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THE INFLUENCE OF THE PJBL ON LOCAL WISDOM OF BALINESE CUSTOMARY TRADITIONS ON CREATIVE THINKING SKILLS AND GOTONG ROYONG CHARACTER IN PANCASILA EDUCATION SUBJECT FOR FIFTH GRADE ELEMENTARY SCHOOL STUDENTS

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ABSTRACT
The problems in elementary school are that Pancasila education learning has not integrated local wisdom, there is a low level of cooperation character, and students lack creativity. The purpose of this study is to determine the influence of the PjBL based on traditional Balinese local wisdom on creative thinking ability and gotong royong character in Pancasila Education subjects. Quantitative research method, non-equivalent control group experimental research design. The study population consisted of 195 students. The research sample was taken thru simple random sampling and consisted of: 32 students from SDN 7 Sumerta (experimental) and 32 students from SDN 4 Sumerta (control). Data collection: questionnaires and tests. The prerequisite tests for analysis consist of normality tests, variance homogeneity tests, covariance matrix homogeneity tests, inter-variable correlation tests, and linearity tests. Hypothesis testing was conducted using MANOVA. The results showed that the F value was 17.543 with a significance level of 0.000 for Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root. A Sig. value < 0.05 indicates a significant difference between the experimental and control groups simultaneously for the two dependent variables. The implications of the PJBL model based on Balinese local wisdom have a significant impact on creative thinking ability and cooperative character.

INTRODUCTION

Pancasila education at the elementary school level provides knowledge to students about the life of society and the state, provides the values of the nation's character, and trains students to be able to behave in accordance with the values of Pancasila. Among the six profiles of Pancasila students, the most prominent is faith, obedience to God, and noble national character trained in Pancasila Education, namely the character of gotong royong (Sanjaya, Suartama, Suastika, Sukadi, & Dewantara, 2021) The character of gotong royong causes students to be able to have a sense of

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mutual help so that when given the task group, the work is quickly completed to the maximum (Miao & Zhou, 2022). In addition to the character of mutual cooperation, Pancasila education at the elementary school level also teaches students to have high creativity which is in project-based assignment activities. Gotong royong can be understood as a culture that implements ethical values that are very important to be preserved because it encourages a sense of togetherness and the spirit of volunteerism among human beings (Aricindy & Wijaya, 2023; Maq et al., 2021; Martinez, 2022).

However, the reality is that in elementary schools, the Pancasila Education has not fully learned to implement the attitude of gotong royong and train students' creativity. Pancasila education in elementary schools is still theoretical and lacks practice. Teachers have used the group learning method but have not used a well-structured learning syntax because it has not been referred to a learning model, then group learning activities are only limited to discussions and questions and answers. Learning has not provided a direct and meaningful learning experience on how to practice gotong royong activities (Aries, 2022; Monika & Suastika, 2023). To realize the vision and mission, various ways are needed to achieve the goal. Technological progress also influences the existing culture; Therefore, new habits of cultural delivery are needed to keep it up to date with today's conditions (Wulandari et al., 2024). A symptom of the decline of the Gotong Royong culture in society is the public's ignorance about the evolution of Gotong Royong values (Siradjuddin, 2023). Therefore, it is necessary to implement a learning model that can train the character of gotong royong and the ability to think creatively through the Project Based Learning (PjBL) learning model.

In addition to applying the PjBL model, learning activities can also be integrated with local wisdom of Balinese traditional traditions. In order for the projects implemented to be truly meaningful, it is necessary to link with local wisdom to suit the context of students' lives. The principle of reaction to the learning model that contains Balinese local wisdom has led to problem-solving activities in the student group followed by the availability of various learning resources (Astawan et al., 2025; Sanjayanti et al., 2026; Suastika et al., 2020). In this era of globalization, it is very important to conduct research as an innovation for educators to be able to strive to preserve local Balinese wisdom (Suardipa et al., 2024; Wardani et al., 2024). Therefore, this study aims to find out The Influence of the Local Definition of Balinese Traditional Tradition on the Ability to Think Creatively and Character of Gotong royong in Pancasila Education Subjects for Grade V Elementary School Students.

METHOD

Quantitative research methods with a *quasi-experimental research* approach. That is, a design involving two groups of students: the experimental group and the control group, both of which are not randomly selected, but receive different treatments.

