Improving Social Studies Learning Outcomes and The Effectiveness of Project-Based Learning

Sidik Puryanto

Pendidikan Pancasila dan Kewarganegaraan, Universitas Terbuka, Indonesia
Corresponding Email: sidik.puryanto@ecampus.ut.ac.id, Phone Number: 0813 xxxx xxxx

Article History:
Received: Mar 30, 2023
Revised: Apr 15, 2023
Accepted: Apr 24, 2023
Online First: May 01, 2023

Keywords:
Affectivity,
Conflict,
Learning Outcomes,
Project Based Learning,
Social Studies.

Kata Kunci:
Efektifitas,
Hasil Belajar,
Konflik,
Pembelajaran Berbasis Proyek,
Pendidikan IPS.

How to cite:
Puryanto, S. (2023). Improving Social Studies Learning Outcomes and The Effectiveness of Project-Based Learning. *Edunesia: Jurnal Ilmiah Pendidikan, 4*(2), 804-816.

Abstract: The world of education today does not only require students to become experts in the cognitive field but is required to be able to achieve 21st-century skills. Based on the analysis and synthesis of journals, the appropriate learning model for facing the 21st century is the Project Based Learning (PjBL) learning model. This study aims to determine the project-based learning (PJbl) model's effectiveness in improving student learning outcomes in class IX on conflict material. This research was conducted at SMP 4 Kismantoro Wonogiri, the academic year 2022/2023, semester 2. The research method was quasi-experimental (quasi-experimental). The research subjects were 40 students in class IX, divided into 17 students in control and 23 in the practical classes. Data analysis used was paired simple t-test, independent t-test, and N-Gain scores. The results showed that the project-based learning model could significantly improve the learning outcomes of class IX students at SMP 4 SATAP Kismantoro, with a score of = -18.164 with sig 0.000 <0.05. Meanwhile, the effectiveness of the project-based learning model in social studies subject matter is in the range of 0.3-0.7. The conclusion of this study shows that project-based learning can significantly improve learning outcomes in social studies subject matter of conflict in class IX students and has a moderate level of effectiveness.

Abstrak: Dunia pendidikan saat ini tidak hanya menuntut siswa untuk menjadi ahli dalam bidang kognitif saja tetapi dituntut untuk dapat mencapai keterampilan abad 21. Berdasarkan analisis dan sintesa dari jurnal, model pembelajaran yang tepat untuk menghadapi abad 21 adalah Project Based Learning (PjBL) model pembelajaran. Penelitian ini bertujuan untuk mengetahui efektifitas model pembelajaran project based learning (PjBL) dalam meningkatkan hasil belajar siswa kelas IX pada materi konflik. Penelitian ini dilakukan di SMP 4 Kismantoro Wonogiri, tahun pelajaran 2022/2023, semester 2. Metode penelitian ini adalah kuasi eksperimen (eksperimen semu). Subjek penelitian adalah siswa kelas IX yang berjumlah 40 orang, yang terbagi dalam 17 siswa kelas kontrol dan 23 siswa kelas eksperimen. Analisis data yang digunakan adalah uji paired simple t-test, independent t-tes dan N-Gain skor. Hasil penelitian menunjukkan model pembelajaran berbasisi proyek secara signifikan dapat meningkatkan hasil belajar siswa kelas IX SMP 4 SATAP Kismantoro diperoleh angka sebesar to = -18,164 dengan sig 0,000 < 0,05. Sedangkan tingkat efektifitas model proyek based learning pada mata pelajaran IPS materi adalah dalam rentang 0,3-0,7. Kesimpulan penelitian ini menunjukkan bahwa pembelajaran berbasis proyek signifikan mampu meningkatkan hasil belajar mata pelajaran IPS materi konflik pada siswa kelas IX, dan memiliki tingkat efektifitas sedang.

https://doi.org/10.51276/edu.v4i2.458

A. Introduction

The era of globalization demands every party to change its thinking of each party to follow the development of increasingly sophisticated technology. All parties must prepare themselves for this era of globalization. The education world must certainly prepare creative human resources, be able to solve actual problems in life and produce new technologies which are improvements from before. Everyone is required to learn continually. Learning is a fundamental thing that cannot be separated from the life of every human being.

