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The Effectiveness of PBL and TPS Models on Learning Outcomes and Confidence Attitudes

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Abstract

This study aims to determine and analyze the improvement of learning outcomes and students' self-confidence with PBL and TPS models. This study uses an experimental research design with two group pre-test - post-test designs. The study population was fourth-grade students at Elementary School in East Pekalongan sub-district. Samples were taken by random sampling technique obtained by 114 children from Public Elementary School Klego 01 as many as 61 students, and Public Elementary School Poncol 2 as many as 53 students. Research data were taken from tests and observations. The data were analysed using t-test analysis, with SPSS 23 software. The results showed PBL models are more effective than TPS models on learning theme VIII sub-theme 3 learning 3 with t-test sig values < 0.05. The research concludes that the PBL and TPS models are effective in improving learning outcomes and students' self-confidence. The PBL model is more effective than the TPS model in improving student learning outcomes and self-confidence.

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INTRODUCTION

The curriculum set by the government is Curriculum 2013. Learning in Curriculum 2013, Elementary School is integrated learning with a scientific approach. According to Heni, Binadja, and Sulistyorini (2015) integrated thematic learning research, Should use a scientific approach so that to reach efficient in learning. In the learning process, the teacher also has a very important role. Mayasari, Kadarohman, Rusdiana, and Kaniawati (2016); Nuri, and Rusilowati (2018) explained that in the 21st century, the development of the era was very fast, and was accompanied by the development of sophisticated technology. Teachers as facilitators need to prepare their students to have the ability to help students deal with the development of the era. In the course of learning, students must get appropriate learning outcomes or even more than the Minimal Completeness Criteria (KKM) that has been set.

According to Bloom, as quoted by Jihad and Haris (2013) there are three domains of learning outcomes, namely cognitive, affective, and psychomotor. Furthermore, he argues that learning outcomes can be grouped into two types, namely knowledge, and skills. Knowledge consists of four categories, namely: knowledge of facts, procedural knowledge, knowledge of concepts, and knowledge of principles. While skills also consist of four categories, namely: the skills to think or cognitive abilities, the skills to act or motor skills, the skills to react or behave, and the skills to interact. Whereas Sudjana (2009) as quoted by Jihad and Haris (2013) argues that learning outcomes are abilities possessed by students after receiving their learning experience.

Minister of Education and Culture Regulation Number 21 of 2016 states that the core competencies regarding social attitudes are several attitudes that must be possessed by students, one of which is an attitude of confidence. For this reason, it is necessary to cultivate an attitude of confidence in students in each learning. However, conditions in schools are often not the same as expectations. Kompas (July 12, 2013) in Saputro and Soeharto (2015) revealed that teachers were still unsure of the implementation of Curriculum 2013 to be implemented. That is because the teacher training period is too short, which is only five days. Also, it is not easy to change the teacher's paradigm from conventional methods such as lectures in front of the class to become a facilitator and motivator for students in a short time. Integrated thematic learning cannot be carried out to the maximum. Existing learning approaches often do not fit the characteristics of students and schools.

The implementation of the thematic learning of grade IV students at Public Elementary School Klego Pekalongan is quite good. The teacher uses a scientific approach following Curriculum 2013. But in the whole process still found students who were busy, bored, and less active, because the teacher is still dominant in learning. Also, results of the VIII theme were found in 56% of students whose grades were less than KKM, which was 75, and low self-confidence. This shows that in reality, students have not been able to follow the learning well. One of the subject that was considered difficult was the theme VIII *Daerah Tempat Tinggalku* sub-theme 3 *Bangga terhadap Daerah Tempat Tinggalku* of Learning 3, namely Indonesian Language, Civics and Social Sciences.

The characteristics of the Indonesian language, which is the reading text makes students not to encourage to analyze the contents of the reading, Civics, and Social Studies which seem only memorized makes the students satisfied in their learning. Therefore, there need to be changed to provide interesting learning, so students have the confidence to follow the learning process and obtain maximum learning results.

One effort that can be done to improve these conditions is by applying a fun learning model. The learning model that can meet these needs is problem-based learning and think pair share. As in a study conducted by Fitri and Ramdiah (2017); Rachmawati, Sudarmin, and Dewi (2015) there was a positive impact on increasing cognitive abilities with PBL. Likewise, attitudes can be improved by PBL learning

models in the research of Wastono (2015) as well as Nurtanto and Sofyan (2015). Whereas think pair share as a comparison learning model also has the same characteristics in Kurniawan, Elmunsyah, and Muladi (2018); Fauzi (2018) that TPS can improve student learning outcomes. Likewise, in Rahayu research (2017); Chotima (2015) shows that there is an increase in students' self-confidence with cooperative learning such as TPS. Researchers were intrigued to improve these conditions by applying problem- based learning and think pair share model.

