Jurnal Cakrawala Pendas
Vol. 11 No. 2, April 2025
DOI: http://dx.doi.org/10.31949/jcp.v11i2.13002

p-ISSN: 2442-7470
e-ISSN: 2579-4442

PROBLEM BASED LEARNING THROUGH CANVA INTERACTIVE VIDEO: IMPROVING LEARNING OUTCOMES PROBLEM SOLVING IN MATHEMATICS ELEMENTARY SCHOOL TIME MEASUREMENT MATERIALS

Meysa Dewi Adellia Putri[1], Rusnilawati Rusnilawati[2*]
[1,2] Universitas Muhammadiyah Surakarta
[2]rus874@ums.ac.id

Abstract
Technological developments encourage innovation in learning models to improve student learning outcomes. The use of technology facilitates the delivery of material and creates a more interesting learning experience. This study aims to examine the application of the Problem Based Learning model combined with Canva interactive video on the learning outcomes of second grade students of Gemarang Elementary School on the subject of measuring mathematical time. This study uses a quantitative approach with a quasi-experimental design, using a pre-test and post-test. The sample of this study consisted of two classes, namely the experimental class at SDN Gemarang (N=23) using the Problem Based Learning model accompanied by Canva interactive videos and the control class at SDN Ngale (N=23) using a contextual model with concrete media. Data analysis techniques included independent t-test, dependent t-test, and N-gain test. The results of the study showed that the use of the Problem Based Learning model with Canva interactive videos effectively improved student learning outcomes. This was proven by the N-gain of the experimental class of 60.37 (medium category), higher than the control class which was only 30.57 (low category). Canva interactive videos support the early stages of Problem Based Learning by presenting problems in an interesting way and helping students develop problem-solving strategies.
Keywords: *Problem Based Learning; Canva Interactive Video Media; Student Learning Outcomes; Time Measurement*

Abstrak
Perkembangan teknologi mendorong inovasi dalam model pembelajaran untuk meningkatkan hasil belajar siswa. Penggunaan teknologi mempermudah penyampaian materi dan menciptakan pengalaman belajar yang lebih menarik. Penelitian ini bertujuan menguji penerapan model Problem Based Learning yang dipadukan dengan video interaktif Canva terhadap hasil belajar siswa kelas II Sekolah Dasar Gemarang pada materi pengukuran waktu matematika. Penelitian ini menggunakan pendekatan kuantitatif dengan desain quasi-eksperimen menggunakan pre-test serta post-test, sampel penelitian terdiri dari dua kelas: kelas eksperimen di Sekolah Dasar Gemarang (N=23) yang menggunakan Problem Based Learning dengan video interaktif Canva, dan kelas kontrol di Sekolah Dasar Ngale (N=23) yang menggunakan model kontekstual dengan media konkret. Teknik analisis data mencakup uji-t independen, uji-t dependen, dan uji N-gain. Hasil Penelitian menunjukkan bahwa penggunaan model Problem Based Learning dengan video interaktif Canva efektif meningkatkan hasil belajar siswa. Hal ini dibuktikan oleh N-gain kelas eksperimen sebesar 60,37 (kategori sedang), lebih tinggi dibandingkan kelas kontrol yang hanya 30,57 (kategori rendah). Video interaktif Canva mendukung tahap awal Problem Based Learning dengan menyajikan masalah secara menarik dan membantu siswa mengembangkan strategi pemecahan masalah.
Kata Kunci: Problem Based Learning; Media Video Interaktif Canva; Hasil Belajar Siswa; Pengukuran Waktu

Received	: 2025-02-04	Approved	: 2025-04-04
Reviesed	: 2025-03-29	Published	: 2025-04-30

Introduction

Innovative learning in the 21st century encourages the development of creativity and critical thinking skills in students. Technological advances have changed learning methods, including in mathematics which is still a challenge for many students. The Student Centered Learning approach allows students to explore learning resources independently (Setiawati, 2024). Along with the rapid development of technology that affects various aspects of life, education also continues to adapt, requiring educators and students to adjust to the needs of modern learning. The student-centered learning model gives them the freedom to study knowledge independently (Hayati, 2020). Quality education plays an important role in improving the competence of human resources (Adhana, 2024), which has a positive impact on various sectors and contributes to the formation of a moral and superior generation.

Technological progress in education is revolutionizing learning by making it more accessible and altering traditional learning methods (Pedroso et al., 2023). The use of interactive learning media fosters an innovative educational environment and enhances student engagement (Lana et al., 2023). Mathematics is essential for the progress of science and technology and influences students' mindsets and attitudes (Prasetyo, 2022). Cahyadi (Karimah et al., 2023) highlights that mathematics, including concepts like time measurement pertinent to daily activities such as bedtime or school schedules, is a significant aspect of education. Solving mathematical problems requires understanding various concepts, skills, and processes (Pioke et al., 2023). The aim of mathematics education is to cultivate critical, logical, and systematic thinking, enabling students to grasp and apply concepts effectively (Biantong et al., 2023). Although the learning process is generally effective, challenges remain in achieving optimal results, necessitating active participation from both teachers and students (Puspita et al., 2018).

