



# Project Based Learning Model on Motivation and Learning Outcomes of Elementary Civic Education

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## ABSTRAK

Salah satu permasalahan dalam proses pembelajaran bagi anak sekolah dasar adalah kurangnya fokus dan konsentrasi dalam pembelajaran karena guru sering menggunakan model konvensional dan tidak interaktif. Tidak tercapainya penguasaan pembelajaran disebabkan oleh lemahnya pemahaman siswa terhadap materi yang diajarkan, dan kurangnya kreativitas guru dalam mengembangkan model pembelajaran sehingga hasil belajar yang diperoleh kurang optimal. Peneliti bertujuan menganalisis pengaruh antara penerapan model pembelajaran Project Based Learning (PjBL) dan motivasi belajar siswa SD terhadap hasil belajar mata pelajaran PPKn. Dalam penelitian ini digunakan metode eksperimen kuantitatif dengan desain eksperimen pretest dan posttest yang digunakan. Sampel yang digunakan adalah 30 siswa. Teknik pengumpulan data menggunakan pretest-posttest dan pemberian angket kepada siswa. Teknik analisis data menggunakan analisis varians dua arah untuk menguji hipotesis. Namun dilakukan uji persyaratan yang meliputi uji normalitas dan uji homogenitas. Berdasarkan analisis hasil, terdapat hubungan antara penerapan model pembelajaran PjBL dan motivasi belajar terhadap hasil belajar mata pelajaran PPKn di sekolah dasar. Disimpulkan bahwa penerapan model pembelajaran PjBL dan motivasi belajar dapat meningkatkan hasil belajar siswa.

## ABSTRACT

One of the problems in the learning process for elementary school children is the lack of focus and concentration in learning because teachers often use conventional models and do not interactive. The failure to achieve mastery of learning is caused by students' weak understanding of the material being taught, and the lack of teacher creativity in developing learning models so that the learning outcomes obtained are less than optimal. The researcher aims to analyse the effect between the application of the Project Based Learning (PjBL) learning model and learning motivation of elementary students on learning outcomes in PPKn subjects. In this study the quantitative experimental method was used with the pretest and posttest experimental designs used. The sample used was 30 students. Data collection techniques is using a pretest-posttest and giving questionnaires to students. The data analysis technique uses a two-way analysis of variance to test the hypothesis. However, a requirement test was carried out, which included a normality test and a homogeneity test. Based on the analysis of the results, there is a relationship between applying the PjBL learning model and learning motivation on the learning outcomes of Civics subjects in elementary schools. It was concluded that applying the PjBL learning model and learning motivation could improve student learning outcomes.

## 1. INTRODUCTION

Education is a process to help humans develop their potential for a better change. Education is a planned conscious effort to create a learning atmosphere and learning process so that students can actively developing his potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed for himself, society, nation and state (Herawann & Sudarsana, 2017; Muhtar & Dallyono, 2020; Santika, 2020). Basic Education as early Education is very influential on further education. Education is one of the most critical needs in people's lives. The whole community is expected to be able to keep up with the times. Efforts to keep up with the times of society also require Education in

the preamble of the Constitution of the Republic of Indonesia, namely educating the nation's life (Abidin et al., 2021; Dharma & Siregar, 2015; Wijaya et al., 2016). In order to achieve this goal, Education must be implemented in society properly. Education is directed at creating quality resources (Indy et al., 2019; Leal Filho et al., 2019).

One of the many factors that can affect student learning achievement in the school environment is the motivation that comes from within. Motivation in students will impact the character of passionate, diligent, tenacious students who concentrate on learning. Motivation is a driving force in arousing enthusiasm for learning at school (Pratama et al., 2019; Retariandalas, 2017; Surur & Tartilla, 2019). In the world of Education, the desire and interest of students in learning are one of the keys to achieving success in learning. Learning motivation is the key to achieving learning success for students. However, each student has unequal desires and affinity for participating in the learning process in class. Learning activities depend on the desire or encouragement of students to receive learning (Afriana et al., 2016; Nabillah & Abadi, 2019). Motivation is a process that produces intensity, direction, and persistence to achieve a goal. In general, motivation is a change in energy characterized by practical encouragement and reactions to achieving goals (Abdullah, 2021; Ernata, 2017). Since human behaviour is always purposive, we can conclude that the change in energy that powers behaviour to achieve goals has taken place within a person. The similarities of the three theories are that motivation is an encouragement for students to achieve a goal. These goals can arouse students' enthusiasm for learning and foster self-confidence, so students get encouragement to study well (Afriana et al., 2016; Oktiani, 2017; Uddiniyah & Silfia, 2019).

