The Effect of Problem Based Learning (PBL) with the Help of LKPD on Students' Creative Thinking Ability

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Abstract

The purpose of this study is to analyze the effect of problem-based learning (PBL) with the help of LKPD on students' creative thinking skills. The research method on research is experimental. This research was conducted in two different groups, namely grade 4 students of SDN Selorejo 1 totaling 32 students as an experimental group and grade 4 students of SDN Tladan 1 totaling 32 students as a control group. The questionnaire instrument is used to determine students' creative thinking skills. Furthermore, the data was analyzed using an independent sample t-test with the help of the SPSS 26 application. Based on the results of the study shows the value of sig. $0.000 < 0.05$. Thus the null hypothesis is rejected and the research hypothesis is accepted. This means that there is an influence of problem-based learning (PBL) with the help of LKPD on students' creative thinking skills.

Keywords: Problem Based Learning; LKPD; Think Creatively

Introduction

Education has an important role in human life, because education can create quality and character people who have broad insight so that they can achieve an expected goal. National Education, states that education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, morals, and skills needed by themselves, society, nation, and state. One important aspect of education is learning. Learning is the activity of achieving certain goals by having conversations with teachers, students, and learning resources (Ayunda et al., 2023)

Learning in the 4.0 era requires 4C skills, namely creative thinking, critical thinking and problem solving, communication, and collaboration. In the learning process, one of the skills developed is creative thinking skills. Creative thinking is a process used to generate ideas or concepts as solutions to problems.

Creative thinking skills involve the ability to present innovative solutions to solve problems and create something unique (Marliani, 2015). According to Al-Tabany (2017), the main problem in formal education is the low level of student involvement in creative thinking. Although students' creativity can

be enhanced through practice, the reality is that learning is still often dominated by lecture and memorization methods, providing less room for students to think higher-order, including creative thinking. Handayani &; Koeswanti (2023); Utomo et al. (2014) also noted that the current learning process tends to be mastered by the role of the teacher, resulting in a lack of independent development of students in creative thinking and discovery.

To overcome this, it is necessary to apply learning models to improve creative thinking, one of which is the Problem Based Learning (PBL) learning model. The Problem Based Learning model or known as the problem-based model is one of the learning models applied in the 2013 curriculum. The Problem Based Learning model is a learning model that uses real-world problems as a context for students to learn about creative thinking and problem-solving skills, as well as to obtain knowledge that is the essence of the subject (Komalasari, 2023). The Problem Based Learning model aims to help students develop / improve creative thinking skills, foster student initiative in work, internal motivation in learning, and can develop interpersonal relationships in problem solving skills in group work (Rusman, 2017).

The use of student worksheets (LKPD) is one of the means of succeeding student learning through *a problem-based learning learning model*. According to Gabriella (2021), LKPD is a learning media/tool that contains sheets with instructions for tasks that must be completed by students. This LKPD is used to support and facilitate learning activities in order to create a more efficient communication between a teacher and students and improve student learning outcomes (Iltavia et al., 2022). The use of LKPD in science learning is also in accordance with the nature of science as a method of inquiry and thinking, and its implementation requires behavioral guidelines so that activities are directed and organized scientifically (Yunianti &; Admoko, 2016)

LKPD is used in problem-based learning models. LKPD contains the stages of implementing the problem-based learning model. Based on the problem-based learning model, the LKPD stage is a problem-oriented stage for students, where LKPD presents problem material in the form of examples, phenomena, or stories to motivate students to work on problems. Looking at it thoroughly, where learning in LKPD which has a PBL base is able to show a skill of mastery of KBM that is better when compared to students in the control class where they will get a conventional learning. This PBL-based LKPD can help students observe in a real way the existence of a material they have learned, provide a facility for knowledge acquisition and the ability to be able to answer a question. Based on the description above, researchers are interested in examining the effect of the LKPD-assisted *Problem Based Learning* (PBL) learning model on students' creative thinking skills.