Along with the development of society and increasing needs, the government strives to improve the quality of education. Not only the government but also observers of education, including education practitioners and education personnel, including teachers and lecturers, try to make new products in the form of teaching materials, learning media, teaching aids, and learning resources needed to complement the old learning resources to fit the curriculum the latest. In addition, education experts also continue to carry out various reforms and research to improve the quality of learning in schools so that improvements occur in all fields of education. The curriculum is also updated so that students in Indonesia are caught up with other countries. To improve the quality of education, educators, namely teachers, and lecturers, must also be given training, seminars, and activities that support their professional competence, likewise with prospective teacher students. Students majoring in education must be provided with provisions to become professional teacher candidates so that when they graduate from college, they can immediately work in the world of education well. To improve student learning outcomes in innovative courses, a learning model is needed to direct active, critical-thinking students, develop analytical and evaluation skills and gain contextual experience. Therefore, the learning activities used are contextual through complex activities with the Project-Based learning model. Project-based learning is an approach to instruction that emphasizes 'authentic learning tasks grounded in learners' personal interests.

Project-Based Learning (PjBL) is a form of learning that focuses on students. Students are actively involved in the learning process. This PjBL learning process will train students' thinking in dealing with problems. In PBL, students work collaboratively with others and reflect on what they have learned. In addition, students can become active in the search and decision-making process by improving their practical thinking skills. Learning based project (Project Based Learning) is based on constructive, contextual and student-centered, and principled autonomy student, the student can manage to learn Alone, the student can innovate Alone (3) students are creative in think, (4) students are more active in learning, (5) students interested and motivated, (6) students feel challenged in the learning process and (7) students own broad view (Tanjung et al., 2022; Furi et al., 2018; Mutakinati et al., 2018). PjBL is a systematic teaching method that engages students in learning knowledge and skills through an extended inquiry process structured around complex, authentic questions and carefully designed products and tasks. Besides That excess, the learning model-based project too significantly increases the creativity think student, increase motivation student beside it is also capable increase aspect independence, cooperation, aspect effects, and

https://doi.org/10.51276/edu.v4i2.458

aspects mastery psychomotor, got increase the level of concern for students in the environment, got increase the ability of the student to solve the problem, as well can increase ability write work science to students (Fitz et al., 2022; Pratiwi et al., 2018; Putri & Supatmo, 2020). In addition, PBL develops students' scientific process skills. Therefore, students who develop scientific process skills solve their scientific problems by asking questions, discussing ideas, making observations and predictions, conducting experiments, and collecting and analyzing data. PjBL aims to involve students in the learning process. With project-based learning, students are more active, and learning will be more effective and efficient. Enhancement results Study students are also explained as study Thomas, learning in junior high school using an integrative approach (Ariyani & Prasetyo, 2021; Samad et al., 2021; Ansori, 2019). PjBL Project work is assigned to individuals or groups of students. Then, the project work begins with the selection of a particular topic by the learners with the teacher's scaffolding. Topics are generally problems that students can solve by experiment or observational eye social studies education lessons in junior high school are arranged in a manner integrative with refers to the definition NCSS (1994, 2010) shows that social studies consist of those aspects of history, economics, political science, sociology, anthropology, physiology, geography, and philosophy. In PjBL, students collaborate and take on their responsibilities as team members. In addition, students recognize the similarities between what they learn and what happens outside of school. In addition, PjBL improves students' metacognitive skills, thereby; helping them make successful plans and evaluate their solutions.

In research, IPS education used material class IX in the sub-discussion on change in social culture and globalization, with subtheme conflict. Material conflict at school medium first (junior high school) is material recently inserted and yet lots researched as research conducted (Pramestika et al., 2020; Harefa et al., 2020; Ati & Setiawan, 2020). Objective research This is (1) to know the enhancement results Study student class IX on the material conflict in social studies education, (2) to know the effectiveness of learning models based project applied to the material conflict.