Interviews with grade II teachers from Gemarang Elementary School revealed that many students struggle with mathematics, particularly in understanding time measurement. Students find it challenging to grasp concepts like counting minutes in an hour and reading a clock. Despite the teacher using a wall clock for explanations, students still face difficulties due to the reliance on verbal instruction without supplementary visual aids and interactive discussions.

Test results indicate that many students have not mastered time measurement concepts. Only 12 students achieved the Minimum Completeness Standard (KKM) of 75, with an average score of 75, while 9 others fell short of this standard with an average score of 50. This translates to 57.14% of students meeting the KKM, leaving 42.86% who did not. These results demonstrate that nearly half of the students have not reached the KKM. Understanding time measurement is crucial for daily life, such as managing schedules, practicing time discipline, and recognizing when to perform activities like going home from school or going to bed. Although the learning process is generally smooth, obstacles remain that hinder the achievement of educational goals, highlighting the need for active involvement from both teachers and students (Puspita et al., 2018).

The Problem-Based Learning (PBL) model is effective in improving students' critical thinking skills through active problem solving (Silvi et al., 2020). This model involves students in facing real-world challenges, developing their thinking skills while encouraging collaboration and interaction, which is in line with the goals of 21st-century education (Rahayu, 2023). PBL fosters problem-solving skills through critical and logical reasoning (Dwidiarti, 2021). By presenting challenges, this approach motivates students to find solutions, making the learning

experience more impactful and memorable (Senja et al., 2024). Interactive media such as Canva allow educators to design engaging materials using templates, while interactive videos integrate sound, movement, and visuals to enrich the learning experience (Biassari et al., 2021). Canva helps students understand lessons through engaging text, video, audio, images, and graphics (Hayati, 2020). These learning media are very important to increase student interest and facilitate understanding of abstract subjects, such as mathematics, thus improving educational outcomes (Darmayanti et al., 2022). Tools like Canva enable educators to design engaging materials using templates, while interactive videos integrate sound, movement, and visuals to enrich the learning experience (Biassari et al., 2021). Canva aids students in grasping lessons through appealing text, videos, audio, images, and graphics (Hayati, 2020). Such learning media are crucial for boosting student interest and facilitating comprehension of abstract subjects, such as mathematics, thus improving educational outcomes (Darmayanti et al., 2022).

Problem-Based Learning (PBL) is an educational approach that engages students in solving real-world problems (Silvi et al., 2020). This method aids students in understanding concepts through problem-solving, skill enhancement, self-reliance, and increased confidence (Sanjaya et al., 2024). PBL focuses on students and facilitates their ability to tackle mathematical problems more effectively (Indarwati et al., 2014). According to (Kusumaningrum et al., 2023), the PBL model follows a structured process that includes: 1) Presenting the problem, 2) Designing learning activities, 3) Facilitating investigations, 4) Sharing results, and 5) Evaluating solutions. This approach encourages active knowledge construction, skill development, and higher-order thinking, particularly in mathematics.

Interactive learning media enhances creative learning and helps students concentrate better on the material presented by teachers. As noted by (Lana et al., 2023), learning media serves as a tool to improve communication between educators and students, as well as the overall quality of education (Helingo et al., 2023). Canva is particularly useful for teachers in designing educational materials; (Wulandari, 2022) highlights that Canva simplifies the creation of learning media and enhances educational experiences through technology, creativity, and skills. The design tools in Canva appeal to students, and the app's innovative features facilitate video creation for teachers (Pratiwi, 2023). According to (Kharissidqi, 2022), Canva offers several advantages, including: 1) visually appealing designs, 2) enhanced teacher creativity in media creation, 3) time and energy savings, and 4) the ability to use laptops for designing educational content.

Student learning outcomes result from effort and reflect measurable, sustainable changes across cognitive, affective, and psychomotor dimensions (Suhendri, 2015). Various assessments are utilized to evaluate learning outcomes and achievement levels (Pratiwi, 2023). Learning is assessed through test scores that quantify students' growth in knowledge, skills, understanding, and attitudes (Listyaningsih et al., 2023). Benjamin categorizes learning outcome indicators into three domains: 1) The cognitive domain, which focuses on behavioral changes in thinking and includes six levels (Nafiati, 2021): Knowledge (C1) for recalling concepts; Comprehension (C2) for interpreting learning; Application (C3) for using concepts; Analysis (C4) for organizing and connecting information; Evaluation (C5) for making judgments based on criteria; and Creation (C6) for assembling elements into something new. 2) The affective domain, which aims to improve attitudes and behaviors. 3) The psychomotor domain, which relates to skills achieved through mastering basic abilities. This study focuses specifically on the cognitive domain, from knowledge to creation.

Research by (Dwidiarti, 2021) indicates that the PBL model enhances student engagement and learning outcomes, particularly in understanding mathematical concepts related to time

measurement. (Hana et al., 2023) found that the PBL model improves mathematics learning outcomes in second-grade time measurement materials. Similarly, (Zakiah et al., 2023) indicates that PBL enhances student learning outcomes, although previous studies did not incorporate audio-visual technology.