Methode

The research method on research is experimental. This research was conducted in two different groups, namely grade 4 students of SDN Selorejo 1 totaling 32 students as an experimental group and grade 4 students of SDN Tladan 1 totaling 32 students as a control group. The research design used was *posttest only control design* (Sugiyono, 2017). Data collection techniques use questionnaires and posttest questions. Then after obtaining the data, data analysis was carried out using normality tests and hypothesis tests, with *independent sample t-tests.*

Results and Discussion

The results of the study are contained from data collection based on research that has been carried out. The results of this study were in the form of test scores from two class samples. The test used is carried out at the beginning of learning *(pretest)* and after carrying out learning (*posttest)*. The following are the results of the researcher:

Table 1. Data Description

	N	Min	Max	Mean	Std. Dev
Pretest Eksperiment	32	51	56	54.44	1.435
Postest Eksperiment	32	55	60	57.84	1.167
Pretest control	32	51	56	53.56	1.366
Postest control	32	52	58	54.81	1.533

Based on the table above, the mean pretest value of the experimental group is 54.44 and the experimental group postest is 57.84. While the mean value of the control group pretest was 53.56 and the contir group postest was 54.81.

Table 2. Normality Test

	Shapiro-Wilk		
	Statistic	df	Sig.
Pretest Eksperiment	.879	32	.076
Postest Eksperiment	.933	32	.084
Pretest control	.895	32	.055
Postest control	.902	32	.073

Based on the data above, it can be concluded by looking at the *sig* value, if *sig>0.05 means that the data is normally distributed. The sig* in the experimental group pretest above showed a value of 0.076, while the experimental group postest was 0.084. For the control group when the pretest obtained *a sig* value of 0.055, and in the postes the control group was 0.073. Based on these data, it shows a Sig value which means greater than 0.05 so that it can be concluded that the data is normally distributed.

Table 3. Homogeneity Test

		Levene Statistic	df1	df2	Sig.
Creative Thinking	Based on Mean	2.072	1	62	.155
	Based on Median	1.461	1	62	.231
	Based on Median and with adjusted df	1.461	1	58.428	.232
	Based on trimmed mean	2.131	1	62	.149

Based on the data, it can be concluded by looking at the *sig* value, if *sig>0.05 means that the data is Homogeneous. The sig* above shows a value of 0.155 which means it is greater than 0.05. So it can be concluded that the variant is Homogeneous.

Table 4. Hypothesis Test

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pretes Kreatif - Postets Kreatif	9.828	2.465	.324	10.476	9.180	30.366	57	.000

The calculation results of data analysis show that the Sig (2-tailed) 0.000 <0.05. Thus the null hypothesis is rejected and the research hypothesis is accepted. This means that there is an influence of problem-based learning (PBL) with the help of LKPD on students' creative thinking skills

Problem-based learning is an approach to learning that uses real-world problems as a context for critical thinking and problem-solving skills, as well as to acquire essential knowledge and concepts from the subject matter. PBL has the characteristics that learning is oriented to problems, with syntax, namely: orienting students to problems, organizing students to learn, guiding individual and group investigations, developing and presenting works and exhibiting them, analyzing and evaluating the problem-solving process (Hindrasti &; Prayitno, 2014)

The stages of the PBL model can improve students' creative thinking skills and learning outcomes. This is reinforced by the results of research conducted by (Khoiri et al., 2013) which showed that the PBL model can improve students' creative thinking ability, and the average increase in creative thinking ability of experimental class students is better than the average increase in creative thinking ability of control class students. The results of Noviar & Hastuti (2015) showed that the PBL model based on scientific approach significantly improved biology learning outcomes in the cognitive, affective, and psychomotor domains of students.

The problem-based learning model is a model that makes problems its main point (hasmiati). This problem-based learning is an approach method that is needed in determining a problem that is real or true experienced by students, able to express what students know and can allow that students are able to expand their knowledge and be able to walk more independently with a more positive attitude to themselves.

Students' creative thinking skills are stimulated when thinking of the best solution to solve problems. Increasing the ability to think creatively or student learning outcomes is supported by the theory put forward by Ausubel which states that learning is a meaningful assimilation, in the selection of material must be meaningful and in accordance with the level of development of students. The selection of problems that are in accordance with the level of student development will make students interested in solving them and students' ability to think creatively and learning outcomes can increase.