B. Method

Study This uses a design study quasi-experiment. McMillan, JH, and Schumacher (in Rahayu et al., 2019) confirm that a study quasi-experiment is "a type of experiment with research participants is not randomly assigned to the experimental and control group." Whereas Creswell (in Suardin & Andriani, 2021) argues that quasi-experiment or experiment pseudo is " Quasi-experimental designs do not include the use of random assignments. Researchers who employ these designs rely instead on other techniques to control (or at least reduce) threats to internal validity.

https://doi.org/10.51276/edu.v4i2.458

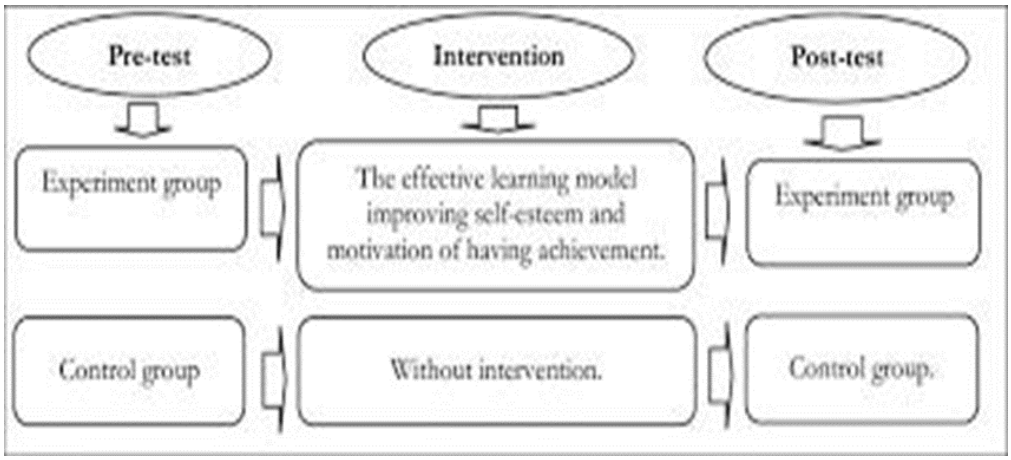

Figure 1. Design Quasi Experiment McMilan, JH and Schumacher

Types of quasi-experiments in research This is Nonequivalent Control Group Design. According to Creswell (in Hasanah & Fitria, 2021), Nonequivalent (Pretest and Posttest) Control Group Design. In this design, a popular approach to quasi-experiments, the experimental group A and the control group B are selected without random assignment. Both groups took a pretest and posttest, and only the experimental group received the treatment.

Table 1. Research Design Nonequivalent Control Group Design

Group	Pretest	Treatment	Posttest
Group Experiment (A)	O_1	X	O_2

Study This was done in 2022, in its entirety, in student class IX at SMP 4 Kismantoro Wonogiri, which totaled 40 students. Data collection is carried out with tests written, about the results of Study material conflict, with paired sample t-tests and independent t-tests. Whereas data analysis using normality test, hypothesis test, independent test, and N-Gain score test, with reference as follows.

Table 2. Calculation Effectiveness

N-Gain Value	Category
$g > 0.7$	Tall
$0.3 \leq g \geq 0.7$	Currently
$g < 0.3$	Low

C. Result and Discussion

Result

Data Normality Test

A data normality test was performed to know what data obtained has distributed normally or not. To study this, the test normality of the resulting data Study was analyzed

https://doi.org/10.51276/edu.v4i2.458

using the Kolmogorov Smirnov test with α = 0.05 and assisted with the IBM SPSS 23 program. The sample originates from a population Which distributed usually. If the mark sig from the test normality data is bigger from α (sig > 0.05), then H_0 no rejected (Royantoro et al., 2018). Normality test results in data on the study. This is as follows:

Table 3. Test Normality Data Pretest Learning Outcomes Group Experiments and Groups Control in Class VII I SMP 4 SATAP Kismantoro Wonogiri

	Class	Kolmogorov-Smirnov [a]			Shapiro-Wilk		
		Statistics	Df	Sig.	Statistics	df	Sig.
Learning outcomes	Experiment	.111	36	.200 *	.933	36	032
	Control	.107	36	.200 *	.949	36	094

Based on the data, it is known that mark sig in the group experiment and control more from α (sig > 0.05), i.e., 0.200 > 0.05. So, got said that learning outcome data before the group learning experiment nor group controls in Class V I II SMP 4 SATAP Kismantoro Wonogiri were usually distributed.