The motivation and learning outcomes of the students were primarily in the third grade in the odd semester for the Civics subject. Based on the observations, some students had a relatively low level of motivation, which affected student learning outcomes. The causes of non-achievement of motivation and learning outcomes that have not been maximized are caused by several things, including students not being able to focus because teachers use more lectures and learning methods that are less varied (Chu et al., 2017; Indriwati et al., 2019; Syaparuddin, S. et al., 2020). Based on observations made in third grade at SDN Mangunrejo 1, the researchers saw firsthand that the class conditions were not optimal during learning. The class teacher said that some students were not optimal when participating in learning. Moreover, students have not dared to convey their opinions or answers to the teacher and are reluctant to ask questions, and when asked, students are afraid to answer because they are afraid the answer will be wrong.

Based on the results of observations on Civic learning activities in third grade at SD Negeri Mangunrejo 1, it is known that there are causes for failing to achieve the minimum completeness of several students. The number of students who have yet to reach the KKM is because students need more focus and concentration when the teacher explains the material. When the teacher asks students, the teacher needs to get the correct answer from the student. The results of observations and interviews with class teachers obtained Civic learning information, and student learning outcomes were not following the KKM. The total number of third-grade students amounted to 30; 66.67% have yet to fulfil the KKM (20 students), and 33.33% have not fulfilled the KKM (10 students). Efforts to overcome these problems need to be carried out through practical learning activities in forming students so that they can learn independently without forgetting the cognitive, affective, and psychomotor aspects, one of which is by using project-based learning (Insyasiska et al., 2017; Jalinus et al., 2019).

The PBL model is a learning model that centers learning around projects (activities). PBL education increases student innovation. PBL is an instructional method that enables students to plan learning activities, collaborate on projects, and produce project results that can be presented to the others (Hartini, 2017; Relmasira et al., 2019). PBL aims to teach students to think critically, creatively, and rationally, to actively collaborate and communicate, and to be truthful; therefore, it is one of the learning innovations that can be implemented (Niswara et al., 2019; Saputra et al., 2014). Base on previous study project-Based Learning is an instructional method characterized by the following characteristics: 1) Learners make choices regarding a framework, 2) Students are presented with problems or challenges, 3). Students develop procedures to determine answers to posed problems or challenges, 4). Students are responsible for accessing and managing information collaboratively in order to solve problems, 5. The evaluation procedure is conducted continuously, 6). Learners periodically reflect on completed activities, 8). Learning environments are tolerant of errors and alterations (Redhana, 2019; Suwono et al., 2017).

Thus, Project-Based Learning is a method of instruction that leads to a training process based on real-world problems that students solve independently through specific activities (projects) (Lazic et al., 2021; Sholihah & Pertiwi, 2019). In an activity project as a learning process, the emphasis on fundamental problems is the most important aspect. Students utilizing the Project-Based Learning methodology gain knowledge through real-world or contextually relevant scenarios and problems. Therefore, everything is conducted in a dynamic manner involving group work, independent investigation, attainment of a high

level of comprehension, and development of individual and social skills (Bagus et al., 2022; Ilona et al., 2011).

From the conditions described above, a writer can see that third-grade students at SDN Manganrejo 1 have low motivation and learning outcomes. Therefore we need an appropriate learning model to overcome these problems. Regarding the failure to achieve learning in third grade at SDN Manganrejo 1, the researchers are trying to apply the Project Based Learning learning model as an alternative to education. Through the Project Based Learning model, it is expected to be able to improve learning outcomes. This is the importance of conducting classroom action assessments to improve students' motivation and learning outcomes (Heriyati, 2017; Indriwati et al., 2019). Based on these conditions, the researcher is interested in conducting Classroom Action Research. Thus, the research aims to increase motivation and student learning outcomes of Civics lessons in elementary schools.