Research by (Pratiwi, 2023) demonstrates that using Canva-based learning media can improve learning outcomes. Furthermore, (Hayati, 2020) reveals that learning videos created with Canva are innovative and align with contemporary educational trends. (Hidayat et al., 2024) validated that multimedia learning videos on cultural diversity created with Canva are deemed "very good" for fourth-grade students at SDN Sukamaju. However, earlier studies did not employ a real-based learning model.

Studies by (Saputro, 2021) highlight that concrete teaching aids significantly boost motivation and math outcomes for second-grade students. Additionally, (Siagian et al., 2020) found that student independence positively influences mathematics outcomes in fifth-grade elementary students. However, prior research has not applied a real-based learning model combined with audio-visual technology.

While earlier studies have shown that PBL enhances student learning outcomes, this research aims to investigate the effectiveness of PBL using Canva interactive videos in mathematics as a novel approach to improve educational results. The objectives of this study are: 1) to identify significant differences in the learning outcomes of students using PBL with Canva interactive videos compared to those using a contextual model with concrete media, and 2) to assess the effectiveness of PBL via Canva interactive videos on student outcomes in time measurement materials.

Research Methods

This study employs a quantitative research approach utilizing a quasi-experimental design, specifically a non-equivalent control group design, to evaluate the effectiveness of the Problem-Based Learning (PBL) model through Canva Interactive Videos in enhancing student learning outcomes in second-grade mathematics, focusing on time measurement. In this design, participants are drawn from a specific population and randomly assigned into two groups: an experimental group and a control group. The experimental group received instruction using the PBL model with Canva interactive videos, while the control group followed a contextual model supported by concrete media.

Participants included second-grade students from Gemarang Elementary School and Ngale Elementary School in Ngawi, East Java. The sample consisted of 23 students in the experimental group and 23 in the control group. The control group utilized a contextual model with concrete media, whereas the experimental group was taught using the PBL model with Canva's interactive video media. Data collection involved administering pre-tests and post-tests comprising multiple-choice and descriptive questions to evaluate student learning outcomes. The pre-test for the experimental group was conducted prior to implementing the PBL model with Canva interactive videos, while the control group's pre-test occurred before applying the contextual model with concrete media. Post-tests were given to both groups: the experimental group after the PBL intervention and the control group following the contextual model application.

The assessment instruments for the pre-tests and post-tests were designed to measure student learning outcomes based on cognitive domain indicators defined by (Nafiati, 2021): Knowledge (C1), Understanding (C2), Application (C3), Analysis (C4), Evaluation (C5), and

Creation (C6). These instruments underwent validity and reliability testing. The validity test conducted on third-grade students at Gemarang Elementary School indicated that 15 of the multiple-choice questions were valid, while 5 were deemed invalid and thus excluded. Additionally, the validity assessment of the essay questions found 5 items met the validity criteria and would be included in the research. Following the validity testing, the reliability of the multiple-choice question instrument was evaluated, as detailed in Table 1.

Table 1. *Reliability Test of Multiple Choice Question Instruments*

Multiple Choice Question Instrument	
Cronbach's Alpha	N of Items
0,826	15

The learning outcome instrument has an r-table value of 0.433, and the reliability of the multiple-choice questions, measured by a Cronbach's Alpha of 0.826, indicates that it is reliable. The reliability test results for the essay question instrument are presented in Table 2 below.

Table 2. *Essay Question Reliability Test*

Essay Question Instrument	
Cronbach's Alpha	N of Items
0,644	5

Data analysis includes testing for normality and homogeneity. The Shapiro-Wilk test is used to determine if the data follows a normal distribution, while the F test evaluates the homogeneity of the samples. The effectiveness of Canva interactive video media combined with the Problem-Based Learning model on the learning outcomes of second-grade elementary school students was assessed. Hypothesis testing was conducted using the N-Gain test and the t-test at a significance level of 0.05, with statistical analysis performed using SPSS version 25.

Normalized N Gain calculation with the formula according to (Wahab et al., 2021)

$$N\text{-}gain\ (g) = \frac{Skor\ Posttest - Skor\ Pretest}{Skor\ Maksimum - Skor\ Pretest}$$

N-gain category according to Hake in (Simalungun, 2023) criterion:

N Gain Value	Category
$g > 0.7$	Tall
$0.3 \leq g \leq 0.7$	Keep
$g < 0.3$	Low

Table 3. *Categories N-Gain*

Percentage	**Interpretation**
< 40	Ineffective
40 – 55	Less effective
55 – 75	Quite Effective
>76	Effective

Jurnal Cakrawala Pendas Vol. 11, No. 2, April 2025, pp. 316-329

Result and Discussion

This research took place at Gemarang Elementary School and Ngale Elementary School in November 2024. The study aims to evaluate the implementation of the Problem-Based Learning (PBL) model using Canva interactive video media to enhance student learning outcomes in second-grade mathematics, focusing on time measurement. The research utilizes a quasi-experimental design and involves two schools: the second grade at Gemarang Elementary School serves as the experimental group, where the PBL model with Canva interactive videos is applied, while the second grade at Ngale Elementary School acts as the control group, employing a contextual model with concrete media. Both groups consist of 23 students each.

