

# The Impact of PJBL (*Project Based Learning*) Model On Grade Iv Students' Arts, Culture, and Crafrftsmanship Learning Outcomes

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## Abstract

The research aimed to examine the effect of PJBL model (Project Based Learning) on learning outcome at SBdP at the fourth grade student of SDN Jepang 05 Kudus. The design of the research was quasi-experimental with noquivalent control group design. The population of the research was fourth grade student of SDN Jepang 05 Kudus 2016/2017. The sample collection techniques used Nonprobability Sampling with saturated sampling technique. The amount of the sample were 25 students for experiment class and 23 students the control class. The data collection techniques used test, observation, and documentation. The data analysis employed: normality test, homogeneity, average difference test and N-Gain test. The results of the research showed that t test obtained t calculation of 0.000 <0,05 so that Ha accepted and Ho rejected. This indicates that used PjBL model has significant influence on student activity and learning outcome at SBdP which has been also proven through the control class gain index of 0.399 (Medium), and the experimental class gain index of 0.701 (High). Student activity of experiment class was higher than control class. The research concluded that the use of Project Based Learning model gave a significant difference of influence on the activity and the student's learning outcome on the material making the leaf bone craft in SBdP learning.

Keywords: PjBL Model; SBdP Learning; The leaf bone craft; Elementary School.

## 1. INTRODUCTION

The learning referring to Kurikulum 2013 for all primary and secondary schools is implemented based on *scientific approach* comprising 5 steps, i.e.: (1) observing; (2) questioning; (3) collecting information; (4) associating; and (5) communicating. This statement is included in *Permendikbud Nomor 81 A Tahun 2013 Lampiran IV* (Decree of Minister of Education and Culture: 81A/2013 Appendix IV).

*Undang-Undang Nomor 20 Tahun 2003* (Republic of Indonesia Act: 20/2003) Chapter X Article 37 denotes that one of the compulsory contents of the curriculum for primary and secondary schools is the subject of arts and culture. Arts, Culture, and Craftsmanship, as ordered in *PP No. 32 Tahun 2013* (Government Regulation: 32/2013), replacing of *PP No. 19 Tahun 2005* (Government Regulation:19/2005) on National Standards of Education which explains clearly about the contents modification of arts, culture, and craftsmanship which does not only cover one subject, as the culture itself basically covers various life aspects. The subject of arts and culture in primary education contextually is taught concretely, completely, and comprehensively which covers all students' developmental aspects including fine arts, music, dancing, and craftsmanship through thematic approach.

The subject of Arts and Culture is the learning activities presenting esthetic, artistic, and creative artworks rooted on norms, values, attitudes, and products of the nation's arts and culture. The learning of arts in primary and secondary schools

aims to raise the awareness of arts and esthetics in conception, appreciation, presentation, and psychological-educative domain to develop the students' personalities positively. Arts and Culture teaching in primary school is intended to build the students' conation, creativities, ethical, and esthetical (Setiawan, *dkk*, 2017:5).

The real fact going on in a number of primary schools shows that the learning of arts is still conducted top-down. This kind of approach creates one-way communication. This kind of learning process makes the students' creativities and independence not develop normally.

Based on the field study on content standards implementation Arts, Culture, and Craftsmanship, I found a fact that the primary schools in common do not employ the specific teacher to teach Arts, Culture, and Craftsmanship, including SDN Jepang 05 Kudus in which the subject of Arts, Culture, and Craftsmanship has been taught by classroom teacher, so the implementation of Arts, Culture, and Craftsmanship learning does not meet the quality requirement for content standards as expected because the teaching teachers' pedagogical competency is insufficient. This certainly will have significant impact on the students' learning outcome in the subject of Arts, Culture, and Craftsmanship as shown clearly in the scores they attain after Mid-term Exam I taken by grade IVA and IVB students of SDN Jepang 05 Kudus in school year 2016/2017. The lowest average collective scores attained by the grade IVA students are those of Mathematics and Arts, Culture, and Craftsmanship (76.5). The lowest average Mid-term collective test scores attained by the grade IVB students are those of Social Science

and Arts, Culture, and Craftsmanship (77.6). It means that the students in the two grade IVs have the lower average score for the subject of Arts, Culture, and Craftsmanship that that for the other subjects..

