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The Effect of the PBL Model with SALACCA Media (Snakes and Ladders with QR Code Cards) on Learning Outcomes and Critical Thinking Skills of Elementary School Students

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ABSTRACT: The problems that occur at Kunir Lor 01 State Elementary School in Pancasila Education learning are that students' learning outcomes are not optimal, students' critical thinking skills tend to be weak, teachers are the center of learning, teaching materials only use textbooks, and the use of learning models and media that are less innovative. Therefore, this study aims to examine the effect of the PBL model with SALACCA (Snakes and Ladders with QR Code Cards) media to improve learning outcomes and critical thinking skills in elementary school students. This type of research is an experimental study (True Experimental) using a Pretest-Posttest Control Group Design. The data analysis method used t-test or independent samples test with SPSS 27 software for windows. The results of the data analysis of the learning outcomes and critical thinking skills of the experimental class students showed higher than the average value of the control class. This is reinforced by the calculation of the hypothesis test which states that the students' learning outcomes obtained a significance value (2-tailed) of 0.002 and the critical thinking skills obtained a significance value (2-tailed) of 0.001 so that both are less than 0.05, it is proven that there is a difference between the average learning outcomes and critical thinking skills of the experimental class students and the control class. Thus, it can be concluded that the PBL model with SALACCA media has a significant effect on the learning outcomes and critical thinking skills of students in Elementary School.

KEYWORDS: Critical Thinking Skills, Learning Outcomes, PBL Model, SALACCA Media.

INTRODUCTION

Education plays a crucial role in developing all the potential needed to apply these abilities in daily life and adapt to the rapid development of technology. One way to improve the quality of education is through improved learning (Sandra & Nurbaiti, 2022). Teachers must be able to plan and manage learning using appropriate strategies, models, methods, and media to help students understand the subject matter easily. Furthermore, teachers must be able to design creative and innovative learning and create a learning environment that fully engages students to improve their learning outcomes and critical thinking skills.

Learning outcomes are the results achieved by students, encompassing attitudes, knowledge, and skills based on their learning experiences during learning activities (Novita & Sundari, 2020). The general learning outcome profile of students at Kunir Lor 01 Public Elementary School in the Pancasila Education subject is not optimal. Based on the observation results of the Odd Semester Mid-Summative Assessment (STS) formative exam for grade VI at Kunir Lor 01 Public Elementary School, namely in grade VI A there were 30.77% or equivalent to 8 students and in grade VI B there were 26.92% or equivalent to 7 students who scored below the KKM, namely 75. According to Fatmawati (2011:26) in Nurcahyani, et al. (2023) a class can be said to be complete if there is a percentage of 80% of the total number of students in the class getting a score ≥75. Based on this description, it can be interpreted that student learning outcomes in the Pancasila Education subject at Kunir Lor 01 Public Elementary School are still not optimal and require further study.

Critical thinking is an intellectual process to conceptualize, apply, synthesize, and/or assess knowledge obtained through observation, experience, reflection, thinking, or communication as a basis for belief and action (Lismaya, 2019). Based on the results of observations of grade VI A and VI B students at Kunir Lor 01 Public Elementary School, it shows that students' critical thinking skills in Pancasila Education learning still tend to be weak. This is because the Pancasila Education learning process seems monotonous and conventional. This is in accordance with the opinion of Mukhlisotin (2022) that students who only listen to teacher explanations will not develop their critical thinking skills well. In addition, the lack of use of innovative and interactive learning

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media in Pancasila Education subjects so that teachers tend to use textbooks more often as their teaching materials. Thus, students' critical thinking skills in Pancasila Education learning at Kunir Lor 01 Public Elementary School need to be studied and improved.

One learning model that can actively engage students, especially in Pancasila Education subjects, is the Problem-Based Learning (PBL) model. This learning model can encourage students to be active and create a collaborative atmosphere so that students are expected to be able to process to find solutions to problems. In its implementation, this PBL model can be integrated with the use of learning media. This supports the statement of Atminingsih et al., (2019) that the PBL learning model will be optimally achieved, when combined with the use of learning media. One media that can be applied in the learning process in the classroom is game-based media. One innovation in game-based learning media that has been successfully created by researchers is the SALACCA learning media (Snakes and Ladders with QR Code Cards).