Although various studies have proved the effectiveness of problem-based learning model and think pair share model, but there is no comparison between the effectiveness of the two models in learning theme VIII *Daerah Tempat Tinggalku* sub-theme 3 *Bangga terhadap Daerah Tempat Tinggalku* learning 3 (Indonesian language, Civics, and Social studies subjects) to improve learning outcomes and confident attitudes of Grade IV students in Public Elementary School Klego 01 Pekalongan City and Public Elementary School Poncol 02 Pekalongan City. The purpose of this study was to determine and analyze the increase of learning outcomes and confidence with PBL and TPS models.

METHODS

The design of this study used an experimental research design with two group pre-test - post-test designs to compare the effectiveness of problem-based learning model, and think pair share learning model towards learning outcomes, and the students' self-confidence in class IV SD VIII learning *Daerah Tempat Tinggalku* sub-theme 3 Bangga terhadap *Daerah Tempat Tinggalku* learning 3 (Indonesian language, Civics, and Social studies).

The population taken was grade IV Elementary School students in Pekalongan Timur sub-district who had implemented Curriculum 2013, namely grade IV Public Elementary School Klego 01 students as many as 61 students, and grade IV Public Elementary School Poncol 2 students as many as 53 students. Samples were taken by random sampling technique and obtained 114 children from Public Elementary School Klego 01 as many as 61 students and Public Elementary School Poncol 2 as many as 53 students.

The data of this study were obtained from tests and observations. The prerequisite test of the study is the normality test and homogeneity test. Data analysis in this study used t-test analysis using SPSS 23.

RESULTS AND DISCUSSION

The results of the normality test of confidence attitude data, and the learning outcomes before and after, as well as after the given model of problem-based learning in experimental class 1, and think pair share in experimental class 2 are presented in Table 1.

Table 1. Normality Test Results

Group	Kolmogorov-Smirnov		
	Statistic	df	Sig
SPD PBL Pre-test	.104	61	.096
SPD PBL Post-test	.110	61	.062
SPD TPS Pre-test	.115	53	.078
SPD TPS Post-test	.102	53	.200
HB Pre-test PBL	.095	61	.200
HB Post-test PBL	.109	61	.067
HB Pre-test TPS	.117	53	.070
HB Post-test TPS	.113	53	.086

Based on the results of the calculations in Table 1 obtained a significant value of the normality test results in a confident attitude, and learning outcomes both before and after learning with problem-based learning and think pair share models higher than 0.05 or sig > 0.05 so it can be concluded that overall data is normally distributed.

Furthermore, the homogeneity test is carried out using the Test of Homogeneity of Variances test. Moreover, pre-test and post-test data were tested for homogeneity. Homogeneity test results of students' early childhood knowledge data are presented in Table 2. The results of the Test of Homogeneity of Variance in Table 2 show that the test results show that the confidential data in the PBL group has a homogeneous variant and the confident attitude in the TPS group has a homogeneous variant (sig

0.501 > 0.05 and 0.021 < 0.05). While the Test of Homogeneity of Variances shows that the test results show that the learning outcome data in the PBL group has homogeneous variants, and the learning outcomes in the TPS group have homogeneous variants (sig 0.501 > 0.05 and 0.021 < 0.05) according to Tharenue (2007).

Table 2. Homogeneity Test Results

	Levene statistic	df_1	df_2	Sig.
PD PBL attitude	.228	1	120	.634
PBL learning outcomes	.302	1	120	.584
PD TPS attitude	.662	1	104	.418
TPS learning outcomes	.711	1	104	.082

Improved Learning Outcomes and Attitude of Confidence in Problem-based Learning

The results of this study indicate that the problem-based learning model can improve student learning outcomes and self-confidence, as shown in Table 4.

Table 4. Learning Outcomes and Problem-based Learning Confidence Attitudes

	Pre-test	Post-test
HB-PBL	73.6	83.98
SPD-PBL	64.54	80.19

Based on the data in Table 4, it can be seen that student learning outcomes using the PBL model increased from 73.6 (lower than KKM) to 83.98 (upper than KKM), and for confidence with indicators that dare to express opinions, dare to try new things, and feel positive for yourself obtained an increase of 16%.

