JOURNAL OF SOCIAL SCIENCE
Printed ISSN: 2720-9938
Electronic ISSN: 2721-5202
jsss.co.id

DISCOVERY LEARNING MODEL TO IMPROVE COLLABORATIVE PANCASILA STUDENT PROFILES AND MATHEMATICS LEARNING OUTCOMES

Ramuni A
Public Junior High School of Sanggau 5, Sanggau, West Kalimantan, Indonesia
Email: ramunialbina@gmail.com

ARTICLE INFO

Date received : Juni 28, 2022
Revision date : July 19, 2022
Date received : July 27, 2022

Keywords:
Discovery learning; Pancasila student profile; collaboration; learning outcomes

ABSTRACT

This action research aims to improve the profile of collaborative Pancasila students and mathematics learning outcomes in class VIII students at Public Junior High School 5 Sanggau. This action research is single-class research. The implementation time starts from October 23 to November 8, 2021, and is divided into 4 meetings (pre-test, treatment 1, treatment 2, and post-test). The design used in this research is The One-Group Pre-test Post-test Design. This design was used in group research, class VIIIA, which was given treatment by applying the Discovery Learning of two-variable linear equation (PLDV) material. Based on the analysis of the observation sheet, an increase of 25% was obtained at the first 2 treatment meetings, 65% of students actively collaborated. In contrast, in the treatment, 90% of students actively collaborated. Student learning outcomes increased by 50%; the pre-test results showed 42.85%, and the post was 92.85%. In addition, the data processing results on the normality test showed that the pre-test was 0.197 > 0.05, meaning the data was normally distributed. The data homogeneity test showed sig 0.108 > 0.05 meaning the data was homogeneous. The T-test showed a significance = of 0.00, so it can be concluded that the hypothesis is accepted. means that there is an increase in the pre-test value with the post-test.

INTRODUCTION

The school environment is an important educational institution that plays a role in realizing a nation's development goals. National Education seeks to develop students' potential to become men of faith and reverence for God Almighty, noble, healthy, knowledgeable, skilled, creative, and independent, as well as democratic and accountable citizens (Indriani, 2017). To achieve this goal, the Ministry of Education and Culture has created an educational curriculum based on Pancasila (Saphira, 2022). Six profiles focus on fostering Pancasila students. The six profiles are referred to as the Pancasila Students profile, namely (1) noble character, (2) critical reasoning, (3) creativity, (4) global diversity, (5) independence, and (6) cooperation or collaboration. Pancasila students must know how to collaborate and work together (Herwati,

How To Cite: Ramuni, A. (2022). Discovery Learning Model to Improve Collaborative Pancasila Student Profiles and Mathematics Learning Outcomes. *Journal of Social Science. 3*(4). Doi https://doi.org/10.46799/jss.v3i4.384
E-Issn: 2721-5202
Published By: Ridwan Institute

2021). Collaboration is an activity that is part of cooperation which is one of the characteristics of intelligence in the future, namely the attitude needed to face the industrial era 4.0 (Syamsudini, 2021). By the current stage of the 4.0 era of the Industrial Revolution, the education world's use of technology necessitates the principal's involvement in guiding the learning process (Bafadal, Wiyono, Adha, Saputra, & Ariyanti, 2020). Moreover, Opportunities for students (e.g., enhanced student comprehension), teachers (e.g., improved teacher instruction), and school organization learning are related to teacher cooperation (e.g., adaption and innovation of curriculum). When teachers collaborate, they can encourage one another by sharing practices, assisting with crit,icism, and building novel instructional materials together (De Jong, Meirink, & Admiraal, 2022).

Pancasila is Indonesians' social identity, which is their knowledge that they belong to particular social groupings and the emotional and value importance of their membership (Meinarno, & Rahardjo, 2012). Strengthening the Pancasila student profile focuses on developing character and life skills through school culture, intracurricular and extracurricular learning in each individual student (Rachmawati, Marini, Nafiah, & Nurasiah, 2022). It should be noted that this Pancasila student profile is the vision and mission of the Ministry of Education and Culture for the next five years. Ministerial Regulation No. 22 of 2020 contains the Strategic Plan of the Ministry of Education and Culture between 2020 and 2024. The Pancasila Student Profile can be adopted via habituation, training, and growth (Sherly et al., 2021). Here teachers are required to make changes in designing learning in schools to create a golden generation of the nation's children who have the profile of Pancasila.