The SALACCA (Snakes and Ladders with QR Code Cards) game is a development of the traditional Snakes and Ladders game using QR code technology. Every 30 steps in this game are equipped with QR code cards numbered 1 through 30, corresponding to the numbers on the Snakes and Ladders game boxes. Students must open the QR code card that corresponds to the number on each step. Therefore, using QR codes as a learning medium is an alternative way to develop the learning process by introducing simple technology through students' mobile phones.

Based on the explanation above, the PBL model and the SALACCA (Snakes and Ladders with QR Code Cards) media can be integrated into learning to enhance the quality of learning activities. Therefore, the PBL model with the SALACCA (Snakes and Ladders with QR Code Cards) media represents an innovative combination of model and media to support learning.

Based on the above description, the importance of the PBL model with the SALACCA (Snakes and Ladders with QR Code Cards) media in relation to student learning outcomes and critical thinking skills needs to be examined in research. This means that a research study is needed with the title "The Effect of the PBL Model with SALACCA Media (Snakes and Ladders with QR Code Cards) on Learning Outcomes and Critical Thinking Skills of Students in Elementary Schools".

METHOD RESEARCH

This type of research is experimental research (True Experimental). The research design used is Pretest-Posttest Control Group Design. The instrument to measure the learning outcomes and critical thinking skills of students in this study is a test and is expressed in the form of values/scores obtained from the results of the students' pretest and posttest. The experimental and control groups were given an initial test (pretest), to measure the initial conditions of each group. Next, the experimental group was given treatment using the PBL model with SALACCA (Snakes and Ladders with QR Code Cards) media, while the control group only used conventional learning methods. After the treatment was given, both groups were given a final test (posttest) with the same measuring instrument as the pretest. The sample in this study were students of grades VI A and VI B of Kunir Lor 01 Public Elementary School. The number of students in grades VI A and VI B was 26 students each. Class VI A was determined as the experimental class and class VI B was determined as the control class.

RESULTS AND DISCUSSION

The data analysis method used a t-test or independent samples test with SPSS 27 for Windows software. The results of the data analysis of the learning outcomes and critical thinking skills of students in the experimental class showed higher scores than the average scores obtained in the control class. The following are the results of the hypothesis test of student learning outcomes in the experimental and control classes.

Table I. Hypothesis Test of Student Learning Outcomes

Group Statistics

	Classes	N	Mean	Std. Deviation	Std. Error Mean
Learning Outcomes	Control	26	78.27	5.990	1.175
	Experimental	26	84.42	7.393	1.450

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Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Learning Outcomes	Equal variances assumed	1.305	.259	-3.298	50	.002	-6.154	1.866	-9.902	-2.406
	Equal variances not assumed			-3.298	47.940	.002	-6.154	1.866	-9.906	-2.402

(**Source:** Data processed by researchers, 2025)

Based on table I, the data analysis of the experimental class's learning outcomes obtained an average value of 84.42, which is higher than the average value of the control class, which is 78.27. This is reinforced by the calculation of the hypothesis test which states that student learning outcomes obtain a significance value (2-tailed) of 0.002, which is less than 0.05, which means $H_0 1$ is rejected and $H_a 1$ is accepted, so it is proven that there is a difference between the average learning outcomes of students in the experimental class and the control class. Thus, this study can be concluded that there is a significant influence of the PBL model with SALACCA (Snakes and Ladders with QR Code Cards) media on the learning outcomes of grade VI students in Pancasila Education subjects in Elementary Schools. This is in accordance with research from Setyowati, D., et al. (2023) that the application of the PBL model assisted by snakes and ladders media can improve student learning outcomes.