The research was conducted over three sessions, beginning with a pre-test in both classes. The experimental group received instruction using the PBL model with interactive videos created on Canva, while the control group was taught the same material through a contextual model with concrete media. After the treatment, both classes took a post-test to evaluate their learning outcomes.

The first phase of the instruction involved an introduction, which included connecting the time measurement material to previous lessons through apperception, followed by ice-breaking activities to enhance student engagement. The second phase constituted the core learning activities applying the PBL model, which includes five steps: 1) In the problem orientation phase, the teacher assists students in understanding and addressing the challenges presented. Students access problem videos through interactive Canva by scanning a QR code, which aids in skill development. 2) The teacher organizes learning by showing interactive Canva videos that guide students in problem-solving. After solutions are found, the teacher explains the mathematical concepts and divides students into five groups of 4-5 members. 3) The teacher facilitates individual and group investigations by providing LKPD questions to each group and monitoring their progress. Students are tasked with creating a wall clock from recycled cardboard, working collaboratively. If students encounter difficulties, the teacher offers explanations or guidance to help them overcome the challenges. 4) Each group presents their findings, followed by a discussion where peers provide feedback. 5) The teacher and students analyze and evaluate the solutions, reviewing the material and assessing student work, concluding the lesson with feedback and a discussion of next steps.

Following the validation and reliability confirmation of the assessment instruments, pre-test and post-test data were collected for analysis. Normality and homogeneity tests were then conducted for both the experimental and control groups. The data were processed using SPSS, yielding the results outlined below.

Table 4. Descriptive Statistic

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pre-Test Experiment	23	52	76	64.96	6.657
Post-test Eksperimen	23	76	96	85.74	6.503
Pre-test check-ups	23	38	64	52.96	6.711
Post-test Control	23	52	76	67.22	6.230
Valid N (listwise)	23				

According to Table 4, the experimental class achieved an average pre-test score of 64.9, while the control class scored 52.9, highlighting a difference in learning outcomes. Following the treatment, the experimental class's post-test score rose to 85.7, in contrast to 67.2 for the control class. This indicates that the learning outcomes in the experimental class were superior to those in the control class.

Table 5. Normality Test

Types of Tests	Class	Significance Value
Pre-Test	Eksperimen	0,325
	Control	0,236
Post-Test	Eksperimen	0,073
	Control	0,425

The normality test results presented in Table 5 show significance values of 0.325 for the pre-test in the experimental group and 0.236 for the control group, indicating a normal distribution. For the post-test, the experimental group had a significance value of 0.073, while the control group scored 0.425. All values are above 0.05, confirming that the data follow a normal distribution.

Table 6. Homogeneity Test

	Test and Homogenity of Levene Statistic	df1	df2	Significance Value	A
Based on Mean	.026	1	44	0,874	0,05

According to Table 6, the homogeneity test results indicate a significance value of 0.874, which is greater than 0.05. This suggests that the data is homogeneously distributed.

Table 7. Independet Pre-Test t-Test (Experimental Class and Control Class)

Sig (2-tailed)	A	T-value	Status
0,000	0,05	6,088	$_{H0}$ Rejected

As shown in Table 7, the Sig (2-tailed) value of 0.000 is less than 0.05, leading to the rejection of the null hypothesis (H0). This indicates a significant difference in learning outcomes between students who used the Problem-Based Learning Model with Canva interactive videos and those who learned through the contextual model with concrete media in the second-grade time measurement material.

Table 8 Independent t-Test Post-Test (Experimental Class and Control Class)

Sig (2-tailed)	A	T-value	Status
0,000	0,05	9,863	$_{H0}$ Rejected

According to Table 8, the Sig (2-tailed) value of 0.000 is less than 0.05, resulting in the rejection of the null hypothesis (H0). This indicates a significant difference in learning outcomes between students utilizing the Problem-Based Learning Model with Canva interactive videos and those employing the contextual model with concrete media in the second-grade time measurement material.

Table 9. Dependent t-test Pre-test and Post-test Control class

Sig (2-tailed)	A	T-value	Status
0,000	0,05	-24,015	$_{H0}$ Rejected

According to Table 9, the dependent t-test revealed a Sig (2-tailed) value of 0.000, which is below 0.05, leading to the rejection of the null hypothesis (H0). This indicates a significant difference in student learning outcomes before and after implementing the Problem-Based Learning model with Canva interactive video media in the second-grade time measurement material. The N-Gain test will be employed to assess student performance following the implementation.

Table 10. Dependent t-test Pre-test and Post-test Experimental class

Sig (2-tailed)	A	T-value	Status
0,000	0,05	-20,385	$_{H0}$ Rejected

According to Table 10, the dependent t-test results indicate a Sig (2-tailed) value of 0.000, which is less than 0.05, leading to the rejection of the null hypothesis (H0). This indicates a significant difference in student learning outcomes before and after the implementation of the Problem-Based Learning Model with Canva interactive video media in the second-grade time measurement material.