Table 1. Non-Equivalent *Control Group Design*

Groups	Pretest	Treatment	Posttest
Experiments	O_1	X	O_2
Controls	O_3	-	O_4

Description:
O_1 and O_3 = Initial test (creative thinking ability and gotong royong character)
X = Treatment (PjBL model based on local wisdom of Balinese traditional traditions)
O_2 and O_4 = Final test (creative thinking ability and gotong royong character)

The population in this study is all grade V elementary school students in the Untung Surapati Cluster, East Denpasar District, Denpasar City, for the 2025/2026 school year which totals 195 students. From the results of the draw, two schools were obtained as research samples, namely SD Negeri 7 Sumerta as an experimental group, and SD Negeri 4 Sumerta as a control group, so that the total sample was 64 students in class V. This random selection was carried out to ensure the objectivity and validity of the sampling method in the research, as well as to strengthen

Sosioedukasi
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the internal validity of the *quasi-experimental* design used.

The data collection method is to obtain data on creative thinking ability using an open-ended test method designed to reveal four indicators of creative thinking based on torrance's theory, namely *fluency*, *flexibility*, *originality*, *elaboration* and the character of gotong royong using a questionnaire method with measured dimensions, namely cooperation, social responsibility, care, and effective communication. All instruments have been tested and declared valid and reliable. The data analysis method is the analysis prerequisite test and the hypothesis test. The analysis prerequisite test consists of a normality test, a variance homogeneity test, a covariance matrix homogeneity, a correlation test between variables, a linearlity test, and an outlier test. Hypothesis testing was carried out with MANOVA to determine the difference between the experimental group (*Project Based Learning model* learning based on local wisdom of Balinese traditional traditions) and the control group (conventional learning). Hypothesis testing steps: pretest equivalence test, posttest influence test with manova, univariate follow-up test (ANOVA dependent variable), and gain score test.

RESULT AND DISCUSSION

Result

The results of the study consisted of the results of the analysis prerequisite test and the results of the hypothesis test. The following is explained about the results of the analysis prerequisite test consisting of the analysis prerequisite test consisting of the normality test, the variance homogeneity test, the covariance matrix homogeneity, the correlation test between variables, the linearity test, and the outlier test.

Table 2. Descriptive Statistical Test Results

Variable	Groups	N	Min	Max	Red	SD
Gotong Royong	Pretest Experiment	31	36	58	46,29	6,47
	Posttest Experiment	31	70	93	81,32	6,57
	Control Pretest	32	36	55	45,63	5,58
	Posttest Control	32	67	85	75,19	5,1
Creative Thinking	Pretest Experiment	31	24	36	30,77	3,43
	Posttest Experiment	31	33	45	39,48	3,6
	Control Pretest	32	25	40	32,22	4,26

Based on the results of descriptive statistical analysis of creative thinking skills and gotong royong character in grade V elementary school students, it can be seen that there is a difference in average scores between the experimental group and the control group both at the pretest and posttest stages. This analysis provides an initial overview of the condition of students' abilities before and after the implementation of the Project Based Learning (PjBL) model based on local wisdom of Balinese traditional traditions. Next is the test of data normality shown in the following table.

Variable	Classes	Df	Sig.
Pre-test Gotong Royong	Experiments	31	0.244
	Controls	32	0.304
Post-test Gotong Royong	Experiments	31	0.432
	Controls	32	0.4
Creative Thinking Pretest	Experiments	31	0.211
	Controls	32	0.302
Creative Thinking Posttest	Experiments	31	0.13

Sosioedukasi
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Volume 15 No. 1. Maret 2026 https://ejournal.unibabwi.ac.id/index.php/sosioedukasi/index

	Controls	32	0.063

Table 3. Data Normality Test Results

The normality test showed that all variables, both pretest and posttest for creative thinking skills and gotong royong character, had a significance value (Sig.) of more than 0.05 in both the experimental and control groups. This value indicates that all data is distributed normally.

The data homogeneity test was carried out using the Levene's Test statistical technique. The homogeneity test was carried out using pretest and posttest value data.

Table 4. Homogeneity Test Results

Variable	F	df1	df2	Sig.
Pre-test character gotong royong	0.307	1	61	0.582
Post-test of the character of Gotong Royong	1.749	1	61	0.191
Pretest of Creative Thinking Ability	1.446	1	61	0.234
Posttest of Creative Thinking Ability	0.179	1	61	0.674

Based on the results of homogeneity analysis, all variables showed a significance value (Sig.) greater than 0.05. In the variable Pretest of Gotong Royong Character, the Sig. value was 0.582; while the Posttest of Gotong Royong Character has a Sig. value of 0.191. Both indicate that the variance of the two groups is homogeneous. Similarly, in the variables of the Creative Thinking Ability Pretest and the Creative Thinking Ability Posttest, respectively obtained a Sig. value of 0.234 and 0.674, so that the data was stated to meet the assumption of variance homogeneity.