Based on the introductive study through interview with grade IV teachers, I found a fact that the learning of Arts, Culture, and Craftsmanship in SDN Jepang 05 Kudus still does not run at best. The schedule of learning activities for the contents of Arts, Culture, and Craftsmanship, as revealed by the classroom teacher, is still limited in drawing pictures and singing activities. One of the unpracticed lesson materials is creating the handicrafts. Fine arts, particularly handicrafts creation should be taught to the students as the enrichment of the arts teaching materials. As this kind of fine arts will stimulate the students' creative skill on esthetic side, so it can develop their conative competency. Furthermore the teaching teacher has not used the available things around as the tool to enhance the students' creativity in the classroom. The advance indication for this is that the students' enthusiasm to get involved actively in the classroom learning of Arts, Culture, and Craftsmanship will tend to increase. It is because they can practice and apply directly the artisanship lesson they have learnt in classroom to then be applied in their daily life.

Creating fine artworks, basically, is a process of idea building and fine arts media processing to manifest the new shapes and illustrations. To construct ideas, the students need to be involved in various activities, such as drawing pictures, making observations, note-taking, creating sketches, and investigating the other pictures and shapes. In addition, the students should also be involved in the observation process on the personal issues, social phenomena, universal topics, fantasies, and imagination. The fine arts criticisms learning means introducing and get them practicing using fine arts terms and phrases to describe and to give comments on fine artworks such as those concerning the tactile, spatial, and kinesthetic aspects. The arts criticism learning also encourages the ability to understand the meanings of the visual symbols, shapes, and metaphors (Atip Nurharini, 2013:108).

The development and enrichment of the arts learning materials should be conducted by classroom teacher to improve students' Arts, Culture, and Craftsmanship learning outcome. Therefore, the teacher must try to apply the appropriate, attractive, and innovative learning method which will give the students the chances to interact with the teacher, to cooperate with their friends, to share their opinions, as well as to be able to remember all the learnt concepts. The teacher play major role as facilitator, supervisor, and feedback giver. The thematic integrative learning of the subject of Arts, Culture, and Craftsmanship can

be implemented by applying *Project Based Learning* (PjBL).

PjBL Model is the teaching and learning strategy to engage the students in a beneficial project to solve the people in the neighborhood's problem. The students are coached to *problem solver* by making analysis on an issue, and then they make exploration, collect information, making interpretation, and making assessment during executing the project related to the investigated issue. This kind of learning enables the students to enhance their creativities in case of designing and executing project which can be used to solve the existing issue. Project-based learning is based on the theory of constructivism and constitutes *student centered learning*. The learning process through *Project Based Learning* allows teacher to "learn from students" and "learn with students" (Sani, 2015:172).

Hosnan (2016:325) furthermore reveals the phases of the implementation of *Project Based Learning* comprising: a). project determination, b). designing project completion steps, c). schedule arrangement of project execution, d). project accomplishment facilitated and monitored by the teacher, e). report making project output presentation/publication, f). evaluation of project output and process.

In addition to the application of the appropriate model for be Arts, Culture, and Craftsmanship learning method, the media utilization is also important as the media of communication service during the delivery of the learning materials to the students. The content of the basic competency 4.14 is creating the handicrafts in form of accessories using various materials and techniques. Therefore, I would create handicrafts from the leaf skeleton. The created leaf blade handicraft can be in form of key hanger, made of soursop or sugar apple leaves boiled with natriumhydroxide (NaOH). The usage of different materials from the common key hanger materials is expected to attract the students' attention and interest, to boost the students' creativities and learning outcome in Arts, Culture, and Craftsmanship class.

Based on the explanation above, finally I was moved to conduct a further experimental research on the impact of PjBL (*Project Based Learning*) Model on the students Arts, Culture, and Craftsmanship learning output particularly the lesson of handicrafts from leaf skeleton for grade IV students of SDN Jepang 05 Kudus.

## 2. RESEARCH METHODS

This investigation applies *Quasi Experimental Design* which has control group, but it cannot fully function to control the external variables affecting the execution of the

experiment. The design type applied is *Nonequivalent Control Group Design*. The research Population is all grade IV students of SDN Jepang 05 Kudus. The research samples class IVA (23 students) as control classroom and class IVB (25 students) as experimental classroom.