## 2. METHOD

This study uses experimental quantitative methods. The experimental design used in this study was a pretest and posttest, which seeks to reveal causal relationships by involving a control class in addition to the practical course due to their different characteristics. The variables used are (1) the PjBL learning implementation variable, (2) the moderator variable, namely learning motivation, and (3) the dependent variable, namely learning outcomes (Sugiyono, 2016). The research population at SD N Manganrejo 1 was 120 students, with a sample of 30 students. Data collection techniques on learning motivation and learning outcomes by using a pretest-posttest and giving questionnaires to students. The data analysis technique uses a two-way analysis of variance to test the hypothesis. However, a requirement test was carried out, which included a normality test and a homogeneity test.

## 3. RESULT AND DISCUSSION

### Result

Before testing the hypothesis, it is necessary to try the requirements. The normality test of the distribution of scores is carried out on the learning outcome variables with Kolmogorov-Smirnov the result is show in Table 1.

Table 1. Normality Test

Model	Kolmogorov-Smirnov		
	Statistic	Df	Sig
Scores Learning Outcomes	85.196	52	0.005

Base on Table 1, the normality test results show that the significant level of learning outcomes is  $0.005 < 0.05$ , so the data is usually distributed. Then carry out a homogeneity test which can be seen as the similarity of the dependent variable score variants based on each particular independent variable score variation. Homogeneity test result is show in Table 2.

Table 2. Homogeneity test

F	df1	Df2	df3
13.658	2	49	0.000

Base on Table 2, the results of the homogeneity test show that  $0.000 < 0.05$ , so it has a homogeneous variant. So that the first hypothesis test is obtained  $H_0$ : there is no effect of applying the PjBL model and conventional learning on Civics subjects.  $H_a$ : there is an effect of applying the PjBL model and traditional wisdom to Civics subjects. To analyse this using the SPSS 22.0 statistical program. Significance test between learning methods is show in Table 3.

Table 3. Significance Test between Learning Methods

	Sum of Squares	Df	Mean Square	F	Sig.
Pjbl Model	248.433	11	22.585	83.467	0.000
Error	562.500	18	48.391		
Total	1362.167	29			

Base on [Table 3](#), the calculation results obtained  $F_{count} = 83.467$  while the value of F table  $dF_1 = 11$  and  $dF_2 = 0.125$  is 2.44 much larger. At the same time, the significant level is  $0.000 < 0.05$ . This means that  $H_a$  is accepted, and  $H_o$  is rejected. In testing the second hypothesis, there is no effect of learning motivation for students in Civics subjects.  $H_a$ : there is an influence of learning basis for students in Civics subjects. The significance test of learning motivation is show in [Table 4](#).

**Table 4.** the Significance Test of Learning Motivation

	Sum of Squares	Df	Mean Square	F	Sig.
Motivation	799.667	11	49.979	80.155	0.000
Error	562.500	18	48.391		
Total	1362.167	29			

Base on [Table 4](#), shows that the calculated F value for learning with learning motivation is 80,155. F table  $dF_1=11$  and  $dF_2 = 5.99$  is 16.26, while the significant level is  $0.000 < 0.05$ . This means that  $H_a$  is accepted,  $H_o$  is rejected, and the hypothesis reads: there is an effect of learning motivation on students in Civics subjects.

Testing the third hypothesis  $H_o$ : there is no relationship between the application of the PjBL learning model and learning motivation on learning outcomes in Civics subjects at SD N Mangunrejo 1.  $H_a$ : there is a relationship between applying the PjBL learning model and learning motivation on learning outcomes in Civics subjects at SD N Mangunrejo 1. The significance test of learning and motivation models is show in [Table 5](#).