Box's Test of Equality of Covariance Matrices It was carried out to test whether the covariance matrix of the dependent variables in each group had similarities. This test is an important prerequisite in the MANOVA analysis, as the stability of the covariance between groups affects the accuracy of the model estimates (Isya et al., 2023; Kurnia et al., 2023).

Table 5. Results of the Variance Matric Equivalency Test

Box's M	**5,068**
F	1,629
df1	3
df2	693137,195
Sig.	0,180

Based on the output obtained, the Box's M value is 5.068 with an F value of 1.629, and the significance level (Sig. = 0.180) is greater than the limit of $\alpha = 0.05$. Significance values exceeding 0.05 indicate that there was no significant difference in the covariance matrix between groups.

The linearity test is carried out to ensure that the relationship between the pretest and posttest values of each variable has a linear relationship pattern. Linearity is assessed based on the value *Deviation from Linearity*, provided that the relationship is expressed linear if the significance value (Sig.) is greater than 0.05 (Putra & Nugraha, 2022)

Table 6. Linearity Test Results

Variable	F (Deviation from Linearity)	Sig.	Remarks
Posttest of Gotong Royong Character – Experiment	1,635	0,174	Linear (Sig. > 0.05)
Posttest of Creative Thinking Ability – Experiment	0,717	0,709	Linear (Sig. > 0.05)
Posttest of Gotong Royong Character – Control	2,119	0,079	Linear (Sig. > 0.05)
Posttest of Creative Thinking Ability – Control	0,358	0,963	Linear (Sig. > 0.05)

Based on the results of the analysis, it was obtained that all variables met the assumption of linearity. In the Posttest variable of the Character of Gotong Royong of the experimental group, the value of F was 1.635 with a Sig.

Sosioedukasi
JURNAL ILMIAH ILMU PENDIDIKAN DAN SOSIAL
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Volume 15 No. 1. Maret 2026 https://ejournal.unibabwi.ac.id/index.php/sosioedukasi/index

of 0.174, indicating a linear relationship between the pretest and the posttest. Similar things can be seen in the Posttest of Creative Thinking Ability of the experimental group, where the value of F is 0.717 with a Sig. of 0.709 is also above 0.05, so that the relationship is declared linear.

In the control group, the Gotong Royong Character Posttest showed an F value of 2.119 with a Sig. of 0.079, which is still greater than 0.05, thus meeting the linearity assumption. Meanwhile, the control group's Posttest of Creative Thinking Ability obtained an F value of 0.358 with a Sig. of 0.963 which far exceeded the significance limit, so the relationship was also declared linear.

Overall, the four study variables showed a significance value of *Deviation from Linearity* above 0.05, so it can be concluded that there is a linear relationship between pretest and posttest values in all conditions. The fulfillment of this assumption ensures that further analysis to test the effectiveness of *the Project Based Learning learning model* based on local wisdom can be carried out appropriately and validly.The correlation test was carried out on the bound variable to determine the level of correlation between the learning outcome variable and the science literacy variable.

Table 7. Correlation Test Results

		Creative Thinking Posttest
Post-test Gotong Royong	Pearson Correlation	0,247
	Sig. (2-tailed)	0,060
	N	63

The results of the correlation test showed that the value of Sig. (2-tailed) = 0.060, which is greater than the significance limit of 0.05. This means that the relationship between the posttest value of gotong royong character and the posttest of creative thinking ability is not statistically significant. Thus, there is insufficient evidence to conclude that the two variables have a meaningful relationship at a significance level of 5% (Wahyuni et al., 2020).

After all the analysis prerequisites are met, namely the normality test and the variance homogeneity test, the next step is to conduct an Independent t-test on the pretest data. This test aims to assess whether there is a difference in initial ability between the experimental group and the control group before being given treatment in the form of PjBL learning based on local wisdom of Balinese traditional traditions.