The dependent variable in this research is the application of *PjBL* model. The dependent variable is Arts, Culture, and Craftmanship learning particularly lesson of creating handicrafts using leaf skeleton comprising the students learning activities and output. The data are collected through: test, observation and documentation. The written tests are conducted in form of *pretest* and *posttest* to reveal the students initial knowledge and the result of the treatment conducted in the Arts, Culture, and Craftmanship learning. Observation is used to observe the students learning activities during Arts, Culture, and Craftmanship learning in the lesson of creating handicrafts from leaf skeleton. Documentation using photos and videos is conducted to get the supporting data for the research products.

The instrument testing is conducted before starting the research. The data output are tested and then validity test, reliability test, test tem difficulty analysis, and differentiability checking are conducted. From the instrument testing, the test item is regarded as valid if  $r_{count} > r_{table}$ , with  $r_{table} = 0.396$ . Formula of the reliability testing for the multiple-choice question items is *SPSS 16.0*-assisted *KR 20 (Kuder Richadson)* formula, and then the reliability coefficient is checked Guilford classification. The item difficulty level can be found through index of difficulty formula in which the difficulty index 0.0 shows that the question is too difficult, while index score (1.0) shows that the question is too easy. The question differentiability is called discrimination index at range 0.0 to 1.00. the amount of questions able to be used for the research evaluation is 25, after conducting all the testing mentioned before.

Data analysis uses pretest scores for initial data analysis and posttest scores for final data analysis. The data analysis techniques applied are normality test and homogeneity test, using *SPSS 16.0* program. The data is stated as normal if the significance rate  $> 0.05$  and if significance rate  $< 0.05$  then the data is regarded as abnormal. Data is regarded as homogenous if its significance rate  $> 0.05$  and data is regarded as inhomogeneous if significance rate  $< 0.05$ . Final data analysis is conducted using *N-gain* test and t test. *N-gain* test result can be acquired through formula: (Sudjana, 2005:239)

$$N-gain = \frac{x_{posttest} - x_{pretest}}{skor\ maksimal - x_{pretest}}$$

*N-gain* achievement criteria: 0.00-0.29 (low), 0.30-0.69 (moderate), 0.70-1.00 (high). Meanwhile, t-test is calculated using the following formula:

$$t_{hitung} = \frac{x_1 - x_2}{s \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \text{ dengan varians } \\ \text{totalnya yaitu } s^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}$$

The faster testing can be conducted by *SPSS Versi 16.0*-assisted *Independent Sample Test* (t test) to find if it has significant impact on the learning output of creating handicrafts from leaf skeleton included in Arts, Culture, and Craftmanship by applying *PjBL* Model. Testing criteria:  $H_0$  is accepted if significance rate  $> 0.05$  and  $H_0$  is rejected if significance rate  $< 0.05$ .

### 3. RESULTS AND DISCUSSION

#### 1. Pretest Data

**Table 1.** *Pretest* Scores Data in Control Classroom and Experimental Classroom

Interval	Control Classroom		Experimental Classroom		
	F	Percentage	F	Percentage	
3-6	2	8.70%	5-8	5	20%
7-10	7	30.44%	9-12	8	32%
11-14	12	52.16%	13-16	10	40%
15-18	2	8.70%	17-20	2	8%
Highest	16		Highest	18	
Lowest	3		Lowest	5	
Average	10.91		Average	11.92	

*Pretest* contains 25 questions in the highest score in control classroom is 16 and the lowest score is 3 as well as the average score is 10.91. While, the highest score in experimental classroom 18 and the lowest score is 5 as well as the average score is 11.92.

#### 2. Data of Students Activeness

*Treatment* is conducted four times in control classroom and experimental classroom. The students' activeness in experimental classroom shows the higher rate than that in the control classroom. This is shown by the observation that reveals comparison of the students' learning activeness score in control classroom (IVA) and experimental classroom (IVB) during the session I-IV that rises significantly. From the conclusion of the collected observation data, in fact, the raise of students learning activeness in experimental classroom is higher than control classroom although the two classrooms experience a number of learning activeness rises.