Learning Outcomes

Table 4. T-test Pretest-Posttest Learning outcomes Group Experiment at SMP 4 SATAP Kismantoro Wonogiri

		N	Correlation	Sig.
Pairs 1	Pretest & Posttest	36	.950	.000

Based on the table above, mark significance 0.000 < 0.05, then there is a connection between learning outcomes before applying projects to learning and after implementing the project on learning. Next, I mark correlation (r) squared, showing donation project implementation on learning to improve learning outcomes. Mark correlation 0.950 2 = 0.90 shows that donation project use on learning to enhance study results is significant at 90%. To prove is there is a significant difference between the learning outcomes participants educated before and after implementing the project on learning served in the table following:

Table 5. T-test (Paired Sample Test) Pretest -Posttest Learning Outcomes Group Experiment at SMP 4 SATAP Kismantoro Wonogiri

		Paired Differences					t	df	Sig.
		Means	Std. Deviation	Std. ErrorMeans	95% Confidence Lower	95% Confidence Upper			
Pairs 1	Pretest - Posttest	-9,583	3.166	.528	-10,654	-8,512	-18,164	35	.000

https://doi.org/10.51276/edu.v4i2.458

Based on the table above is known that the mark significance t-test (paired sample test) of 0.000. this show that the significance of the mark is smaller than 0.05, so H_0 is rejected, and H_1 is accepted. With thereby, there is a difference between the study results of education participants before and after the use project on learning.

Independent T-test

Table 6. Pretest Learning Outcomes T-test Group Experiment and Group Control in SMP 4 SATAP Kismantoro Wonogiri

	Class	N	Means	Std. Deviation	Std. Error Means
Learning outcomes	Experiment	36	21.47	9,732	1622
	Control	36	19.81	9.205	1,534

Based on the table, it is known that the mark average (means) group pretest experiment is taller compared to with average value group control. Mark the average group experiment as big 21.47, whereas marking the average group control as big 19,81. To prove if There is a difference significant between the learning outcomes, participants educate group experiment and group control served in the table following:

Table 7. T-test (Independent Samples Test) Pretest Learning Outcomes Group Experiments and Groups Control at SMP 4 SATAP Kismantoro Wonogiri

		Levene's test for		T-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Means difference	std. Error difference	95% Confidence interval	
									Lower	Upper
Learning outcomes	Equal variances assumed	.286	.595	.747	70	.458	1667	2,233	-2,786	6.119
	Equal variances not assumed			.747	69,784	.458	1667	2,233	-2,786	6.120

Based on the table above is known that the mark t-test significance of 0.458. This shows that the marks are more significant from 0.05, so H_0 accepted and H_1 rejected. Meanwhile, the value of t count obtained number as significant 0.747< from t_{table}, i.e., as big 1,994, so that can conclude that no there is a significant difference between the learning outcomes of participant study in groups experiments and groups control in SMP 4 SATAP Kismantoro Wonogiri.

https://doi.org/10.51276/edu.v4i2.458

Table 8. Posttest Learning Outcomes T-test Group Experiment and Group Control at SMP 4 SATAP Kismantoro Wonogiri

Group Statistics					
	Class	**N**	**Means**	**Std. Deviation**	**Std. Error Means**
Learning outcomes	Experiment	36	31.06	8,325	1,388
	Control	36	22.31	9,374	1,562

Based on the table, it is known that the mark average (means) group posttest experiment is taller compared to with average score group average control. Group average score experiment of 31.06, whereas the mark average group control was significant at 22,31. To prove if there is a difference which significance between group study results in experiments and groups control served in the table following:

Table 9. T-test (Independent Samples Test) Posttest Group Study Results Experiment and Group Control in SMP 4 SATAP Kismantoro Wonogiri

		Levene's test for		**T-test for Equality of Means**						
		F	**Sig.**	**t**	**df**	**Sig.(2-tailed)**	**Means difference**	**Std. Error difference**	**95% Confidence**	
									Lower	**Upper**
Learning outcomes	Equal variances assumed	1,046	.310	4,187	70	.000	8,750	2,090	4,582	12,918
	Equal variances not assumed			4,187	69,037	.000	8,750	2,090	4,581	12,919

Based on the table above, can is known that the mark t-test significance of 0.000. So, got said that the mark significance was <0.05, so H_0 was rejected, and H_1 was accepted. Meanwhile, the value of t count obtained number as significant 4,187> from t_{table}, i.e., as big 1,994, so that can conclude that there is a significant difference between participant learning outcomes study in groups experiments and groups control in SMP 4 SATAP Kismantoro Wonogiri. Matter This shows better-enhanced learning outcomes in group experiments than in group control.