Table 11. Uji N-gain

Number of Students	Class	Rata-Rata Score Post-Test	N-Gain (%)	Category
23	Eksperimen	60,36	60,3	Quite Effective
	Control	30,57	30,5	Ineffective

The results of the N-gain score test reveal that the experimental class had a mean value of 60.36, compared to 30.57 for the control class. This indicates that the Problem-Based Learning model using Canva interactive video media is fairly effective in enhancing student learning outcomes.

A learning model refers to a teaching method employed by educators to achieve specific educational objectives (Marfu'ah et al., 2022). Problem-Based Learning (PBL) models are essential for actively engaging students and enhancing their thinking skills through real-life problems, supported by various media to improve learning outcomes. Canva facilitates student comprehension by presenting engaging text, videos, animations, audio, images, and graphics, thereby increasing focus on learning (Hayati, 2020). Mathematics is vital in advancing science and technology, serving as a tool for developing mindsets and attitudes (Prasetyo, 2022). The topic of time measurement is relevant to daily life, including determining when to go home from school, bedtimes, and other activities.

In the study conducted at Gemarang Elementary School, the researcher facilitated six learning sessions: three for the experimental class at Gemarang Elementary School and three for the control class at Ngale Elementary School. The research took place from November 18-23, 2024, and involved several stages, including questionnaires, pre-tests, and post-tests. Pre-tests were administered to assess students' initial abilities in mathematics. The experimental class completed a pre-test before engaging in Problem-Based Learning with Canva's interactive videos, while the control class took a pre-test prior to conventional learning. Post-tests for the experimental group were conducted after applying the PBL model, whereas the control group

received post-tests following traditional instruction. Learning activities for both groups included introductory, core, and closing stages.

The first stage involved preliminary activities, beginning with an introduction that connected new material to prior knowledge, followed by motivational ice-breaking activities to boost student enthusiasm. The core activities commenced with group formation, followed by the screening of an interactive video featuring a math problem-based story accessible via a scan barcode. These interactive videos aim to develop students' analytical skills and encourage them to seek solutions. Cahyadi (Karimah et al., 2023) emphasizes the importance of mathematics in education, noting that time measurement is particularly relevant to everyday life, such as determining when to return home from school or sleep. Subsequently, a learning video was shown to enhance students' understanding of the material and assist them in addressing the mathematical problems presented in the earlier video.

Figure 1. Math Problem Video

The session progressed with the viewing of an interactive Canva video that included problem-solving tasks to evaluate understanding and improve students' critical thinking skills. Canva's interactive media not only reinforces comprehension of the material but also elevates student engagement through technology-enhanced learning.

Following this, a learning video was presented to further clarify the concepts and assist students in resolving the math problems introduced in the previous video. The activities continued with students tackling questions related to time measurement on the Canva platform, as depicted in Figures 2 and 3.

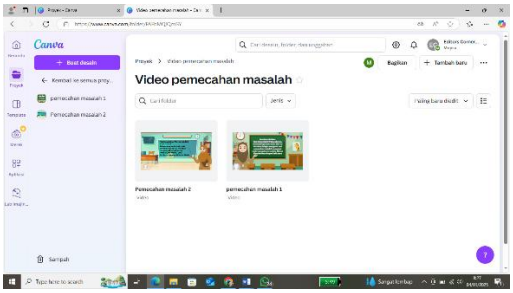

Figure 2. Platform Video Canva

Figure 3. Organizing students

Students then engage in a discussion about the problem presented in the video, following the steps outlined on their worksheets (see Figure 4). Next, they create a simple wall clock project using recycled cardboard supplied by the teacher. The final phase of this activity involves administering practice questions to evaluate students' understanding of time measurement, followed by a summary of the lesson, where students and teachers collaboratively draw

conclusions, offer feedback, and engage in follow-up discussions. The Problem-Based Learning model introduces challenges that motivate students to learn, making lessons more impactful and aiding them in problem-solving (Senja et al., 2024). This approach fosters the development of students' abilities and skills, ultimately enhancing their learning outcomes.

Figure 4. Problem-solving discussion and making a wall clock

In this study, all data were analyzed using the SPSS version 25 application. The results indicated no significant difference in student learning outcomes between the Problem-Based Learning model with Canva's interactive video media and the Contextual Model using concrete media. However, after implementing the Problem-Based Learning model through Canva's interactive videos, a significant difference in student learning outcomes was observed. This is evidenced by a significance value (2-tailed) of 0.000, which is less than 0.05, indicating an improvement following the application of the model. The N-Gain Test analysis revealed that the average score for the experimental class was 60.3690, signifying that the Problem-Based Learning model using interactive videos from Canva is highly effective in enhancing student learning outcomes. In terms of post-test scores, the experimental class achieved an average of 85.7, while the control class scored only 67.2. Thus, it can be concluded that implementing the Problem-Based Learning model through Canva's interactive videos significantly improves student learning outcomes compared to contextual models aided by concrete media. This finding aligns with Siswanto et al. (2024), which suggests that the Problem-Based Learning model enhances student learning outcomes more effectively than contextual models.