As a mathematics teacher, the author tries to take real action adapted to Ki Hajar Dewantara's philosophy in the form of the *Among* method by implementing a two-variable linear equation (PLDV) learning material integrated with the Pancasila student profile. The learning that is carried out gives freedom to develop as widely as possible and gives students space to collaborate, make their own decisions and dare to take risks. Discovery Learning is one of the learning models that trains the spirit of collaboration or cooperation among Pancasila students. In adopting the discovery learning model, the teacher acts as a tutor who provides students with opportunities to learn actively following the purpose of study (Ariani & Wachidi, 2018). Moreover, Math has essential worth, not simply numbers, since we do arithmetic problems, we become absorbed in it trough honesty, zeal, and thoroughness when doing math could considered as Pancasila values (Mariana, 2018). The author wants to develop students' thinking skills with collaboration so that students can understand the primary material that can be used to solve PLDV problems systematically. Thus, it is expected that student learning outcomes will increase.

Based on the results of the analysis of previous studies, it is known that in the field, many students experience errors in solving PLDV questions when studying individually. Students' difficulties in solving PLDV material questions individually are difficulties understanding the information provided and changing story questions into mathematical sentence forms. Students lack understanding of the PLDV concept, so students cannot determine the solution (Maspupah & Purnama, 2020). This has a shallow impact on learning outcomes. In addition, the results of interviews with mathematics teachers who were conducted randomly with two students in class VIIIA of Public Junior High School 5 Sanggau showed that mathematics learning outcomes declined during this pandemic due to the lack of activities carried out together, (1) the intensity of teacher and student discussions much reduced, (2) group work interaction (collaborating) with friends does not exist, and (3) if at home parents cannot be invited to collaborate as learning companions, this is what makes learning outcomes low.

In order to avoid loss of interaction in the learning process, the concept of independent learning during the pandemic has demanded that teachers innovate and creatively learn ICT. Innovation in online learning is interpreted as updates or changes generated by attempts to solve difficulties faced by a person or group and to better particular conditions or processes in society (Susilawati & Supriyatno, 2020). Since E-learning places a greater focus on students' accuracy and foresight in absorbing and digesting online-delivered information (Kartini, 2021). In online learning, teachers and students can collaborate and have the skills to use these innovative applications effectively. Whatsapp, as an ICT-based innovation, answers these limitations. Whatsapp can facilitate collaborative learning with audio-visual features, share and communicate ideas, and is claimed to be able to make the learning process pro-student and fun. While in offline learning, collaboration is done when face-to-face is limited in class. There is a limited group discussion of students with students and teachers.

From the explanation of the background that has been discussed, the authors are interested in conducting a research entitled "Discovery Learning to Improve the Profile of Pancasila Students, Collaboration and Mathematics Learning Outcomes in Class VIII Students of Public Junior High School 5 Sanggau."

METHOD

This action research is a single class. Where for real action, the implementation of activities at Public Junior High School 5 Sanggau is carried out for a period of 2 weeks, starting from October 26, 2021, to November 8, 2021, which is divided into 4 meetings (pre-test, treatment 1, treatment 2, post-test). In the first step before giving treatment to Discovery Learning, the researcher gave a pre-test (initial test) in the form of a set of multiple choice questions with 20 questions of Linear Equation Two Variables (PLDV). The design used in this research is The One-Group Pretest Post test Design (Sugiyono, 2018). This design was used in a group study, class VIIIA, which was given treatment in treatment in the application of the Discovery Learning model, then the test results were compared where the situation was before and after being treated.

