving activities and group collaboration in PBL also aligns with constructivist learning theory, which emphasizes knowledge construction through social interaction. When students feel actively involved and their ideas are valued, they develop confidence, responsibility, and intrinsic motivation driven by curiosity and satisfaction in completing tasks.

These findings are consistent with motivation theories stating that learning motivation is influenced by interest, attention, active involvement, and an enjoyable learning environment [20], as well as intrinsic motivation factors [21]. The integration of PBL and Canva fulfills these motivational indicators and is theoretically supported [22]. Previous studies also support these results, showing that Canva and digital-based PBL increase student motivation and engagement [23]. Therefore, this study reinforces earlier findings and confirms a significant relationship between PBL assisted by Canva and increased learning motivation among elementary school students.

The Relationship between the Problem Based Learning (PBL) Model Assisted by Canva Media and Elementary Students' Learning Outcomes

Based on the quantitative results, there was a significant difference in students' learning outcomes before and after the implementation of the Problem Based Learning (PBL) model assisted by Canva media. The Wilcoxon Signed Rank Test showed a significance value of 0.000 (< 0.05), and all students experienced higher posttest scores than pretest scores. Therefore, the research hypothesis was accepted, indicating that PBL assisted by Canva has a positive and significant effect on elementary students' learning outcomes [24].

The improvement in learning outcomes demonstrates that learning activities emphasizing active student involvement enhance students' understanding of the material. Through problem-solving, discussion, and collaborative analysis, students developed deeper comprehension rather than passively receiving information. This meaningful learning process contributed to better performance in evaluations and task completion.

Canva media played a crucial role in supporting learning outcomes by providing visual representations of abstract concepts, particularly in poetry lessons. The use of images, examples, and attractive layouts helped students understand poetic elements, themes, and messages more clearly. As a result, Canva functioned as an effective instructional aid that strengthened students' conceptual understanding and positively impacted learning outcomes.

Furthermore, the PBL model encouraged higher-order thinking skills through collaborative problem-solving and group discussions. These activities allowed students to exchange ideas, clarify understanding, and construct knowledge socially, leading to deeper cognitive processing. Contextual problem presentation also supported meaningful learning by connecting new knowledge with students' prior experiences [25].

These findings align with learning outcome theories stating that optimal learning occurs when students actively engage in meaningful learning experiences [26]. The integration of PBL and visual media such as Canva creates an effective learning environment and leads to better learning outcomes compared to conventional methods [27]. Previous studies also support these results, confirming that PBL assisted by Canva or similar digital media significantly improves elementary students' learning outcomes ([28].

The Relationship between the Problem Based Learning (PBL) Model Assisted by Canva Media and Elementary Students' Learning Motivation and Learning Outcomes

Based on the research findings, the implementation of the Problem Based Learning (PBL) model assisted by Canva media has a significant simultaneous effect on students' learning motivation and learning outcomes. The Wilcoxon test results indicate a significant improvement in both variables after the application of PBL assisted by Canva, as shown by a significance value of 0.000 (< 0.05). All students experienced increases in motivation scores and learning outcomes in the posttest compared to the Pretest; therefore, the research hypothesis is accepted.

The simultaneous improvement in learning motivation and learning outcomes indicates a mutually supportive relationship between the two variables. Higher learning motivation encourages students to be more active, focused, and engaged in the learning process, which directly contributes to improved learning outcomes. Students with strong motivation tend to participate more actively, understand the material better, and complete learning tasks more effectively[29].

The PBL model possesses characteristics that enhance both learning motivation and learning outcomes through problem-based, contextual, and meaningful learning experiences. Students are actively involved in problem-solving, group discussions, and presentations, which foster a deeper understanding of the learning material. Canva media further supports the PBL implementation by providing visually engaging and structured learning materials that increase students' attention and facilitate comprehension, particularly for abstract concepts such as poetry in Indonesian language learning [30].

The effectiveness of PBL assisted by Canva can be explained by learning motivation theory, which emphasizes active engagement and intrinsic motivation in the learning process. Students' active involvement, collaborative learning, and visual support reduce cognitive load and promote meaningful learning experiences. This finding is consistent with theories stating that learning motivation significantly influences learning outcomes [31] and that meaningful, active learning experiences improve learning achievement [32]. Furthermore, previous studies have reported similar results, confirming that PBL assisted by Canva or digital media enhances students' motivation, engagement, and learning outcomes [33].

4. CONCLUSION

Based on the research findings and discussion, several conclusions can be drawn to address the research problems directly:

a. There is a significant relationship between the PBL model assisted by Canva media and elementary students' learning motivation. The Wilcoxon test results indicate a significant increase in students' motivation after the implementation of PBL assisted by Canva. This finding is supported by teacher interviews showing increased student interest, participation, confidence in expressing opinions, and engagement in learning activities.

b. There is a significant relationship between the PBL model assisted by Canva media and elementary students' learning outcomes. The Wilcoxon test results on pretest and posttest scores show that all students experienced improved learning outcomes after the implementation of PBL assisted by Canva. This improvement is reflected not only in test scores but also in students' understanding, responses, and verbal explanations during the learning process.

c. The PBL model assisted by Canva media has a significant simultaneous relationship with students' learning motivation and learning outcomes. Increased learning motivation encourages students to be more active and focused, which positively affects learning outcomes. Both quantitative and qualitative findings indicate that the integration of PBL and Canva creates a more meaningful, engaging, and effective learning process, particularly in Indonesian language learning.

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