The Problem-Based Learning model emphasizes student engagement in solving problems (Silvi et al., 2020). The advantages of the PBL model include training students in problem-solving, fostering social solidarity through discussions, strengthening teacher-student relationships, and enhancing students' experimental skills (Rahmadani, 2017). However, one drawback of the PBL model, as noted by Rachmawati et al. (2021), is that it requires complex preparation, including tools, problems, and concepts. Teachers must carefully plan, manage, and evaluate the learning process due to its intricate nature. Canva’s interactive video feature simplifies the creation of engaging materials using available templates, making it accessible for all users, including those with smartphones (Lana et al., 2023). Canva greatly assists teachers in designing learning media, as highlighted by Wulandari (2022), by facilitating technology-based learning, enhancing skills, creativity, and providing various benefits. While Canva's interactive videos can render learning more engaging, the effectiveness of the Problem-Based Learning model may be hindered if student interest is low or if the material is not captivating (Ningsih, 2017).

Conclusion

The learning outcomes achieved through the Problem-Based Learning model using Canva's interactive videos show significant differences. Additionally, this model is effective in enhancing overall learning results. There is a notable distinction between the Problem-Based Learning model with Canva's interactive videos and the conventional model. By integrating the Problem-Based Learning model with interactive videos from Canva, this research offers a novel approach to encourage active student participation in learning. The study's findings indicate that Problem-Based Learning aids students in addressing problems, which in turn sharpens their thinking skills. Canva's interactive video media encourages students to engage actively in the learning process, making it more enjoyable. This engagement helps deepen their understanding of the material, resulting in improved learning outcomes. Canva's interactive video media effectively supports the first two steps of the Problem-Based Learning model. In step 1, it enhances student orientation to the problem by presenting issues in an engaging manner that piques their curiosity. Furthermore, in step 2, it assists in organizing students for learning through its interactive features, which provide initial guidance and help direct students in developing problem-solving strategies. Further research can evaluate whether the impact of the Problem Based Learning model with interactive Canva videos on learning outcomes persists in the long term and see how the application develops at the next level of research in different subjects and grade levels. This study has a suggestion that teachers need to design more interactive learning to strengthen students' understanding of the material. Teachers as educators can also implement the Problem Based Learning model through interactive Canva videos in class on the material to be taught.

References

Adhana, H. M. (2024). Development of Interactive Multimedia Based on Adobe Flash CS6 to Improve Learning Outcomes. *Jurnal Penelitian Pendidikan IPA*, *10*(SpecialIssue), 46–52. https://doi.org/10.29303/jppipa.v10ispecialissue.7838

Biantong, P. T., Arsyad, N., & Suroyo, S. (2023). The Effect of Puzzle Media on Learning Motivation and Mathematics Learning Outcomes in Elementary School Students. *EduLine: Journal of Education and Learning Innovation*, *3*(2), 149–154. https://doi.org/10.35877/454ri.eduline1509

Biassari, I., Putri, K. E., & Kholifah, S. (2021). *Jurnal basicedu*. *5*(4), 2322–2329.

Darmayanti, R., Sugianto, R., Baiduri, B., Choirudin, C., & Wawan, W. (2022). Digital comic learning media based on character values on students' critical thinking in solving mathematical problems in terms of learning styles. *Al-Jabar : Jurnal Pendidikan Matematika*, *13*(1), 49–66. https://doi.org/10.24042/ajpm.v13i1.11680

Dwidiarti, R. (2021). Model Problem Based Learning (PBL) untuk Meningkatkan Hasil Belajar Matematika tentang Pengukuran Waktu di Kelas II SDN Tamanasri. *JISIP (Jurnal Ilmu Sosial Dan Pendidikan)*, *5*(4), 1063–1068. https://doi.org/10.58258/jisip.v5i4.2538

Hana, N., Roshayanti, F., & Noer, H. (2023). *Peningkatan Hasil Belajar Matematika pada Materi Pengukuran Waktu Melalui Model Problem Besed Learning Siswa Kelas 2 SD Negeri Sawah Besar 01*. 1873–1880.

Hayati, T. umi faridah. (2020). Analisis Media Video Pembelajaran Menggunakan Aplikasi

Canva Dalam Pembelajaran Bangun Datar Di Sekolah Dasar. *Prosiding Seminar Nasional MIPA UNIBA 2022*, 8–15.