Furthermore, in the second step, the researcher provides treatment by applying Discovery Learning during the study. In the third step, to see the effect, the researcher gave a post-test (final test) at the end of the study. The questions given during the post are similar to or the same as those in the pre, 20 PLDV material questions. To see an overview of the research design, see Figure 1 below.

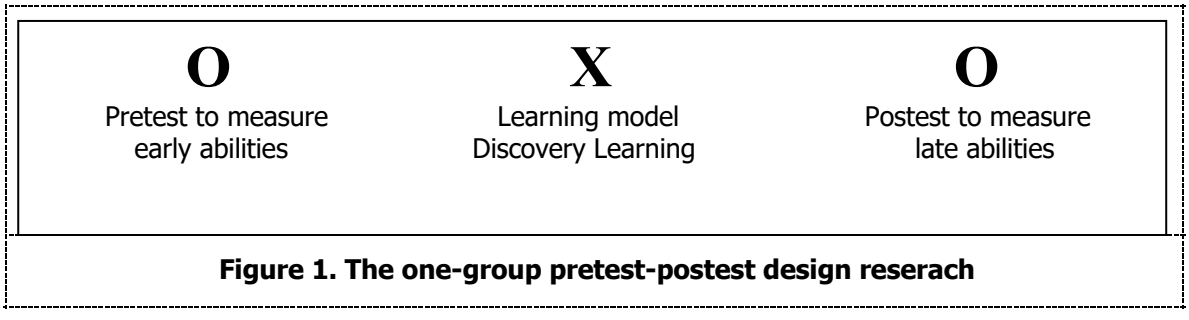

Figure 1. The one-group pretest-postest design reserach

The stages of Discovery Learning itself are carried out in treatment 1 and treatment 2: (1) Data collection: students are allowed to collect as much information as possible, read appropriate learning resources, observe objects related to PLDV problems, conduct interviews, or ask friends or other adults who understand the PLDV material, do a group problem-solving exercise test (collaboration). (2) Data Processing: In each working group, students are allowed

to process data on how to solve problems in LKS related to PLDV material. Students collaborate by collaborating in working groups, where the indicators are seen are adjusted to the assessment of the collaborative Pancasila student profile, including how to assist their friends, respect their friends' opinions, can exchange ideas with friends, and share tasks together and can show cohesiveness in the group. Of course, to solve PLDV problems on LKS given by the teacher. (3) Verification: Students carefully analyze whether or not the hypothesis they set. Each discussion working group was asked to present the results of their discussion sent via WA, and the other groups responded critically and politely to share discussion information. (4) Generalization: Students make conclusions about solving problems using substitution, elimination, and graph methods, a technique for solving two-variable linear equations (PLDV).

The data collection method used in the action research that the writer did was an interview sheet to find out the students' initial data, an observation sheet to determine student collaboration activities in discovery learning, and tests to determine the improvement of learning outcomes. The learning outcomes data were processed with statistical formulas, then analyzed with the help of the latest Statistical Product and Service Solution (SPSS) version 25. Activities in the data analysis carried out were testing requirements analysis consisting of normality test, homogeneity test, and T-test. Activities This test is carried out to know whether the hypothesis is accepted or rejected so that the increase or difference in student learning outcomes can be seen later.

RESULTS AND DISCUSSION

The research results presented in discovery learning are increasing the profile of Collaborative Pancasila Students and improving student learning outcomes. Student collaboration activities were carried out in treatment 1 and treatment 2. Where the instrument used was a student development observation sheet whose format was adapted from the Mathematics Education Research book (Lestari & Yudhanegara, 2015). Documentation of student collaboration activities showing the profile of Pancasila Students can be seen in Figure 2. The steps for implementing a single class using the discovery learning model are as follows:

a. Phase 1 (23 to October 25, 2021)

   We design research instruments by making lesson plans, worksheets, observation sheets, pre-test questions, and post-tests.

b. Stage 2 (October 26, 2021)

   The results of an interview with a mathematics teacher conducted randomly with two students in class VIIIA of Public Junior High School 5 Sanggau showed that mathematics learning outcomes declined during this pandemic due to the lack of joint activities (1) the intensity of teacher and student discussions was much reduced. , (2) group work interaction (collaborating) with friends does not exist, and (3) if at home parents cannot be invited to collaborate as learning companions, this is what makes learning outcomes low. At this second meeting, the teacher took initial data by giving pre-test and randomly taking interview data from students.

c. Stage 3 (November 2 and 4, 2021)

   1) Treatment 1 (November 2, 2021)

      They are learning using the Discovery Learning on PLDV material.