**Table 5.** The Significance Test of Learning and Motivation Models

Source	Type II Sum Square	DF	Mean Square	F	Sig
PjBL Model Motivation	324.056	2	553.908	37.532	0.001
Error	562.500	18	48.391		
Total	1362.167	29			

Base on [Table 5](#) shows that the calculated F value for applying the Project Based Learning model and learning motivation is 37,532. F table  $[dF]_1=2$  and  $[dF]_2 = 5.58$  is 13.47, while the significant level is  $0.001 < 0.05$ . This means that  $h_a$  is accepted and  $H_o$  is rejected. The hypothesis reads that a relationship exists between applying the PjBL learning model and learning motivation on learning outcomes in Civics subjects at SD N Mangunrejo 1.

### Discussion

The application of the Project Based Learning (PjBL) learning model has been implemented well in the third class of SD Negeri Mangunrejo 1. Students' projects are real work in accordance with the reality in the workforce or the community. The project-based learning process to achieve competency attitudes, knowledge, and skills ([Anazifa & Djukri, 2017](#); [Widiyatmoko & Pamelasari, 2012](#)). The emphasis on learning lies in the activities of students to produce products by applying the skills of researching, making, analyzing, to presenting learning products in a natural way ([Sari et al., 2019](#); [Tasci, 2015](#)). This approach emphasizes that students work independently or in groups to produce natural products. Making a product requires motivation on internal factors such as concentration, curiosity, motivation, and needs. Motivation can affect the quality of achievement of learning outcomes in the Civics subject for third grade students at SD Negeri Mangunrejo 1 in the 2022/2023 academic year. For example, students with great motivation for Civics subjects will focus more attention than other students. Then, due to the intensive focus on the material, these students can study more actively and eventually achieve the desired achievements ([Heriyati, 2017](#); [Komalasari & Rahmat, 2019](#)).

The advantage gained by applying the Project Based Learning (PjBL) learning model and learning motivation in Civics subjects is that students' attention can be more focused through concrete observations and examples ([Garba et al., 2015](#); [Saputro & Rayahu, 2020](#)). Using the PjBL model in the teaching and learning process can increase the motivation of third-grade students at SD Negeri Mangunrejo 1 because students are more interested in paying attention to the teacher's explanation in presenting the subject matter. In addition to increasing student learning motivation, the PjBL model can also improve student learning outcomes in Civics subjects. The implications of this study provide an overview and understanding related to the effect of project based learning models on motivation and

learning outcomes of elementary civic education. This research will be useful for educators, especially elementary civic education. The limitation of this research lies in the narrow research scope which only involves one school institution. Suggestions in this study need to apply varied learning methods, especially the Project Based Learning model, in improving student learning outcomes and helping students to increase learning motivation so that students will have high responsiveness to complete learning tasks.

#### 4. CONCLUSION

The results of the analysis of the discussion data on the study results can be concluded that there is an influence of the application of the Project Based Learning model and conventional learning in third-grade PPKn subjects at SD Negeri Mangunrejo 1. There is an influence on learning motivation for students in third-grade civic subjects, and there is an interaction between the application of the learning model Project Based Learning and learning motivation on learning outcomes in Civics class III at SD Negeri Mangunrejo 1. From the results of research and data processing, it was found that from the application of the Base Learning project model, the conventional model and learning motivation on learning outcomes in PPKn class III at SD Negeri Mangunrejo 1, it turned out that the most influential was the application of the Project Based Learning (PjBL) model.