Helingo, S., Rahim, M., Husain, R. I., & ... (2023). Canva-Based Interactive Media to Increase Students' Interest in Learning Class V State Primary School 19 Dulupi. *Global Scientific …*, *22*(December), 73–87. http://scienticreview.com/index.php/gsr/article/view/317%0Ahttps://scienticreview.com/index.php/gsr/article/download/317/253

Hidayat, D. N., Nugraha, R. G., & Ali, E. Y. (2024). Pengembangan Video Pembelajaran Multimedia menggunakan Canva pada Pembelajaran Pendidikan Pancasila Kelas 4 SDN Sukamaju. *Ideguru: Jurnal Karya Ilmiah Guru*, *9*(3), 1511–1518. https://doi.org/10.51169/ideguru.v9i3.1163

Indarwati, D., Wahyudi, W., & Ratu, N. (2014). Peningkatan Kemampuan Pemecahan Masalah Matematika Melalui Penerapan Problem Based Learning Untuk Siswa Kelas V Sd. *Satya Widya*, *30*(1), 17. https://doi.org/10.24246/j.sw.2014.v30.i1.p17-27

Karimah, C. D., Cahyadi, F., & Subekti, E. E. (2023). Analisis Kesulitan Belajar Matematika Siswa Kelas Iii Pada Materi Pengukuran Waktu Sd Negeri Tlogosari Wetan 02 Semarang. *Jurnal Sinektik*, *4*(1), 19–31. https://doi.org/10.33061/js.v4i1.4634

Kharissidqi, M. T. (2022). Aplikasi Canva Sebagai Media Pembelajaran Yang Efektif. *Indonesian Journal Of Education and Humanity*, *2*(4), 108–113. http://ijoehm.rcipublisher.org/index.php/ijoehm/article/view/34

Kusumaningrum, A., Pramasdyahsa, A. S., & Wigati, T. (2023). *Seminar Nasional Pendidikan Profesi Guru Peningkatan Kerjasama melalui Model PBL Berbantu Media Puzzle Fun Kelas IV SDN Panggung Lor*. *November*, 2763–2771.

Lana, B., Miyono, N., & Rowati, S. (2023). 6. Penerapan Model Problem Based Learning Berbantuan Media Canva Meningkatkan Kemampuan Berpikir Kritis Kelas II SD Negeri Mijen 2 Demak. *Prosiding Seminar Nasional Pendidikan Profesi Guru*, 44–51.

Listyaningsih, E., Nugraheni, N., & Yuliasih, I. B. (2023). Peningkatan Hasil Belajar Melalui Pendekatan TarlModel PBL Dalam Matematika Kelas V SDN Bendan Ngisor. *Madani: Jurnal Ilmiah Multidisipline*, *1*(6), 620–627. https://doi.org/10.5281/zenodo.8139269

Marfu'ah, S., Zaenuri, Masrukan, & Walid. (2022). Model Pembelajaran Matematika untuk Meningkatkan Kemampuan Penalaran Matematis Siswa. *Prosiding Seminar Nasional Matematika*, *5*, 50–54. https://journal.unnes.ac.id/sju/index.php/prisma/

Nafiati, D. A. (2021). Revisi taksonomi Bloom: Kognitif, afektif, dan psikomotorik. *Humanika*, *21*(2), 151–172. https://doi.org/10.21831/hum.v21i2.29252

Ningsih, Y. L. (2017). Kemampuan Pemahaman Konsep Matematika Mahasiswa Melalui Penerapan Lembar Aktivitas Mahasiswa (LAM) Berbasis Teori APOS Pada Materi Turunan. *Edumatica*, *6*(1), 1–8.

Pedroso, J. E., RV S. SULLEZA, Keith Hae Moon C. FRANCISCO, Ayya Jade O. NOMAN, & Chynna Althea V. MARTINEZ. (2023). Unlocking the Power of Canva: Students' Views on Using the All-In-One Tool for Creativity and Collaboration. *Journal of Digital Learning and Distance Education*, *2*(2), 443–461. https://doi.org/10.56778/jdlde.v2i2.117

Pioke, F., Olilingo, F. Z., Saleh, S. E., Alam, H. V., Pakaya, A. R., Panigoro, M., & Hafid, R. (2023). Development of Android-Based Learning Media. *Jurnal Penelitian Pendidikan IPA*, *9*(7), 5584–5595. https://doi.org/10.29303/jppipa.v9i7.3982

Prasetyo, L. E. (2022). Kedisiplinan dalam Pembelajaran Matematika Daring pada Siswa SMA Negeri 8 Surakarta. *Jurnal Cendekia : Jurnal Pendidikan Matematika*, *6*(3), 2569–2583. https://doi.org/10.31004/cendekia.v6i3.1438

Pratiwi, W. P. (2023). Upaya Meningkatkan Hasil Belajar Matematika Melalui Penggunaan Media Pembelajaran Berbasis Aplikasi Canva Pada Siswa Kelas Vi Sdn 2 Glinggangan. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, *8*(1), 4497–4509. https://doi.org/10.23969/jp.v8i1.7891

Puspita, M., Slameto, S., & Setyaningtyas, E. W. (2018). Peningkatkan Hasil Belajar Matematika Siswa Kelas 4 Sd Melalui Model Pembelajaran Problem Based Learning. *Justek : Jurnal Sains Dan Teknologi*, *1*(1), 120. https://doi.org/10.31764/justek.v1i1.416