      Data collection: Students can collaborate with their group mates to understand what PLDV is in general form and how to solve PLDV.

      Data Processing: In this activity, students are given worksheets and then collaborate and work together in their respective working groups to solve PLDV problems using methods such as elimination, substitution, or mixed methods.

Verification: At this stage, the student's activity is to present the discussion results from the teacher's worksheets.

Generalization: In this last stage, students and groups make conclusions about the PLDV material and the method of solving it.

2) Treatment 2 (November 4, 2021)

Learning using the Discovery Learning on PLDV material in the second treatment discusses the sub-subjects of PLDV completion in the form of story questions. The activity steps are the same as in the first treatment, which differs only in the sub-materials discussed because it continues the previous material.

d. Stage 4 (November 8, 2021)

At this last stage, the activity carried out by the teacher is to give pre-test questions to all students of class VIIIA. The aim is to find out whether there are differences in student learning outcomes before and after being given treatment with the Discovery Learning learning model.

Figure 2. Student Collaboration in Discovery Learning

Figure 2 shows that student collaboration activities on the indicators of sharing tasks with group friends and showing cohesiveness are very clearly visible. This Discovery Learning was carried out on November 2, 2021, and November 4, 2021. More detailed assessment results to improve the collaborative Pancasila Student Profile in treatments 1 and 2 of the Discovery Learning can be seen in table 1.

Table 1
Results of the Assessment of the Collaborative Pancasila Student Profile on the Discovery Learning Model

Group	Collaboration	
(4 Students)	Treatment 1	Treatment 2
1	13	18
2	18	20
3	13	19
4	8	14
5	14	19
6	15	20
7	10	16
Σ	91	126
(%)	91/140*100 = 65%	126/140*100% = 90%

Collaboration Indicator:

a. Help others
b. Appreciate others' opinions
c. Discuss ideas with others

d. Do the group task with group mate
e. Show cohesive

Assesment criteria:
5 = If entire indicators are implemented
4 = If 4 indicators are implemented
3 = If 3 indicators are implemented
2 = If 2 indicators are implemented
1 = If 1 indicators are implemented
0 = If entire indicators are not implemented

Table 1 shows an increase in the percentage of group collaboration activities that reflect one of the profiles of Pancasila students. The analysis of the observation sheet obtained an increase of 25%, where at the first 2 treatment meetings, 65% of students actively collaborated. In contrast, at the third meeting of the treatment, 90% of students actively collaborated. Each group's assessment of collaboration activities is carried out individually, considering 5 (five) collaboration indicators and their assessment criteria. The author carried out student observations in groups as a mathematics teacher for class VIIIA and was assisted by 1 observer from a colleague at Public Junior High School 5 Sanggau. For learning Discovery Learning in class VIIIA, which consists of 28 students, is divided into 7 groups, each consisting of 4 students.

Table 2
Comparison of Pretest and Posttest Results

	Learning outcomes	
	Pre-test	Post-test
Highest score	90	100
Lowest score	30	60
Complete	12	26
n	28	28
∑ Completeness (%)	42,85	92,85

Table 2 shows that there is an increase in student learning outcomes. This can be seen from the pre-test and post-test scores. Student learning outcomes showed an increase of 50%, where the pre-test results showed 42.85% and the post-test 92.85%. The results changed after the implementation of Discovery Learning, which showed a significant increase where 14 students who completed it increased to 26 students who finished in class VIIIA.

There is a very striking difference, where before the treatment application of Discovery Learning, only 12 students completed.