### 3. Posttest Data

**Table 2.** Posttest Scores Data in Control Classroom and Experimental Classroom

Interval	Control Classroom		Experimental Classroom		
	F	Percentage	F	Percentage	
8-11	2	8.70%	14-16	3	12%
12-15	7	30.43%	17-19	4	16%
16-19	9	39.13%	20-22	10	40%
20-23	5	21.74%	23-25	8	32%
Highest	23		Highest	25	
Lowest	8		Lowest	14	
Average	16.22		Average	20.72	

Posttest is conducted to assess the impact result both in control classroom and experimental classroom after completing four times-treatment. The lowest score in control classroom is 8 and the highest score is 23 as well as the average score is 16.22. The lowest score in experimental classroom is 14 and the highest score is 25 as well as the average score is 20.72.

Before, I conduct normality test and homogeneity on, and the result is that significance rate of experimental classroom and control classroom for both Kolmogorov-Smirnov and Shapiro-Wilk columns, significance rate of. The two classrooms  $> 0.05$  so pretest scores data of control classroom and experimental classroom can be stated as normally distributed.

**Table 3.** Normality Test for Pretest Data of Control Classroom and Experimental Classroom

Investigated Group	Kolmogorov-Smirnov		Shapiro-Wilk	
	Statistic	df	Sig. Rate	Sig. Rate
Pretest Experimental Group	.170	25	.062	.965
Pretest Control Group	.140	23	.200	.959

Pretest homogeneity test score is  $0.399 > 0.05$  which shows that it is homogenous data, and the conclusion able to be drawn is that the two classrooms are in the nearly similar condition, so the control classroom is treated using the direct teaching method and the experimental classroom is treated using PjBL model in 4 sessions.

**Table 4.** Homogeneity Test for Pretest Data

Levene Statistic	df1	df2	Sig
.725	1	46	.399

Data posttest has also been tested for its normality and homogeneity, the result shows that significance rate of both control classroom and experimental classroom for both Kolmogorov-Smirnov and Shapiro-Wilk columns  $> 0.05$  so the posttest data of both control classroom and experimental classroom are distributed normally.

**Table 5.** Normality Test for Posttest Data

Investigated Group	Kolmogorov-Smirnov		Shapiro-Wilk	
	Statistic	df	Sig. Rate	Sig. Rate
Posttest Experimental Group	.149	25	.161	.934
Posttest Control Group	.108	23	.200	.980

Homogeneity testing for posttest data is found from the students learning outcome in both control classroom and experimental classroom which shows that it is homogenous at significance rate  $0.190 > 0.05$ .

**Table 6.** Homogeneity Test for Posttest Data

Levene Statistic	df1	df2	Sig
1.770	1	46	.190

Based on SPSS calculation for t test, the result is as follows:

**Table 7.** Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Posttest	Equality variances assumed	1.770	.190	4.56	46	.000	4.503	.987	2.516	6.490
	Equality variances not assumed			4.509	40.938	.000	4.503	.999	2.486	6.519

The significance rate (2-tailed) is  $0.000 < 0.05$ . It means that  $H_0$  is accepted and  $H_a$  is rejected. So the application of the PjBL model has significantly different impact on the students' activeness learning outcome in Arts, Culture, and Craftmanship learning, particularly the lesson of creating handicrafts from the leaf skeleton between experimental classroom (PjBL model) and control classroom (direct teaching). From the N-Gain assessment results, we can find that the gain index of control classroom is 0.399 (Fair), while the gain index of experimental classroom is 0.701 (High).

**Table 8.** *N-Gain* Assessment Result

No.	Classroom	Score of Average Point		N-Gain	Remarks
		Pretest	Posttest		
1.	Control	10.91	16.22	0.399	Fair
2.	Experimental	11.92	20.72	0.701	High

The investigation on the application of PjBL Model during Arts, Culture, and Craftsmanship learning above undoubtedly has given us the real illustration of the significant impact on the grade IV students learning activities and output in SDN Jepang 05 Kudus. This is strengthened by several studies previously conducted, such as by Jagantara, *et.al/* (2014) in which they state that: (1) found significant difference on students Biology learning output between those learning in project-based learning (PjBL) model from those learning in direct teaching model; (2) found significant difference of students Biology learning output for the student group in case of visual, auditory, and kinesthetic learning style between those learning in project-based learning model from those learning in direct teaching model.