#### 5. REFERENCES

- Abdullah, R. (2021). Pencapaian Hasil Belajar Manajemen Pendidikan Dalam Perspektif Motivasi Mahasiswa. *Jurnal Intelektualita*, 10(1), 24–38. <https://jurnal.araniry.ac.id/index.php/intel/article/view/12619>.
- Abidin, Z., Karyono, H., & Rahayu, endang mastuti. (2021). Pengaruh model project based learning dan motivasi belajar terhadap hasil belajar pada mata pelajaran produktif di smk. *JUPI (Jurnal Ilmiah Penelitian Dan Pembelajaran Informatika)*, 06(01), 58–64. <https://doi.org/10.29100/jipi.v6i1.1619>.
- Afriana, J., Permanasari, A., & Fitriani, A. (2016). Implementation Project-Based Learning Integrated STEM to Improve Scientific Literacy Based on Gender. *Jurnal Inovasi Pendidikan IPA*, 2(2), 202–212. <https://doi.org/10.21831/jipi.v2i2.8561>.
- Anazifa, R. D., & Djukri. (2017). Project- based learning and problem- based learning: Are they effective to improve student's thinking skills? *Jurnal Pendidikan IPA Indonesia*, 6(2), 346–355. <https://doi.org/10.15294/jpii.v6i2.11100>.
- Bagus, I., Arnyana, P., Dwijendra, U., Ganesha, U. P., Teaching, C., Lingkungan, P., Dasar, S., & Education, J. (2022). Membentuk karakter peduli lingkungan pada siswa sekolah dasar melalui pembelajaran ipa. *Jurnal Education and Development*, 10(1), 207–212. <http://journal.ipts.ac.id/index.php/ED/article/view/3382>.
- Chu, S. K. W., Zhang, Y., Chen, K., Chan, C. K., Lee, C. W. Y., Zou, E., & Lau, W. (2017). The effectiveness of wikis for project-based learning in different disciplines in higher education. *Internet and Higher Education*, 33, 49–60. <https://doi.org/10.1016/j.iheduc.2017.01.005>.
- Dharma, S., & Siregar, R. (2015). Internalisasi Karakter melalui Model Project Citizen pada Pembelajaran Pendidikan Pancasila dan Kewarganegaraan. *JUPIIS: Jurnal Pendidikan Ilmu-Ilmu Sosial*, 6(2). <https://doi.org/10.24114/jupiis.v6i2.2293>.
- Ernata, Y. (2017). Analisis Motivasi Belajar Peserta Didik Melalui Pemberian Reward Dan Punishment Di Sdn Ngarangan 05 Kec.Gandusari Kab.Blitar. *Jurnal Pemikiran Dan Pengembangan Sekolah Dasar (JP2SD)*, 5(2), 781–790. <https://doi.org/10.22219/jp2sd.vol5.no2.781-790>.
- Garba, S. A., Byabazaire, Y., & Busthami, A. H. (2015). Toward the use of 21st century teaching-learning approaches: The trend of development in Malaysian schools within the context of Asia Pacific. *International Journal of Emerging Technologies in Learning*, 10(4), 72–79. <https://doi.org/10.3991/ijet.v10i4.4717>.
- Hartini, A. (2017). Pengembangan Perangkat Pembelajaran Model Project Based Learning Untuk Meningkatkan Kemampuan Berpikir Kritis Siswa Sekolah Dasar. *Jurnal Pendidikan Dan Pembelajaran Sekolah Dasar*, 1(2a), 6–16. <https://doi.org/10.30651/else.v1i2a.1038>.
- Herawann, K. D., & Sudarsana, I. K. (2017). Relevansi Nilai Pendidikan Karakter. *Jurnal Penjaminan Mutu Lembaga Penjaminan Mutu Institut Hindu Dharma Negeri Denpasar*, 3(2), 223–236. <http://ojs.uhnsugriwa.ac.id/index.php/JPM/article/view/1320>.
- Heriyati. (2017). Pengaruh Minat dan Motivasi Belajar Terhadap Prestasi Belajar Matematika. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 7(1), 22–32. <https://doi.org/10.30998/formatif.v7i1.1383>.
- Ilona, B., Márta, K., Ildikó, L., & Tímea, M. (2011). Technological support of web based project work in