The next step after the pre-test and post-test results are known, data processing and data analysis are statistically parametric with the help of the latest Statistical Product and Service Solution (SPSS) version 25. This aims to determine the distribution of data that is usually distributed, whether data variance is homogeneous, samples are mutually independent, and assumptions linearity. To see the results of the distribution of linear data can be seen in Table 3 below.

Table 3
Normality Test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	,136	28	,197	,941	28	,120
Postest	,168	28	,041	,917	28	,030
a. Lilliefors Significance Correction						

Table 3 shows the results of the normality test using Kolmogorov Smirnov Z. The data used are sig = 0, 197 (pre-test) and sig = 0.041 (post-test). normality test shows that the pre-test is 0.197 > 0.05, which means the data is normally distributed. Thus, it can be concluded that at the 95% confidence level, the data on students' prior knowledge on the subject of PLDV is normally distributed. Furthermore, to find out whether the results of the data variance from the samples analyzed are homogeneous can be seen in table 4.

Table 4
Homogeneity Table

		Levene Statistic	df1	df2	Sig.
Test results	Based on Mean	2,758	1	54	,103
	Based on Median	1,885	1	54	,175
	Based on Median and with adjusted df	1,885	1	49,985	,176
	Based on trimmed mean	2,666	1	54	,108

Table 4 shows the results of the homogeneity test. In the output above, the P-Value value is obtained as a sig based on a trimmed mean of 0.108. Because the data homogeneity test value shows sig 0.108 > 0.05, the data is homogeneous. Thus, the results of Levene's test using SPSS concluded that at the 95% level of data variance, the generalization ability of students who received learning using Discovery Learning was homogeneous. Furthermore, T-test results are carried out to find out whether there is a difference or increase in the pre-test and post-test. This is because the data obtained previously were all customarily distributed and homogeneous. For more details, the results of the Test Statistics can be seen in table 5.

Tabel 5
Test Statistics[a]

	Test results
Mann-Whitney U	139,500
Wilcoxon W	545,500
Z	-4,187
Asymp. Sig. (2-tailed)	,000
a. Grouping Variable: Prepostest	

Table 5 shows the results of the Test Statistics. In the output above, the test results show that the Asymp Sig (2-tailed) value <0.05, the hypothesis is accepted, meaning there is a difference or increase in the pre-test and post-test scores.

Based on the data analysis above, it has been proven that there is a significant difference between student learning outcomes before receiving Discovery Learning and learning outcomes that have received Discovery Learning. The thing that causes student learning outcomes after receiving Discovery Learning has a higher average and increase than before because Discovery Learning brings students more actively collaborating in learning. Although given the same material in group activities, students are not bored, even between students in

the group looks more cohesive, where if there are group members who do not understand their group mates will help solve the problem. This shows that Discovery Learning can improve the student profile of Pancasila collaboration and student learning outcomes.

CONCLUSION

Based on the data analysis that has been carried out, it is concluded that the Discovery Learning that has been applied can improve the student profile of Pancasila collaboration and student learning outcomes in mathematics subjects, especially in class VIIIA Public Junior High School 5 Sanggau Sanggau on PLDV material. This means that there is an increase in the pre-test and post-test values. This increase was seen from the analysis of the observation sheet; it was obtained an increase of 25% where at the first 2 treatment meetings, 65% of students actively collaborated. In contrast, in the treatment of the third meeting, 90% of students actively collaborated. Student learning outcomes showed an increase of 50%; the pre-test results showed 42.85%, and the post was 92.85%. In addition, the data processing results on the normality test showed that the pre-test was 0.197 > 0.05, meaning the data was normally distributed. The homogeneity test data showed sig 0.108 > 0.05, meaning the data was homogeneous. The T-test showed a significance = of 0.00. Thus it can be concluded that the hypothesis is accepted.