The findings of the study indicate relevance to previous research that the problem-based learning model also improves student learning outcomes. Relevant research, among others, research conducted by Auliah, Setyosari, and Sumarmi (2017) that the PBL model can improve motivation and learning outcomes of social studies class IV elementary school. The results of research conducted by Yew, and Goh (2016) show that the stages or steps of problem-based learning affect the learning outcomes of students. Also, research conducted by Lintang, Masrukan, and Wardani (2017); Wijanarko, Supardi, and Marwoto (2017) shows the results that problem-based learning (PBL) learning model can improve student learning outcomes both in aspects of knowledge, skills, and attitudes, whereas Jannah research (2018) shows the results that the application of problem-based learning model influences student learning outcomes and students' science process skills in the subject of salt hydrolysis.

Improved Learning Outcomes and Confidence in Think Pair Share

The results of this study indicate that think pair share learning model can improve student learning outcomes and self-esteem, as shown in Table 5.

Table 5. Learning Outcomes and Think Pair Share Confidence Attitudes

	Pre-test	Post-test
HB-TPS	71.19	78.23
SPD-TPS	63.67	67.76

Based on the data in Table 5, it can be seen that student learning outcomes using the TPS model increased from 71.19 (lower than KKM) to 78.23 (upper than KKM), and for confidence with indicators that dare to express opinions, dare to try new things, and feel positive for yourself obtained an increase of 4.09%.

The findings in this study indicate that there is an increase in student learning outcomes after learning VIII theme sub-theme 3 learning 3 using think pair share learning models. The results of this study are relevant to some previous studies that researched think pair share model. Research related to the findings in this study was conducted by Ni'mah, and Dwijananti (2014) which showed that there was an increase in student learning outcomes, and student activities using think pair share model. Other research relevant to this study was conducted by Surayya, Subagia, and Tika (2014) that think pair share model can be used to improve student learning outcomes. Also, research conducted by Hidayat and Muhson (2018) shows that the TPS model is proven to be more effective than conventional ones in enhancing student learning outcomes and better collaboration.

The Effectiveness of PBL and TPS Model Learning Outcomes and Confidence Attitudes

The results of the effectiveness of the two learning models can be seen in Table 6.

Based on the results of calculations in Table 6, it is known that the difference in thematic learning outcomes with a problem-based learning model, and think pair share model has a t_{value} = 3.77 with a probability of 0.000. When compared with the value of α = 0.05. Then the calculated probability value is smaller than the value of α, so it is concluded that the increase in learning outcomes with the problem-based learning model is significantly more effective than think pair share model.

Table 6. Effectiveness of PBL and TPS on Confidence Attitudes and Learning Outcomes

		Levene's test for equality of variances		t-test for equality of means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. Error difference	95% confidence interval of the difference
									Lower	Upper
SPD	Equal variances assumed	.004	.952	7.961	112	.000	2.98175	.37456	2.23961	3.72389
	Equal variances not assumed			7.993	111.199	.000	2.98175	.37305	2.24254	3.72096
HB	Equal variances assumed	1.364	.245	3.770	112	.000	1.72502	.45751	.81852	2.63152
	Equal variances not assumed			3.816	111.903	.000	1.72502	.45205	.82935	2.62070

While the difference in self-confidence in thematic learning with problem-based learning and think pair share models has a t_{value} = 7.961 with a probability of 0.000. When compared with the value of α used (0.05), the calculated probability value is smaller than the value of α, so it can be concluded that the increase in confidence with the learning model. Problem-based learning is significantly more effective compared to think pair share model.

This study shows that the experimental group 1 with a problem-based learning model shows higher learning outcomes and an attitude of confidence compared to the experimental group 2 with think pair share learning model. These findings prove the research conducted by Rahmatin and Azinar (2017) shows that student learning outcomes using the PBL model have a better effect on student learning outcomes than the TPS model. Research conducted by Fitrianawati (2016) shows that the learning outcomes of students who are treated using the PBL teaching model are better than the learning outcomes of students who are given treatment using cooperative learning models.

However, in research conducted by Fitrianawati (2016) the cooperative learning referred to uses the TGT (Teams Games Tournament) type while in this study the cooperative type TPS (Think Pair Share) model is used.

Based on the discussion above the problem-based learning model is more effective in improving student learning outcomes compared to think pair share model.

CONCLUSION

Based on the discussion that has been done, it can be concluded that problem-based learning model and think pair share model can improve learning outcomes and student confidence, and problem-based learning models prove to be more effective in improving learning outcomes, and students' self-confidence compared to think pair share model

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