Conclusion

The calculation results of data analysis show that the Sig(2-tailed) 0.000 <0.05. Thus the null hypothesis is rejected and the research hypothesis is accepted. This means that there is an influence of problem-based learning (PBL) with the help of LKPD on students' creative thinking skills

References

Al-Tabany, T. I. B. (2017). *Mendesain model pembelajaran inovatif, progresif, dan konteksual*. Prenada Media.

Ayunda, S. N., Lufri, L., & Alberida, H. (2023). Pengaruh Model Pembelajaran Problem Based Learning (PBL) Berbantuan LKPD terhadap Kemampuan Berpikir Kritis Peserta Didik. *Journal on Education*, *5*(2), 5000–5015.

Handayani, A., & Koeswanti, H. D. (2021). Meta-Analisis Model Pembelajaran Problem Based Learning (PBL) Untuk Meningkatkan Kemampuan Berpikir Kreatif. *Jurnal Basicedu*, *5*(3), 1349–1355. https://doi.org/10.31004/basicedu.v5i3.924.

Hindrasti, N. E. K., & Prayitno, B. A. (2014). Pengaruh Model Problem Based Learning Dengan Metode Eksperimen Disertai Teknik Roundhouse Diagram Dan Mind Map Terhadap Hasil Belajar Biologi Ditinjau Dari Gaya Belajar Dan Motivasi Belajar Siswa. *Inkuiri*, *3*(2).

Iltavia, I., Yurnalis, Y., & Rahmi, F. (2022). The Practically Level of Students' Worksheets on Parabolic Materials Based on Guided Discovery. *Jurnal Ilmiah Pendidikan Matematika Al Qalasadi*, *6*(1), 1–8.

Khoiri, W., Rochmad, R., & Cahyono, A. N. (2013). Problem based learning berbantuan multimedia dalam pembelajaran matematika untuk meningkatkan kemampuan berpikir kreatif. *Unnes Journal of Mathematics Education*, *2*(1).

Komalasari, D. (2023). Manajemen Pembelajaran Mengenal Bentuk Geometri Berbasis Sentra Balok Dalam Meningkatkan Berpikir Kreatif Peserta Didik. *WALI PIKIR: Journal of Education*, *1*(1), 1–12.

Marliani, N. (2015). Peningkatan kemampuan berpikir kreatif matematis siswa melalui model pembelajaran missouri mathematics project (MMP). *Formatif: Jurnal Ilmiah Pendidikan MIPA*, *5*(1).

Nonik Gabriella, M. (2021). Pengembangan LKPD Berorientasi Problem Based Learning (Pbl) Untuk Meningkatkan Keterampilan Beripikir Kritis Pada Materi Hidrokarbon. *UNESA Journal of Chemical Education*, *10*(2), 103–112.

Noviar, D., & Hastuti, D. R. (2015). Pengaruh model problem based learning (pbl) berbasis scientific approach terhadap hasil belajar biologi siswa kelas x di sma n 2 banguntapan ta 2014/2015. *Bioedukasi: Jurnal Pendidikan Biologi*, *8*(2), 42–47.

Rusman, M. P. (2017). *Belajar & Pembelajaran: Berorientasi Standar Proses Pendidikan*. Prenada Media.

Utomo, T., Wahyuni, D., & Hariyadi, S. (2014). Pengaruh model pembelajaran berbasis masalah (problem based learning) terhadap pemahaman konsep dan kemampuan berpikir kreatif siswa (siswa kelas VIII Semester Gasal SMPN 1 Sumbermalang Kabupaten Situbondo Tahun Ajaran 2012/2013). *Jurnal Edukasi*, *1*(1), 5–9.

Yunianti, A. U., & Admoko, S. (2016). Penerapan Model Guded Discovery untuk Meningkatkan Keterampilan Berpikir Kritis pada Materi Kalor di SMA Khadijah Surabaya [Application of Guided Discovery Model to Improve Critical Thinking Skills on Heat Material at Khadijah High School Surabaya]. *J. Inov. Pendidik. Fis*, *5*(3), 120–126.

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