Rachmawati, N. L., Angganing, P., & Riyadi, S. (2021). Peningkatan Keaktifan Dan Hasil Belajar Siswa Melalui Model Problem Based Learning. *Educatif Journal of Education Research*, *4*(3), 1–8. https://doi.org/10.36654/educatif.v4i3.108

Rahayu, A. (2023). Interactive Digital Teaching Module Based on Differentiated Instruction and Its Impact on Students' Problem-Solving Skills. *Jurnal Penelitian Pendidikan IPA*, *9*(SpecialIssue), 1128–1136. https://doi.org/10.29303/jppipa.v9ispecialissue.5072

Rahmadani, N. (2017). Peningkatan Aktivitas Belajar Matematika Melalui Pendekatan Problem Based Learning Bagi Siswa Kelas 4 Sd. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, *7*(3), 241. https://doi.org/10.24246/j.scholaria.2017.v7.i3.p241-250

Sanjaya, W., Desyandri, D., Miaz, Y., & Rahmi, U. (2024). Innovation of Interactive Science Teaching Materials Based on Problem Based Learning Model through Learning Management System in Elementary School. *Jurnal Penelitian Pendidikan IPA*, *10*(7), 4442–4452. https://doi.org/10.29303/jppipa.v10i7.7802

Saputro, K. adi. (2021). Pemanfaatan Alat Peraga Benda Konkret Untuk Meningkatkan Motivasi Dan Hasil Belajar Matematika Di Sekolah Dasar. *Jurnal Basicedu*, *5*(4), 1735–1742. https://doi.org/10.31004/basicedu.v5i4.992

Senja, B. K., Medriati, R., & Putri, D. H. (2024). Development of a Problem Based Learning E-Module With the Assistance of Canva on the Matery of Balance and Rotational Dynamics To Grow Students' Interest in Learning. *Jurnal Pendidikan Matematika Dan IPA*, *15*(1), 1. https://doi.org/10.26418/jpmipa.v15i1.71909

Setiawati, A. (2024). *Kemampuan Pemecahan Masalah Matematis , Model Problem Based Learning , Platform Book Creator : Muatan Pembelajaran Inovatif Abad 21 Bagi Siswa Smp*. *7*(3), 555–566. https://doi.org/10.22460/jpmi.v7i3.23002

Setyani, B., Murtono, M., & Utomo, S. (2020). Pengaruh Model Pembelajaran PBL Terhadap Hasil Belajar Matematika Pada Siswa SDN Sari 1 Kelas V Kecamatan Gajah Kabupaten Demak. *VIVABIO: Jurnal Pengabdian Multidisiplin*, *2*(1), 28. https://doi.org/10.35799/vivabio.2.1.2020.28803

Siagian, H., Pangaribuan, J. J., & Silaban, P. J. (2020). Pengaruh Kemandirian Belajar Terhadap Hasil Belajar Matematika Siswa di Sekolah Dasar. *Jurnal Basicedu*, *4*(4), 1363–

1369. https://doi.org/10.31004/basicedu.v4i4.528

Silvi, F., Witarsa, R., & Ananda, R. (2020). Kajian Literatur tentang Kemampuan Pemecahan Masalah Matematika dengan Model Problem Based Learning pada Siswa Sekolah Dasar. *Jurnal Pendidikan Tambusai*, *4*(3), 3360–3368. https://www.jptam.org/index.php/jptam/article/view/851%0Ahttps://jptam.org/index.php/jptam/article/view/851

Simalungun, M. I. N. (2023). *Berbasis Karakter Islami Pada Mata Pelajaran Matematika Materi Pecahan Di Kelas Iii Sd / Mi*. *1*(1), 38–46.

Siswanto, D. H., Kuswantara, H., & Wahyuni, N. (2024). *Implementation of Problem Based Learning Approach Culturally Responsive Teaching to Enhance Engagement and Learning Outcomes in Algebraic Function Limit Material*. *12*(1), 80–88.

Suhendri, H. (2015). Pengaruh Metode Pembelajaran Problem Solving terhadap Hasil Belajar Matematika Ditinjau dari Kemandirian Belajar. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, *3*(2), 105–114. https://doi.org/10.30998/formatif.v3i2.117

Wahab, A., Junaedi, J., & Azhar, M. (2021). Efektivitas Pembelajaran Statistika Pendidikan Menggunakan Uji Peningkatan N-Gain di PGMI. *Jurnal Basicedu*, *5*(2), 1039–1045. https://doi.org/10.31004/basicedu.v5i2.845

Wulandari, T. (2022). Efektivitas Penggunaan Aplikasi CANVA sebagai Media Pembelajaran IPA MI/SD. *Jurnal Riset Madrasah Ibtidaiyah (JURMIA)*, *2*(1), 102–118. https://doi.org/10.32665/jurmia.v2i1.245

Zakiah, K. N., Kurniasih, & Saryati, T. (2023). Upaya Peningkatan Hasil Belajar Peserta Didik Pada Pembelajaran Matematika di Kelas III dengan Menerapkan Model Problem Based Learning (PBL). *Pedadidaktika: Jurnal Ilmiah Pendidikan Guru Sekolah Dasar*, *10*(2), 242–253.