The results of the hypothesis test on students' critical thinking skills in the experimental and control classes are as follows:

Table II. Hypothesis Test on Students' Critical Thinking Skills

Group Statistics

	Classes	N	Mean	Std. Deviation	Std. Error Mean
Critical Thinking Skills	Control	26	76.62	8.931	1.752
	Experimental	26	86.69	7.380	1.447

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	Df	Sig. (2tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Critical Thinking Skills	Equal variances assumed	.944	.336	-4.435	50	<,001	-10.077	2.272	-14.641	-5.513
	Equal variances not assumed			-4.435	48.284	<,001	-10.077	2.272	-14.645	-5.509

(**Source:** Data processed by researchers, 2025)

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Based on table II, the data analysis of students' critical thinking skills in the experimental class obtained an average value of 86.69, which is higher than the average value of the control class, which is 76.62. This is reinforced by the calculation of the hypothesis test which states that students' critical thinking skills obtain a significance value (2-tailed) of 0.001, which is less than 0.05, which means $H_0 2$ is rejected and $H_a 2$ is accepted, so it is proven that there is a difference between the average critical thinking skills of students in the experimental class and the control class. Thus, this study can be concluded that there is a significant influence of the PBL model with SALACCA (Snakes and Ladders with QR Code Cards) media on the critical thinking skills of grade VI students in Pancasila Education subjects in Elementary Schools. This is in accordance with research from Mustikawati (2024) that there is a significant influence of the PBL model assisted by the snake and ladder board game in PPKn learning on students' critical thinking skills in elementary schools.

The PBL model using SALACCA media is highly effective in improving student learning outcomes. This was evident during the treatment in the experimental class, where students were highly enthusiastic, and learning became lively, with high levels of student engagement in problem-solving and formative questions on QR code cards, fostering strong collaboration within their study groups. In accordance with the opinion of Muraray-Harvey et al. (2013), one way to create active learning is by implementing a problem-based learning model. This is also in line with the theory developed by Glatthorn and Craft-Tripp (in Pecore, 2012), which states that Problem-Based Learning is a learning model based on constructivism theory that makes students interested in learning and always actively participate in the learning process. The researchers' innovation in integrating the SALACCA game into the PBL steps is an effective combination for creating an active, engaging, and educational learning environment.

Besides functioning as a medium for play, SALACCA media is also highly effective for learning and enhancing students' education in Pancasila Education. The SALACCA model consists of 30 steps, each accompanied by a QR code containing a collection of materials and formative questions related to the topic "Maintaining Unity and Oneness through Mutual Cooperation." Research by Oktafia & Fitrayati (2024) found a significant difference in learning outcomes between students taught using the Snakes and Ladders model and those who were not.

The PBL model with the SALACCA model is highly effective in improving students' critical thinking skills. Implementing the PBL model allows students to construct their own knowledge, skills, and experience in problem-solving. This is in line with the opinion of Huijser et al. (2024) who stated that in PBL implementation, students are accustomed to searching for, analyzing, synthesizing, and applying information to solve problems with teacher guidance. Thus, students are accustomed to critical thinking and problem-solving in learning activities.

Here, the teacher plays a crucial role in the learning process, being responsible for the learning process. As Mahajan & Singh in Anggraheni et al. (2024) that teachers have a significant impact on learning outcomes because they interact directly with students. In 21st-century education, teachers need to implement innovative, creative learning and integrate digital devices along with technological advances. The use of SALACCA media in experimental classes can facilitate students to learn Pancasila Education material, and present high-level analytical questions that can train students to always think critically, all packaged in a game. Here, the teacher acts as a facilitator during group discussions, and as a stakeholder when students experience difficulty in scanning QR code cards.

CONCLUSION AND SUGGESTIONS

Based on the data processing and analysis, the following conclusions can be drawn:

1. The PBL model using SALACCA (Snakes and Ladders with QR Code Cards) as the medium significantly impacts student learning outcomes in elementary schools.
2. The PBL model using SALACCA (Snakes and Ladders with QR Code Cards) as the medium significantly impacts students' critical thinking skills in elementary schools.