- higher education. *2011 14th International Conference on Interactive Collaborative Learning, ICL 2011 - 11th International Conference Virtual University, VU'11, September*, 209–213. <https://doi.org/10.1109/ICL.2011.6059577>.
- Indriwati, S. E., Susilo, H., & Hermawan, I. M. S. (2019). Improving students' motivation and collaborative skills through Remap Jigsaw learning combined with modelling activities. *Jurnal Pendidikan Biologi Indonesia*, 5(2), 1–9. <https://doi.org/10.22219/jpbi.v5i2.7888>.
- Indy, R., Waani, F. J., & Kandowangko, N. (2019). Peran Pendidikan Dalam Proses Perubahan Sosial Di Desa Tumaluntung Kecamatan Kauditan Kabupaten Minahasa Utara. *Holistik: Jurnal Social and Culture*, 12(4). <https://ejournal.unsrat.ac.id/index.php/holistik/article/view/25466>.
- Insyasiska, D., Zubaidah, S., & Susilo, H. (2017). Pengaruh project based learning terhadap motivasi belajar, kreativitas, kemampuan berpikir kritis, dan kemampuan kognitif siswa pada pembelajaran biologi. *Jurnal Pendidikan Biologi*, 7(1), 9–21. <https://doi.org/10.17977/um052v7i1p9-21>.
- Jalinus, N., Syahril, & Nabawi, R. A. (2019). A comparison of the problem-solving skills of students in pJBL versus CPJBL model: An experimental study. *Journal of Technical Education and Training*, 11(1), 36–43. <https://doi.org/10.30880/jtet.2019.11.01.005>.
- Komalasari, K., & Rahmat. (2019). Living values based interactive multimedia in Civic Education learning. *International Journal of Instruction*, 12(1), 113–126. <https://doi.org/10.29333/iji.2019.1218a>.
- Lazic, B. D., Knežević, J. B., & Maricic, S. M. (2021). The Influence of Project-Based Learning on Student Achievement in Elementary Mathematics Education. *South African Journal of Education*, 41(3), 1–10. <https://doi.org/10.15700/saje.v41n3a1909>.
- Leal Filho, W., Shiel, C., Paço, A., Mifsud, M., Ávila, L. V., Brandli, L. L., Molthan-Hill, P., Pace, P., Azeiteiro, U. M., Vargas, V. R., & Caeiro, S. (2019). Sustainable Development Goals and sustainability teaching at universities: Falling behind or getting ahead of the pack? *Journal of Cleaner Production*, 232, 285–294. <https://doi.org/https://doi.org/10.1016/j.jclepro.2019.05.309>.
- Muhtar, T., & Dallyono, R. (2020). Character education from the perspectives of elementary school physical education teachers. *Jurnal Cakrawala Pendidikan*, 39(2), 395–408. <https://doi.org/10.21831/cp.v39i2.30647>.
- Nabillah, T., & Abadi, A. P. (2019). Faktor penyebab rendahnya hasil belajar siswa. *Prosiding Sesiomadika*, 2(1), 659–663. <https://journal.unsika.ac.id/index.php/sesiomadika/article/view/2685>.
- Niswara, R., Fita, M., & Untari, A. (2019). Pengaruh Model Project Based Learning Terhadap High Order Thinking Skill. *Mimbar PGSD Undiksha*, 7(2), 85–90. <https://doi.org/10.23887/jjpsgd.v7i2.17493>.
- Oktiani, I. (2017). Kreativitas Guru dalam Memotivasi Belajar Peserta Didik. *Jurnal Kependidikan*, 5(2), 216–232. <https://doi.org/10.24090/jk.v5i2.1939>.
- Pratama, F., Firman, & Neviyarni. (2019). Pengaruh Motivasi Belajar IPA Siswa Terhadap Hasil Belajar Di Sekolah Dasar Negeri 01. *Jurnal Ilmu Pendidikan*, 1(3), 280–286. <https://doi.org/10.31004/edukatif.v1i3.63>.
- Redhana, I. W. (2019). Mengembangkan Keterampilan Abad Ke-21 Dalam Pembelajaran Kimia. *Jurnal Inovasi Pendidikan Kimia*, 13(1). <https://journal.unnes.ac.id/nju/index.php/JIPK/article/view/17824>.
- Relmasira, S. C., Tyas, A., & Hardini, A. (2019). Meningkatkan Motivasi dan Hasil Belajar IPA dengan Menggunakan Model Pembelajaran Project Based Learning ( PjBL ). *Journal of Education Action Research*, 3(3), 285–291. <https://doi.org/10.23887/jear.v3i3.19448>.
- Retariandalas, R. (2017). Pengaruh Minat Membaca dan Motivasi Belajar Terhadap Prestasi Belajar IPA Siswa. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 7(2), 190–197. <https://doi.org/10.30998/formatif.v7i2.1529>.
- Santika, I. W. E. (2020). Pendidikan Karakter pada Pembelajaran Daring. *Indonesian Values and Character Education Journal*, 3(1), 8–19. <https://doi.org/10.23887/ivcej.v3i1.27830>.
- Saputra, D. I., Abdullah, A. G., Hakim, D. L., Studi, P., & Teknik, P. (2014). Pengembangan model evaluasi pembelajaran project based learning berbasis logika fuzzy. *Innovation of Vocational Technology Education*, 10(1), 13–34. <https://doi.org/10.17509/invotec.v9i1.5089>.
- Saputro, O. A., & Rayahu, T. S. (2020). Perbedaan Pengaruh Penerapan Model Pembelajaran Project Based Learning (PjBL) dan Problem Based Learning (PBL) Berbantuan Media Monopoli terhadap Kemampuan Berpikir Kritis Siswa. *Jurnal Ilmiah Pendidikan Dan Pembelajaran*, 4(1), 185–193. <https://doi.org/10.23887/jipp.v4i1.24719>.
- Sari, S. P., Manzilatusifa, U., Handoko, S., & Belakang, L. (2019). Penerapan Model Project Based Learning ( PjBL ) Untuk Meningkatkan Kemampuan Berfikir Kreatif Peserta Didik. *Jurnal Pendidikan Dan Pembelajaran Ekonomi Akuntansi*, 5(2), 119–131. <http://jurnal.fkip.unla.ac.id/index.php/jp2ea/article/view/329>.

