

The Effectiveness of *Problem-Based Learning* Model on Creative Thinking Skills in Class V Elementary School in Wonogiri Sub-District



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ABSTRACT: IPAS learning requires creative thinking skills in the teaching and learning process. This study aims to determine the effectiveness of the Problem Based Learning learning model on creative thinking skills in grade V IPAS subjects. This type of research is quantitative research. The research sample was 92 fifth grade students in Wonogiri sub-district public elementary schools. Data analysis was carried out using simple linear regression analysis techniques. The results showed the correlation value (R) = 0.471, meaning that there is a positive linear relationship between variables; the coefficient of determination R Square = 0.779, meaning that the Problem Based Learning learning model provides 77.9% influence on the effectiveness of creative thinking skills. The significant value of $0.000 < 0.05$ and the t value of $2.692 > t$ table 1.662, meaning that it accepts the alternative hypothesis. The research conclusion is that the Problem Based Learning learning model is effective in developing creative thinking skills in grade V IPAS subjects.

KEYWORDS: Problem Based learning, skills, creative thinking.

INTRODUCTION

Skills are a form of individual achievement. In the 21st century, skills are the focus for labeling or criteria for students. Asrori (2020) explains that skills are behaviors that are acquired through stages of learning. Meanwhile, according to Nasihudin and Hariyadin (2021) skills are the ability to carry out a particular task, both physically and mentally. This skill involves the use of thoughts, ideas, and creativity. Meanwhile, according to Zubaidah (2016), skills are abilities that are implemented in the implementation of work or activities. These skills are formed from experience and the learning process. Skills are the ability to perform specific tasks obtained through consistent practice. Skills do not appear automatically, but need to be developed deliberately through repeated practice (Hayati, 2018). Based on the opinions of the experts above, it can be concluded that skills are the ability to carry out certain tasks involving thoughts, ideas, and creativity that are formed based on experience or repeated practice.

Creative thinking can be defined as the ability to think to find, generate, develop original, aesthetic, constructive ideas or results related to views, concepts, where the emphasis is on intuitive and rational aspects of thinking, especially in using information and materials to bring up or explain them with the thinker's original perspective (Putra *et al.*, 2016). According to Agustina and Noor (2016), creative thinking is a person's ability to generate new, unique, and relevant ideas to solve problems or create something innovative. According to Situmorang *et al.* (2020), creative thinking is an individual activity to obtain a series of new and original ideas from concepts, experiences, and knowledge that have been obtained. Therefore, it can be synthesized that creative thinking skills are abilities obtained through stages of learning and experience to produce new and relevant ideas or ideas to solve problems or create innovative.

Creative thinking skills in primary school-age children are an important foundation for their growth and development. Creative thinking in learners can improve the ability to solve problems, brain development and thus improve overall cognitive abilities. In addition, creative thinking can also help learners to adapt to an ever-changing environment. According to Rizqi *et al.* (2021) creative thinking includes 4 aspects of ability including: (a) fluency, namely the ability to answer problems precisely; (b) flexibility, namely the ability to answer problems through non-standard ways; (c) originality, namely the ability to answer problems using your own language, methods, or ideas; and (d) elaboration, namely the ability to expand problem answers, raise new

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problems or ideas. Therefore, it is necessary to foster creative thinking for students, especially at the elementary school level. Growing the creative thinking process of students requires an effective and efficient learning model. One of the learning models that can be used to foster creative thinking patterns is the *Problem Based Learning* (PBL) learning model.

The Problem Based Learning (PBL) model is a set of teaching models that use problems as a focus for developing problem-solving skills, materials, and self-regulation (Hasmyati, 2017). PBL is a learning approach that uses real-world problems as a context for students to learn about critical thinking, creative and problem-solving skills, as well as to gain essential knowledge and concepts from the subject matter (Nafiah, 2014). PBL is a learning model whose main starting point is the problem and how to solve it. This learning model emphasizes solving problems given by the teacher based on information that students have (Rahmasari, 2016).

Problem Based Learning (PBL) is a learning model in which students are faced with a real problem that has been experienced by students. Widiaworo (2018: 149) argues that the problem-based learning model is a teaching and learning process that presents contextual problems so that students are stimulated to learn. The problem is faced before the learning process takes place so that it can trigger students to research, describe and find solutions to the problem (Ardianti *et al.*, 2021). According to some of the above opinions, it can be synthesized that the *Problem Based Learning* (PBL) learning model is a learning model that uses problems that exist around the students' environment to foster critical and creative thinking patterns in order to solve or solve a problem given by the teacher. *The Problem Based Learning* (PBL) learning model has steps in the learning process, namely (Maryati, 2018): 1) Orienting students to the problem; 2) Organize students to research; 3) Assist independent and group investigations; 4) Develop and present work; and 5) Analyze and evaluate the problem-solving process. This learning model is expected to be able to foster the creative thinking process of students.

Based on the description above, this study can formulate the *problem* formulation, namely whether the *Problem Based Learning learning* model is effective on creative thinking skills in grade V IPAS subjects in Wonogiri sub-district public elementary schools. This study aims to determine the effectiveness of the *Problem Based Learning learning* model on creative thinking skills in grade V IPAS subjects.

METHODS

This research uses a type of quantitative research with a true experimental method. Quantitative research is an investigation of social problems based on testing a theory consisting of variables, measured by numbers, and analyzed by statistical procedures to determine whether the predictive generalizations of the theory are true (Creswell, 2022).