Based on the research conclusions, there are several suggestions, namely:

1. Teachers are encouraged to utilize the PBL model with SALACCA media in Pancasila Education and other subjects to address classroom issues, particularly those related to low student learning outcomes and critical thinking skills, thereby improving the quality of classroom learning.

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2. For other researchers, this study can serve as a reference for conducting other relevant research. It is hoped that innovations in the development of other interactive models and media will improve learning outcomes and critical thinking skills in elementary school students.

REFERENCES

1. Sandra, E., Theresia, M., & Nurbaiti. (2022). Pengaruh Model Pembelajaran Kooperatif Tipe Teams Games Tournament
2. (TGT) Terhadap Hasil Belajar Matematika Materi Bangun Ruang Kelas V SD Muhammadiyah 1 Padangsidimpuan. *JIPDAS (Jurnal Ilmiah Pendidikan Dasar) Institut*, *2*(2),22–28. https://doi.org/https://doi.org/10.37081/jipdas.v2i2.319
3. Nurcahyani, F., Basori, M., & Sahari, S. (2023). Pengembangan Media Ular Tangga Pada Pembelajaran PPKn Materi Pancasila Untuk Kelas IV Sekolah Dasar. In *Prosiding SEMDIKJAR (Seminar Nasional Pendidikan dan Pembelajaran)* (Vol. 6, pp. 1429-1435).
4. Lismaya, L. (2019). *Berpikir Kritis & PBL (Problem Based Learning)*. Media Sahabat Cendekia.
5. Mukhlisotin, F. A. (2022). Pengaruh Model Pembelajaran Project Citizen terhadap Kemampuan Berpikir Kritis Siswa pada Mata Pelajaran Pendidikan Pancasila dan Kewarganegaraan. *Jurnal Ilmiah Pendidikan Pancasila dan Kewarganegaraan*, 7(1), 214. https://doi.org/10.17977/um019v7i1p214-227
6. Atminingsih, D., Wijayanti, A., & Ardiyanto, A. (2019). Keefektifan Model Pembelajaran PBL Media Audio Visual Terhadap Hasil Belajar IPA Kelas III SDN Baturagung. *Mimbar PGSD Undiksha*.7 (2), Pissn 2614-4727, e-ISSN 26144735. https://ejournal.undiksha.ac.id/index.php/JJPGSD
7. Setyowati, D., Prayito, M., & Djama'i, N. (2023). 221. Penerapan Model PBL Berbantuan Media Ular Tangga Terhadap Hasil Belajar Siswa Kelas IV SD 2 Mijen. In *Prosiding Seminar Nasional Pendidikan Profesi Guru* (Vol. 1, No. 1, pp. 19751985). https://conference.upgris.ac.id/index.php/psnppg/article/view/4250
8. Mustikawati, D. (2024). *Pengaruh Model Problem Based Learning Berbantuan Board Game Ular Tangga pada Pembelajaran PPKn terhadap Kemampuan Berpikir Kritis Peserta Didik Kelas III SD Negeri 1 Metro Pusat.* FKIP, Universitas Lampung. http://digilib.unila.ac.id/79825/
9. Pecore, J. L. (2012). Beyond beliefs: teachers adapting problem-based learning to preexisting systems of practice. *Interdisciplinary Journal of Problem Based Learning*, 7(2), 8-30.
10. Murray-Harvey, R., Pourshafie. T., & Rayes, S. W. (2013). What teacher education students learn about collaboration from problem-based learning. *Journal of Problem Based Learning in Higher Education,* 1(1), 114-134.
11. Oktafia, M. A., & Fitrayati, D. (2024). Pengembangan Media Pembelajaran Ular Tangga Berbasis Gamifikasi Pada Mata Pelajaran Ekonomi. *Jurnal Pendidikan Ekonomi (JURKAMI)*, *9*(1), 33-42.
12. Anggraheni, B., Utaminingsih, S., & Ismaya, E. A. (2024). The Effectiveness of Problem-Based Learning Snakes and Ladder Media in Social Studies for Class V Elementary School. *ASEANA Science and Education Journal*, *4*(1), 21-27.

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