- Sholihah, F. N., & Pertiwi, N. A. (2019). Penerapan project based learning untuk meningkatkan hasil belajar mahasiswa pada matakuliah dasar-dasar sains. *Edubiotik: Jurnal Pendidikan, Biologi Dan Terapan*, 4(2), 68–74. <https://doi.org/10.33503/ebio.v4i02.448>.
- Sugiyono, H. (2016). Metode kualitatif dan kuantitatif. *Cetakan Ke-23. Alfabeta, Bandung*.
- Surur, M., & Tartilla, T. (2019). Pengaruh Problem Based Learning Dan Motivasi Berprestasi Terhadap Kemampuan Pemecahan Masalah. *Indonesian Journal of Learning Education and Counseling*, 1(2), 169–176. <https://doi.org/10.31960/ijolec.v1i2.96>.
- Suwono, H., Malang, U. N., & Soemawinata, M. N. (2017). Science , Technology , Engineering and Mathematics Project Based Learning ( STEM-PjBL ) pada Pembelajaran Sains. *Pros. Seminar Pend. IPA Pascasarjana UM*, 2, 432–436. <http://pasca.um.ac.id/conferences/index.php/ipa2017/article/view/1099>.
- Syaparuddin, S., Meldianus, M., & Elihami, E. (2020). Strategi pembelajaran aktif dalam meningkatkan motivasi belajar PKN peserta didik. *Jurnal Pendidikan Guru Sekolah Dasar*, 1(1), 30–41. <https://ummaspul.e-journal.id/MGR/article/download/326/154>.
- Tascı, B. G. (2015). Project Based Learning from Elementary School to College. *Procedia - Social and Behavioral Sciences*, 186, 770–775. <https://doi.org/10.1016/j.sbspro.2015.04.130>.
- Uddiniyah, N., & Silfia, E. (2019). An analysis of students' motivation in learning English at SMAN 8 Kota Jambi academic year 2018/2019. *Journal Of English Language Teaching*, 3(2), 139–149. <http://jelt.unbari.ac.id/index.php/jelt/article/view/42>.
- Widiyatmoko, A., & Pamelasari, S. D. (2012). Pembelajaran berbasis proyek untuk mengembangkan alat peraga IPA dengan memanfaatkan bahan bekas pakai. *Jurnal Pendidikan IPA Indonesia*, 1(1), 51–56. <https://doi.org/10.15294/.v1i1.2013>.
- Wijaya, E. Y., Sudjimat, D. A., & Nyoto, A. (2016). Transformasi pendidikan abad 21 sebagai tuntutan pengembangan sumber daya manusia di era global. *Prosding Seminar Nasional Pendidikan Matematika*, 1, 263–278. <https://repository.unikama.ac.id/840/32/263-278> transformasi pendidikan abad 21 sebagai tuntutan pengembangan sumber daya manusia di era global.pdf.