Table 8. Independent T-test Results

Variable	**Mean Difference**	**t count**	**Sig.**	**Remarks**
Pre-test character gotong royong	0,665	0,438	0,663	No significant difference
Pretest of Creative Thinking Ability	-1,444	-1,479	0,144	No significant difference

Based on the table above, in the pretest variable of the gotong royong character, the calculated t value of 0.438 is smaller than the t of table 2.000, and the significance value (Sig. 2-tailed) is 0.663 which exceeds the limit of $\alpha = 0.05$. The mean difference between the two groups (Mean Difference = 0.66532) was not statistically significant, so it can be concluded that there was no significant difference in the character of gotong royong between the experimental and control groups before treatment.

Similar results were found in the pretest variable of creative thinking ability. The calculated t-value of –1.479 is smaller than the t of table 2.000, and the significance value of 0.144 is also greater than 0.05. Average difference (*Mean Difference* = –1.44456) does not show a statistically significant difference. Thus, both groups have a level of creative thinking ability

which is relatively the same before the intervention was carried out. Overall, the results of this pretest equivalence test indicated that the experimental group and the control group had homogeneous basic conditions, so that the changes that occurred in the posttest stage could be assessed as a result of the PjBL learning treatment given, not due to differences in initial ability between groups.

After all prerequisite tests for MANOVA analysis are met, the next step is to conduct a hypothesis test to

Sosioedukasi
JURNAL ILMIAH ILMU PENDIDIKAN DAN SOSIAL
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Volume 15 No. 1. Maret 2026 https://ejournal.unibabwi.ac.id/index.php/sosioedukasi/index

determine the influence of *the Project Based Learning model* based on the local wisdom of Balinese traditional traditions on students' creative thinking ability and gotong royong character simultaneously.

Table 9. Manova Test Results

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	0,996	8281,506b	2,000	60,000	0,000
	Wilks' Lambda	0,004	8281,506b	2,000	60,000	0,000
	Hotelling's Trace	276,050	8281,506b	2,000	60,000	0,000
	Roy's Largest Root	276,050	8281,506b	2,000	60,000	0,000
Classes	Pillai's Trace	0,369	17,543b	2,000	60,000	0,000
	Wilks' Lambda	0,631	17,543b	2,000	60,000	0,000
	Hotelling's Trace	0,585	17,543b	2,000	60,000	0,000
	Roy's Largest Root	0,585	17,543b	2,000	60,000	0,000

Based on the table above in the Class section, namely the experimental group and the control group as treatment factors. The test results showed that the four multivariate indicators yielded an F value of 17.543 with a significance level of 0.000 on *Pillai's Trace, Wilks' Lambda, Hotelling's Trace*, and *Roy's Largest Root. A Sig*. value of < 0.05 indicates that there is a significant difference between the experimental group and the control group simultaneously in the two dependent variables.

Thus, this MANOVA result provides strong evidence that the *Project Based Learning* based on local wisdom, Balinese traditional traditions have a significant effect on students' creative thinking skills and gotong royong character, when viewed simultaneously. This finding confirms that the application of the PjBL model not only improves one of the variables, but also has a comprehensive impact on both aspects of character and ability of students in Pancasila Education subjects.

After obtaining the results of the MANOVA test which showed a significant simultaneous difference between the experimental group and the control group in creative thinking ability and gotong royong character, the analysis was continued with the test *Between-Subjects Effects*. This test aims to determine the influence of the model *Project Based Learning* based on local wisdom of Balinese traditional traditions on each dependent variable separately, namely posttest of creative thinking ability and posttest of gotong royong character. Thus, this test provides detailed information about how much of a difference occurs in each variable after the treatment is given.

Table 10. Test Results *Between- Subjects Effects*

Dependent Variable	F	Sig.	R Square
Posttest of Creative Thinking Ability	19.265	0,000	0.24
Post-test of the character of Gotong Royong	17.202	0,000	0.22

Based on the results of the *Between-Subjects Effects* test, it was found that the class variable as a treatment factor had a significant influence on the two dependent variables. In the posttest variable of creative thinking ability, the F value was 19.265 with a significance value of 0.000, which was below the limit of $\alpha = 0.05$. This shows that there is a significant difference in creative thinking skills between students who follow the *Project Based Learning learning model* based on local wisdom of Balinese traditional traditions and students who follow *STAD Type Cooperative Learning* learning. The *R Square* value of 0.240 indicates that 24 percent of the variation in creative thinking ability scores is influenced by differences in treatment.

Similar results were also seen in the posttest variable of the character of mutual cooperation, where the value of F was 17.202 with a significance value of 0.000 indicating that the differences between groups were statistically significant. This means that PjBL learning based on local wisdom has a real influence on improving the character of student mutual cooperation. The R Square value of 0.220 indicates that 22 percent of the variation in the gotong royong character score is explained by the difference in treatment between the experimental group and the control group.