Effectiveness

Obtained learning outcomes data is known that there are enhanced learning outcomes participants educate. Based on the picture above, the enhancement of average learning outcomes in the group experiment and group control happened. On the experimental group average, learning outcomes, which were initially at 21.47, increased to 31.05, so it is known that the increase that occurred was equal to 9.58. Meanwhile, in the control group, the average value of learning outcomes which was initially 19.8, increased to

https://doi.org/10.51276/edu.v4i2.458

22.3, so it is known as enhancement Which happens, i.e., as big 2,5. Based on the data, it is known that the percentage enhancement learning outcomes in group experiments are taller compared to group control.

The magnitude percentage enhancement learning outcomes participant can be seen in the following picture:

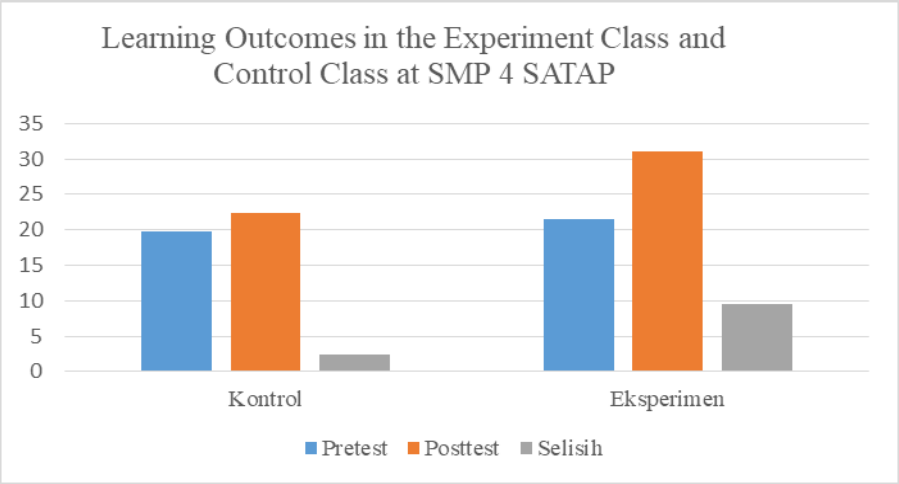

Figure 2. Increase Histogram Learning outcomes at SMP 4 SATAP Kismantoro Wonogiri

As for summary results analysis, data learning outcomes on the pretest and posttest based on mark Second N-gain class can see in the table following this.

Table 10. N-Gain Score Learning Outcomes Participants Educate

Class	Average Score				
	Pretest	Posttest	Score Maximum	N-Gains	Category Enhancement
Experiment	1.43	2.07	3	0.41	Currently
Control	1.32	1.49	3	0.1	Low

The table above shows that class experiments using a project on learning proven can increase learning outcomes in participant education with a category enhancement medium of $0.7 > g \geq 0.3$. While the control class is included in the low category.

Discussion

Field tests were conducted to determine differences in the application of project-based learning models to participant learning outcomes students conducted at SMP 4 SATAP Kismantoro Wonogiri for the 2021/2022 Academic Year. At school, the determined group experiment using a learning models-based project And group controls that do not use a learning models-based project. Enhancement learning outcomes participant education analyzed through pretest and posttest values that have been given (Asrifah et al., 2020).

https://doi.org/10.51276/edu.v4i2.458

The results of the tests carried out are known that based on mark pretest learning outcomes, participant educated obtained a group average score experiment of 21.47, while at group control obtained an average value of 19.81. this shows that mark learning outcomes before the learning group experiment are significant compared to mark group control (Farid et al., 2022). For know enhancement participant learning outcomes educate Which happen before and after use learning models based project done paired sample t-test and obtained mark significance 0.000 < 0.005 show differences between learning outcomes participant educate before And after use learning models based project. Donations learning models based project to enhancement learning outcomes participant educate as significant 90%, matter This obtained from mark correlation 0.9502 = 0.90

There a significant difference between learning outcomes in group experiments and groups control can see in the results of the t-test and obtained mark significance as big 0.458> 0.05, whereas on t count obtained several 0.747 < 1.994 (t_{table}) so that H_0 accepted and H_1 rejected and got concluded that No There is a significant difference between learning outcomes participant educate group experiment and group control before learning (Siregar & Aghni, 2021). Results data test after learning group average was obtained experiment of 31.06. Meanwhile, the group controls a significant 22,31 matter. This shows that the average group experiment was taller than the group control.