REFERENCES

Ariani, P., & Wachidi, W. (2018). The Implementation of Discovery Learning Model to Improve Student Activities And Learning Achievement Of Pancasila And Civic Education (PPKN) Of 7th Grade Students in SMPN 8 Rejang Lebong. *Jurnal Ilmiah Teknologi Pendidikan*, *8*(1), 78–87. Google Scholar

Bafadal, I., Wiyono, B. B., Adha, M. A., Saputra, B. R., & Ariyanti, N. S. (2020). Implementation of Principal Instructional Leadership in Facilitating Learning Independency Policy on 4.0 Industrial Era Orientation in Indonesia. *2nd Early Childhood and Primary Childhood Education (ECPE 2020)*, 206–211. Atlantis Press. Google Scholar

De Jong, L., Meirink, J., & Admiraal, W. (2022). School-based collaboration as a learning context for teachers: A systematic review. *International Journal of Educational Research*, *112*, 101927. Scopus

Herwati, A. (2021). *Project Based Learning Sebagai Wujud Merdeka Belajar dan Penanaman Profil Pelajar Pancasila Gotong Royong Pada Pembelajaran Jarak Jauh (PJJ) Mata Pelajaran Matematika Melalui Papan Virtual Padlet*. Jakarta: Guru Berbagi Kemendikbud.

Indriani, D. E. (2017). Character education based on Pancasila values through curriculum 2013 on primary education children in Madura. *JPDI (Jurnal Pendidikan Dasar Indonesia)*, *2*(1), 13–17. Google Scholar

Kartini, E. (2021). Tantangan Dalam Pembelajaran Perguruan Tinggi Dan Implementasi Merdeka Belajar Di Masa Pandemi Covid-19. *Journal Ilmiah Rinjani: Media Informasi Ilmiah Universitas Gunung Rinjani*, *9*(2), 43–50. Google Scholar

Lestari, K. E., & Yudhanegara, M. R. (2015). Penelitian pendidikan matematika. *Bandung: PT Refika Aditama*, *2*(3). Google Scholar

Mariana, N. (2018). Eksplorasi Nilai-nilai Pancasila untuk Mentransformasi Konteks dalam

Pembelajaran Matematika di Sekolah Dasar. *Jurnal Penelitian Pendidikan Guru Sekolah Dasar*, *6*(3). Google Scholar

Maspupah, A., & Purnama, A. (2020). Analisis kesulitan siswa mts kelas viii dalam menyelesaikan soal cerita sistem persamaan linear dua variabel (spldv) ditinjau dari perbedaan gender. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, *4*(1), 237–246. Google Scholar

Meinarno, E. A., & Rahardjo, W. (2012). Symbolic meaning of money, self-esteem, and identification with Pancasila values. *Procedia-Social and Behavioral Sciences*, *65*, 106-115. Scopus

Rachmawati, N., Marini, A., Nafiah, M., & Nurasiah, I. (2022). Projek Penguatan Profil Pelajar Pancasila dalam Impelementasi Kurikulum Prototipe di Sekolah Penggerak Jenjang Sekolah Dasar. *Jurnal Basicedu*, *6*(3), 3613–3625. Google Scholar

Saphira, H. V. (2022). Integrating Local Wisdom-Based Learning To Preparing The Pancasila Students' Profile, Yes or No? *International Journal of Current Educational Research*, *1*(1), 18–35. Google Scholar

Sherly, S., Herman, H., Halim, F., Dharma, E., Purba, R., Sinaga, Y. K., & Tannuary, A. (2021). Sosialisasi Implementasi Program Profil Pelajar Pancasila di SMP Swasta Sultan Agung Pematangsiantar. *Jubaedah: Jurnal Pengabdian Dan Edukasi Sekolah (Indonesian Journal of Community Services and School Education)*, *1*(3), 282–289. Google Scholar

Sugiyono. (2018). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta. Google Scholar

Susilawati, S., & Supriyatno, T. (2020). Online learning through WhatsApp group in improving learning motivation in the era and post pandemic COVID-19. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, *5*(6), 852–859. Google Scholar

Syamsudini. (2021). *Aplikasi Metode Discovery Learning dalam meningkatkan Kemampuan Memecahkan masalah, Motivasi Belajar dan Daya Ingat siswa*. Jakarta. Google Scholar