Sosioedukasi
JURNAL ILMIAH ILMU PENDIDIKAN DAN SOSIAL
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Volume 15 No. 1. Maret 2026 https://ejournal.unibabwi.ac.id/index.php/sosioedukasi/index

Discussion

The influence of the PjBL model based on Balinese traditional local wisdom on creative abilities in Pancasila learning

Figure 1. Balinese Gamelan Dancing and Playing Project

The implementation of PjBL based on Balinese traditional local wisdom can be seen in figure 1. female students carry out the Balinese Dance dance project and there are several groups of male students choosing the project of playing Balinese gambelan, students can cooperate and practice their creativity, with these activities indicating the success of PjBL in increasing student creativity.

Figure 2. Ogoh-Ogoh Making Project

The implementation of PjBL based on Balinese traditional local wisdom can be seen in figure 1, male students choose a project to make ogoh-ogoh, students can work together and practice their creativity, with this activity indicating the success of PjBL in improving the character of mutual cooperation. PjBL is one of the learning model options to develop students' creative thinking skills (Ahmad et al., 2024; Aiman et al., 2024; Dewi et al., 2023). The application of PjBL also trains students' resilience in facing difficulties through aspects of self-control related to social relationships related to difficulties and psychomotor skills (Ayu et al., 2023; Isya et al., 2023). The Project Based Learning learning model is an innovative learning model that can be used by teachers to encourage students to conduct collaborative investigations and apply their knowledge to discover new things (Ayu et al., 2023; Nic et al., 2022; Suryanata et al., 2025). PjBL begins with the main problem to be solved, where students set goals and approach the problem creatively and critically from a variety of perspectives. PjBL has an impact on students applying theoretical ideas directly, turning concepts into concrete solutions, and in the process, becoming more confident and empowered (Gupta & Gupta, 2022; Kong et al., 2024; Lin et al., 2021).

Sosioedukasi
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Volume 15 No. 1. Maret 2026 https://ejournal.unibabwi.ac.id/index.php/sosioedukasi/index

The Influence of the PjBL Model based on Balinese Traditional Local Wisdom on the Character of Gotong royong in Pancasila Learning

Figure 2. Balinese Gamelan Dancing and Playing Project

The implementation of PjBL based on Balinese traditional local wisdom can be seen in figure 2, female students carry out the Balinese Dance dance project and there are several groups of male students choosing the project to play Balinese gambelan, students can cooperate and practice their creativity, with this activity indicating the success of PjBL in increasing student creativity. The implementation of the PjBL model can influence students to project management to face the challenge of training highly skilled personnel with practice-oriented and motivating educational methods for the future success of the project-based sector and their organizations (Aaltonen & Elina, 2022; Lehtinen et al., 2022). PjBL emphasizes on a collaborative inquiry-based teaching approach where students integrate, apply, and build on their knowledge while collaborating to solve challenging problems This is because future generations need to be able to solve global environmental problems, it is very important for children to experience such a way of working in the classroom (Markula & Aksela, 2022; Retnowati et al., 2020). PjBL aims to produce graduates who think broadly and have a well-rounded personality, suitable for career development and social engagement on a global scale (Kholifah et al., 2025).

The contribution of learning based on the teaching of cultural values in enhancing global diversity and religious moderation is to help students become citizens who are committed to diversity, are highly relevant to young generations who will face the ever-uncertain global challenges and work in multicultural environments, and support the formation of more inclusive and respectful attitudes towards the differences of individuals or groups with different backgrounds (Diatmika & Rahayu, 2025; Juandi, 2025; Meilita et al., 2022; Siregar et al., 2025).

CONCLUSION

The conclusion showed that the F value was 17.543 with a significance level of 0.000 in *Pillai's Trace, Wilks' Lambda, Hotelling's Trace*, and *Roy's Largest Root*. The *Sig*. value < 0.05 which means that there is a significant difference between the experimental group and the control group simultaneously in the two dependent variables, which means that the Project Based Learning *model* based on local wisdom of Balinese traditional traditions has a significant effect on students' creative thinking ability and gotong royong character, when viewed simultaneously. The implication of this research is that students gain project experience that is in accordance with the customs of the surrounding area. The suggestion for the next research is to be able to carry out experimental research by integrating local wisdom with learning models that are relevant to the demands of the times in other learning.

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Sosioedukasi
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