Furthermore, the t-test obtained a mark significance of 0.000 <0.05, while at t count obtained several 4.187 > 1.994 (t_{table}) so that H_0 rejected and H_1 accepted and can conclude that there is a significant difference between the learning outcomes participants educate group experiment and group control after learning (Bendriyanti et al., 2022). Based on mark learning outcomes given before and after learning in the class experiment nor class control happened, the enhancement average learning outcomes in the class experiment was significant at 9.59. In contrast, the enhancement average learning outcomes in group control was significant at 2,5, enhancing learning outcomes in groups experiment more big 7.09 points compared to group control (Marbun et al., 2021). The successful implementation of PjBL in the classroom lies in the ability of teachers to effectively assist student learning, motivate, and guide students during the learning process. In the PjBL process, collaboration between students, students, and teachers is essential. The project-based learning model is a learning model that provides opportunities for teachers to manage to learn in the classroom by involving project work carried out by students in groups.

With that, learning a model-based project significantly can increase results study student class IX SMP 4 SATAP Kismatoro Wonogiri. As in studies by Anggiehlia et al (2019), Widiastuti (2021), Rusmansyah et al (2023), Pramesti et al (2022), meanwhile at the level effectiveness, still need to be done various research shows the level difference between the two models, for support achievement high effectiveness.

D. Conclusion

Based on the results of the data analysis, it is known that the Project-Based Learning Model can provide a new nuance for students who have never obtained this model before.

https://doi.org/10.51276/edu.v4i2.458

Project work contains complex tasks based on very challenging statements and problems. It requires students to design, solve problems, make decisions, conduct investigative activities, and provide opportunities for students to work independently and in groups. In the Project-based Learning model, students are tasked with plunging into the field. With the contextual assignment of projects, student activities, and learning outcomes are better than the control class. Researchers can observe maximum activity and good teamwork. Students in groups try to develop learning scenarios that are appropriate for the subject matter that has been taught in the classroom.

The report's results are presented and practiced in class while designing the learning model. Significant differences exist in the results study before and after applying the learning models-based project in a class experiment at SMP 4 SATAP Kismantoro Wonogiri Academic Year 2022/2023. It can look at the results test description experienced learning outcomes enhancement after using learning models based project as big 9.58 point from 21.47 to 31.05.

On the results of the t-test before compared treatment with after treatment obtained number as significant as to = -18.164 with sig 0.000 < 0.05 with learning model contribution based project to enhancement learning outcomes participant educate as significant 90%. The effectiveness of learning models-based projects on social studies learning material conflicts own mark medium, that is, between the range of $0.7 > g \geq 0.3$.

References

Anggiehlia, A., Anisa, N., & Dalina, M. (2019). Pengaruh Pembelajaran Berbasis Proyek Dalam Meningkatkan Kemampuan Berpikir Kreatif Pada Peserta Didik Kelas XI IPS Di SMA N 1 Talang Ubi Kab. PALI. *Harmony: Jurnal Pembelajaran IPS dan PKN*, *4*(1), 33-38. https://doi.org/10.15294/harmony.v4i1.34920

Ansori, M. (2019). Pengaruh Metode Pembelajaran Collaboration Problem Solving terhadap Hasil Belajar Matematika Siswa dengan Mengendalikan IQ dan Motivasi Belajar. *Dirasah: Jurnal Studi Ilmu Dan Manajemen Pendidikan Islam*, *2*(2), 1-22. https://doi.org/10.29062/dirasah.v2i2.55