The study conducted by Susilowati, *et.al.* (2013) draws the similar conclusion, that project-based learning has significant impact on students learning output in lesson of Human Digestion System. Meanwhile Ambarwati, *et.al.* (2015) explain that the impact GQM-based PjBL Model on the students' mathematical communication skill and self-confidence is effective, and it is shown by this fact: (1) the students' mathematical communication skill and self-confidence in experimental classroom meets individual and collective learning mastery criteria, (2) the students' mathematical communication skill and self-confidence in experimental classroom is higher than that in control classroom and the impact of the students' self-confidence on their mathematical communication (41.5%). That significant impact is shown by Andana, *et.al.* (2014) who states that project-based learning has significant impact on grade IV students Natural Science learning output in Gugus V Kecamatan Tegallalang.

Kaldi, *et al.* (2009) in his findings strengthens my opinion that the students will take benefit from project-based learning in acquiring knowledge and collective work in craftsmanship content, and conventional teaching is less beneficial to the students than learning through personal experience. So do Cakici & Turkmen (2013) who shows that the children academic achievement rises significantly through the project-based activities, although their response to the knowledge and science remains.

#### 4. CONCLUSION

The application of *PjBL* Model to Arts, Culture, and Craftsmanship learning in classroom IVB SDN Jepang 05 Kudus as experimental classroom emphasize the practical activities. The practice done is creating handicrafts from leaf skeleton comprising key hanger. In the phase of project determination, I applied the teaching material of creating leaf handicrafts from skeleton. In the phase of designing, I set up the learning purpose and steps into lesson plans completed with the schedule of the investigation implementation. In the phase of facilitation and monitoring, the delivery of the learning materials is conducted in fur sessions. The teacher explains about the definition, function, tool, materials, and the shape of the handicrafts made from the leaf skeleton as well as the way to create it. The teacher also demonstrate the steps to create the handicrafts from leaf skeleton either through Guru tutorial video or direct practice, stating from process of boiling, rubbing, coloring, and giving comments on the practice that the students do. In the phase of guiding, the students with their groups in their own creativities realize the practice under the teacher's monitoring and instruction. The successfully-made product subsequently is presented before class to publish. Meanwhile, the teacher also makes evaluation on the process or product of the project implemented by the students. The learning in grade IV as control classroom is centered on the teacher who explains the learning materials and is listened. The learning takes place verbally and merely visually and the students do not do direct practice, creating various handicrafts from the leaf skeletons.

Based on the observation on the students' activities in Arts, Culture, and Craftsmanship learning through the application of PjBL Model in experimental classroom, I found a fact: a). the students look more enthusiast and more prepared to focus on Arts, Culture, and Craftsmanship learning, b). the students have questioning skill and higher self-confidence to express their opinion as well as are more confident to their works before the class present, c). discussion runs in two-way, d). the students perform the good cooperative manner in group, e). the students can design the decorative items well and can produce the handicrafts from the leaf skeleton. The other benefits taken from the application of *PjBL* Model in experimental classroom are: 1). Being able to improve the students' problem-solving skill; 2). Making the students more actively find a solution to problem; 3). Giving the students the real experience to organize a project, to manage time, and to manage the available resources such as tools and materials to complete the task; 4). Engaging the students in the information collection learning and applying it in real life. Arts, Culture, and Craftsmanship learning with creating the handicrafts from leaf skeleton as learning material in fact can improve the

students' learning activities in both control classroom and experimental classroom. The improvement of students learning activities in experimental classroom, however, is much more significant than the improvement in control classroom. From the experimental research through application of *Project Based Learning* (PjBL) Model on its impact on the grade IV students learning outcomes in SDN 05 Jepang in which the class IVA playing role as control classroom and class IVB playing role as control classroom, I can draw a conclusion that *Project Based Learning* (PjBL) model has significant impact on the students' learning outcome during Arts, Culture, and Craftsmanship learning with creating the handicrafts from leaf skeleton as learning material in class IV in SDN 05 Kudus.

The improvement of Arts, Culture, and Craftsmanship learning is based in the assessment result of t-test and N-gain test which shows the emergence of its impact on the grade IV students learning outcome improvement in Arts, Culture, and Craftsmanship learning with creating the handicrafts from leaf skeleton as learning material.

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