This study uses a population in the form of all fifth grade students in Wonogiri sub-district public schools. The sampling technique uses *random sampling* technique or random. The results of sampling obtained a total of 92 fifth grade students in Wonogiri sub-district State Elementary School. Data collection techniques with descriptive tests that have been tested for validity, reliability, level of size, and differentiating power. Data analysis used simple linear regression analysis and hypothesis testing with Independent Sample t-test to determine the effectiveness of the *Problem Based Learning learning* model on creative thinking skills.

RESULTS AND DISCUSSION

The results of the research on the effectiveness of the *Problem Based Learning learning* model on creative thinking skills in class V IPAS subjects in Wonogiri sub-district public elementary schools are described as follows:

Descriptive Statistical Analysis

Descriptive statistical analysis aims to provide an overall description of the data used in the study, by paying attention to the average value, standard deviation, variance, maximum value, minimum value and total.

Table 1. Table of Descriptive Statistical Test Results

Paired Samples Statistics		Mean	N	Mini mum	Maxi mum	Std. Deviation	Std. Error Mean
Teacher Professional	Pretest	58.78	6	42	81	11,3 45	2,5 67
	Posttest	80.56	6	67	98	10,9 86	2,2 48

Table 1 shows that the average pretest score of the experimental class is known to be different from the average posttest score. The average pretest score was 58.78 and the average posttest score was 80.56. The average score of the experimental class

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increased by 21.78. Thus it can be concluded that the *Problem Based Learning learning* model has had a positive impact on the IPAS learning process in class V at State Elementary Schools in Wonogiri sub-district.

Simple Linear Regression Test

Simple linear regression test is a statistical method used to measure how much influence one variable (independent variable) has on another variable (dependent variable) in the form of a straight line. Based on the results of the SPSS output, it is known that the correlation value (r) between the independent variable of the *Project Based Learning* model and the dependent variable of students' creative thinking skills in class V IPAS lessons is 0.471. This can be interpreted that there is a positive linear relationship between the two variables, if the value of the independent variable increases, it is likely that the value of the dependent variable will also increase. In addition, this study has a coefficient of determination R Square = 0.779, meaning that the *Project Based Learning* model variable has an influence of 77.9% on the creative thinking skills of grade V students.

Prerequisite t test

Normality Test

Normality test is a statistical procedure used to test a data set that comes from a normally distributed population. The main purpose of the normality test is to validate the assumptions underlying various statistical analysis techniques. If the data is not normally distributed, then the analysis results obtained may be inaccurate or biased. Based on the results of the normality test using SPSS, it is known that the significance value is $0.093 > 0.05$, it can be concluded that the residual value is normally distributed.

Homogeneity Test

Homogeneity test is a statistical procedure used to test whether two or more groups of data have the same variance. The purpose of the homogeneity test is to determine whether the data comes from a population that has the same characteristics or not. Based on the homogeneity test, it can be seen that the statistical value of the homogeneity test in this study is $\chi^2_{count} (0.544) < \chi^2_{tabel} (3.841)$. The results of the homogeneity test calculation can be concluded that the sample population is homogeneous.

The t-test

This study uses a paired sample t-test to assess whether there is a difference in mean values between two samples that are paired or related to each other. The results of the homogeneity test can be seen in the following table.

Table 2. T Test Result

		Paired Differences					t	df	Sig.
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				(2-tailed)
					Lower	Upper			
Pair 1	Pretest- Posttest	-11,077	11,1655	2,129	-22,154	6,779	2,692	5	,000

Based on Table 2, it is known that the significant value for the effect of the *Project Based Learning* model variable on the creative thinking skills variable of students in IPAS lessons is $0.000 < 0.05$ and the t value is $2.692 > t$ table 1.662, so it can be concluded that H_a is accepted and H_0 is rejected, which means that there is an effect of the *Project Based Learning* model variable on the creative thinking skills variable of grade V students in IPAS lessons.

DISCUSSION

The results showed that the *Problem Based Learning* model was effective on creative thinking skills in class V IPAS subjects. It can be seen that this model has an influence of 77.9%. The learning model has a big influence on students' understanding. This is because the more appropriate the learning model used, the easier it is for students to receive material. Setyaningrum (2018) suggests that the *Problem Based Learning* (PBL) model is an approach that involves students in dealing with real problems from everyday life as the beginning of the learning process. In this way, students are invited to solve the problem, making it one of the innovative learning methods that encourage student activeness in learning and are expected to create meaningful learning experiences. In this model, the teacher acts as a motivator, facilitator and guide for students in the problem-solving process.

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The Problem Based Learning (PBL) learning model has a positive impact on the creative thinking skills of students in grade 5 IPAS subjects. This can be seen in the average pretest score of 58.78 and the average posttest score of 80.56. The average experimental class score increased by 21.78. The PBL model has a positive impact which can help students think creatively in solving problems. As one of the variations of effective learning models, PBL makes it easier for students to understand the material being taught (Dewi *et al.*, 2023). *Problem-based learning* is proven to be effective and provides significant results in the learning process. This is because this model encourages students to work collaboratively in finding solutions to real problems that match the characteristics of PBL (Sari *et al.*, 2023).

Creative thinking skills will be formed if the learning model used can link the material with real experiences and contexts that are relevant to students. In addition, models that are interactive and encourage students' active participation in the learning process will also strengthen their understanding of the concepts taught. The learning model serves as a guide for educators in planning learning activities in the classroom, starting from the preparation of learning tools, media, and tools, to evaluation tools that aim to achieve learning objectives (Mirdad, 2020).

CONCLUSIONS

Based on the results of the study, it can be concluded that the *Problem Based Learning* (PBL) learning model on creative thinking skills in class V IPAS subjects is effectively applied in learning. This conclusion is based on the results of the average pretest score of 58.78 and the average posttest score of 80.56. The average experimental class score increased by 21.78. This shows a positive impact after the application of the PBL learning model.

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