Ariyani, O. W., & Prasetyo, T. (2021). Efektivitas Model Pembelajaran Problem Based Learning dan Problem Solving terhadap Kemampuan Berpikir Kritis Siswa Sekolah Dasar. *Jurnal Basicedu*, *5*(3), 1149-1160. https://doi.org/10.31004/basicedu.v5i3.892

Asrifah, S., Solihatin, E., Arif, A., Rusmono, & Iasha, V. (2020). Pengaruh Model Pembelajaran Problem Based Learning terhadap Hasil Belajar Pendidikan Pancasila dan Kewarganegaraan Siswa Kelas V SDN Pondok Pinang 05. *Buana Pendidikan: Jurnal Fakultas Keguruan dan Ilmu Pendidikan, 16(*30), 183–193. https://doi.org/10.36456/bp.vol16.no30.a2719

Ati, T. P., & Setiawan, Y. (2020). Efektivitas Problem Based Learning-Problem Solving terhadap Kemampuan Berpikir Kritis dalam Pembelajaran Matematika Siswa Kelas

https://doi.org/10.51276/edu.v4i2.458

V. *Jurnal Cendekia: Jurnal Pendidikan Matematika,* *4*(1), 294–303. https://doi.org/10.31004/cendekia.v4i1.209

Bendriyanti, R. P., Dewi, C., & Nurhasanah, I. (2022). Manajemen Pembelajaran Berdiferensiasi dalam Meningkatkan Kualitas Belajar Siswa Kelas IX Smpit Khairunnas. *Jurnal Pendidikan (Teori Dan Praktik),* *6*(2), 70–74. Https://Doi.Org/10.26740/Jp.V6n2.P70-74

Farid, I., Yulianti, R., Hasan, A., & Hilaiyah, T. (2022). Strategi Pembelajaran Diferensiasi dalam Memenuhi Kebutuhan Belajar Peserta Didik di Sekolah Dasar. *Jurnal Pendidikan dan Konseling (JPDK),* *4*(6), 11177–11182. https://doi.org/https://doi.org/10.31004/jpdk.v4i6.10212

Fitz, A. I., Murtini, W., & Schuller, G. (2022). A Project-Based Learning Model to Improve Learning Outcomes for 8th Grade 4 Satap Kismantoro Wonogiri Students. *Journal of Research in Vocational Education,* *4*(10), 17-22. https://doi.org/10.53469/jrve.2022.04(10).04

Furi, L. M. I., Handayani, S., & Maharani, S. (2018). Eksperimen Model Pembelajaran Project Based Learning dan Project Based Learning Terintegrasi STEM untuk Mengingkatkan Hasil Belajar dan Kreativitas Siswa pada Kompetensi Dasar Teknologi Pengolahan Susu. *Jurnal Penelitian Pendidikan,* *35*(1), 49–60. https://doi.org/10.15294/jpp.v35i1.13886

Harefa, D., Telaumbanua, T., Sarumaha, M., Ndururu, K., & Ndururu, M. (2020). Peningkatan Hasil Belajar IPA pada Model Pembelajaran Creative Problem Solving (CPS). *Musamus Journal of Primary Education,* *5*(1), 1–18. https://doi.org/10.35724/musjpe.v3i1.2875

Hasanah, M., & Fitria, Y. (2021). Pengaruh Model Problem Based Learning terhadap Kemampuan Kognitif IPA pada Pembelajaran Tematik Terpadu. *Jurnal Basicedu,* *5*(3), 1509–1517. https://doi.org/10.31004/basicedu.v5i3.968

Marbun, A. A., Sitepu, A., & Juliana, J. Pengaruh Model Pembelajaran Discovery Learning terhadap Hasil Belajar Siswa Tema Praja Muda Karana di Kelas III SD Negeri 105327 Perdamean. *School Education Journal PGSD FIP UNIMED*, *11*(2), 176-184. https://doi.org/10.24114/sejpgsd.v11i2.26631

Mutakinati, L., Anwari, I., & Kumano, Y. (2018). Analysis of Studentsâ€™ Critical Thinking Skill of Middle School through STEM Education Project-Based Learning. *Jurnal Pendidikan IPA Indonesia*, *7*(1), 54-65. https://doi.org/10.15294/jpii.v7i1.10495

Pramesti, D., Probosari, R. M., & Indriyanti, N. Y. (2022). Effectiveness of Project Based Learning Low Carbon Stem and Discovery Learning to Improve Creative Thinking Skills. *Journal Of Innovation in Educational and Cultural Research,* *3*(3), 444–456. https://doi.org/10.46843/jiecr.v3i3.156

https://doi.org/10.51276/edu.v4i2.458

Pramestika, R. A., Suwignyo, H., & Utaya, S. (2020). Model Pembelajaran Creative Problem Solving pada Kemampuan Berpikir Kreatif dan Hasil Belajar Tematik Siswa Sekolah Dasar. *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan*, *5*(3), 361-366. https://doi.org/10.17977/jptpp.v5i3.13263

Pratiwi, I. A., Ardianti, S. D., & Kanzunnudin, M. (2018). Peningkatan Kemampuan Kerjasama Melalui Model Project Based Learning (PjBL) Berbantuan Metode Edutainment pada Mata Pelajaran Ilmu Pengetahuan Sosial. *Refleksi Edukatika: Jurnal Ilmiah Kependidikan, 8*(2), 177-182. https://doi.org/10.24176/re.v8i2.2357

Putri, Y. P., & Supatmo, S. (2020). Model Pembelajaran Seni Grafis Cukil Hardboard pada Kelas IX SMP Negeri 1 Bawen. *Eduarts: Jurnal Pendidikan Seni, 9*(3), 70–92. https://doi.org/10.15294/eduarts.v9i3.40511

Rahayu, E. L., Akbar, P., & Afrilianto, M. (2019). Pengaruh Metode Mind Mapping terhadap Strategi Thinking Aloud Pair Problem Solving Terhadap Kemampuan Berpikir Kreatif Matematis. *Journal on Education, 1*(2), 271–278. https://doi.org/10.31004/joe.v1i2.64

Royantoro, F., Yusuf, I., & Widyaningsih, S. W. (2018). Pengaruh Model Problem Based Learning terhadap Higher Order Thinking Skills Peserta Didik. *Berskala Ilmiah dalam Pendidikan, 6*(3), 371-382. https://doi.org/10.20527/bipf.v6i3.5436

Rusmansyah, R., Leny, L., & Sofia, H. N. (2023). Improving Students' Scientific Literacy and Cognitive Learning Outcomes Through Ethnoscience-Based PJBL Model. *Journal of Innovation in Educational and Cultural Research, 4*(1), 1–9. https://doi.org/10.46843/jiecr.v4i1.382

Samad, I., Ali P, M., & Assaibin, M. (2021). Pengaruh Kemampuan Penalaran Matematis dengan Model Pembelajaran Double Loop Problem Solving terhadap Hasil Belajar Siswa. *Indonesian Journal of Educational Science (IJES), 4*(1), 43–50. https://doi.org/10.31605/ijes.v4i1.1202

Siregar, M. N. N., & Aghni, R. I. (2021). Pengembangan Perangkat Pembelajaran Berbasis Problem Based Learning (PBL) untuk Meningkatkan Higher Order Thinking Skill (Hots). *Jurnal Pendidikan Akuntansi (JPAK), 9*(2), 292–301. https://doi.org/10.26740/jpak.v9n2.p292-301

Suardin, S., & Andriani, W. O. L. (2021). Studi Komparatif Model Problem Solving dengan Model Teams Games Tournament (TGT) terhadap Hasil Belajar Matematika Siswa Sekolah Dasar. *Edukatif: Jurnal Ilmu Pendidikan, 3*(1), 227–234. https://doi.org/10.31004/edukatif.v3i1.289

Tanjung, R., Dalimunthe, E. M., Ramadhini, F., & Sari, D. M. (2022). Penerapan Model Pembelajaran Berbasis Proyek untuk Meningkatkan Kepedulian Siswa terhadap Lingkungan pada Pembelajaran IPS Kelas IV B MI Model Panyabungan. *ITTIHAD*, *5*(1), 93-97.

https://doi.org/10.51276/edu.v4i2.458

Widiastuti, D. A. (2021). Peranan Model Pembelajaran Berbasis Proyek dalam Meningkatkan Minat Belajar Peserta Didik pada Pelajaran IPS SMPN 4 Pangalengan. *Pelita Bumi Pertiwi, 2*(02), 55–69.