Research and Development in Education (RaDEn)

Research Article

Student competencies in intracurricular learning through project-based learning in Muhammadiyah junior high school

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Abstract: This research provides an overview of the application of the Project-based Learning (PjBL) model in intracurricular learning in forming student competencies. The objectives of this research are: (1) Describe the implementation of the PjBL model in intracurricular learning which can improve student competence in a Muhammadiyah junior high school in East Java, (2) Describe the competency achieved by students by implementing the PjBL model in intracurricular learning in a school Muhammadiyah junior high school in East Java, (3) Describe the school's obstacles and solutions in implementing the PjBL model in intracurricular learning at a Muhammadiyah junior high school in East Java. The research method used is descriptive research with a qualitative approach. The instruments in this research include in-depth interviews, observation and documentation studies. This research provides important information regarding the successful implementation of PjBL. All teaching modules have mentioned the implementation of PjBL, but only one teaching module clearly describes the PjBL-based learning steps. The average implementation of the PjBL model is 63% (sufficient category). Most students responded very well to the learning process carried out by the teacher. The range of student scores is 70 to 90. There are several problems and solutions taken by the school in an effort to make the implementation of PjBL successful. The research findings can be an illustration of examples or variations of good practice in implementing the PjBL model in intracurricular learning in implementing the independent curriculum in an effort to build student competency.

Keywords: Muhammadiyah; PjBL; student competency

Citation: Chamisijatin, L., & Zaenab, S. (2024). Student competencies in intracurricular learning through project-based learning in Muhammadiyah junior high school. *Research and Development in Education (RaDEn)*, *4*(1), 285-303. https://doi.org/10.22219/raden.v4i1. 32558

Received: 1 March 2024
Revised: 13 April 2024
Accepted: 16 April 2024
Published: 18 April 2024

1. Introduction

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and the skills needed by themselves, society, nation and state (Fajarwati et al., 2016; Rostiana, 2023). Education is carried out to bring students to have competence. Competency demands in the 21st century require students to be able to think critically, creatively, communicatively and collaboratively (Kim et al., 2019; Thornhill-Miller et al., 2023). In the Merdeka curriculum, it is termed Learning Outcomes, which means competence and character achieved after completing learning within a certain period of time (Sufyadi et al., 2021).

The structure of the junior high school curriculum according to the Independent Curriculum is divided into two, namely: (a) intracurricular learning; and (b) a project to strengthen the profile of Pancasila students (Kepmendikbudristek, 2022). Intracurricular learning activities for each subject refer to learning outcomes. In an effort to achieve these learning outcomes, educational units and educators have the freedom to determine learning activities and teaching tools in accordance with learning objectives, the context of the educational unit, and the characteristics of students. Learning is carried out in an

interactive, inspiring, fun, challenging learning atmosphere, motivating students to participate actively and providing sufficient space for initiative, creativity, independence in accordance with the students' talents, interests and physical and psychological development (Permendikbudristek, 2022). One learning method that has great potential and is recommended to meet public and state expectations as stipulated in state regulations is Project-Based Learning (PjBL). The PjBL model is a learning model whose learning process is directed at activating students to build knowledge, skills as well as values and attitudes through direct experience (de la Torre-Neches et al., 2020; Zhang & Ma, 2023). The PjBL model is a learning model that focuses on students' ideas, namely forming their own picture of relevant topics or events and problems that are in accordance with the experiences that students have in everyday life (Halimatusyadiyah et al., 2022; Turcotte et al., 2022).

Several studies have found the influence of PjBL on student learning outcomes. The use of a learning model with a scientific approach based on local Papuan wisdom influences the learning outcomes of class VIII students at Muhammadiyah Junior High School (Yulianti et al., 2023). The PjBL learning model has a positive and significant effect on student learning outcomes in class VIII at State Junior High Schools (Sabi et al., 2021). Apart from influencing PjBL results, it also influences other skills. There is a significant interaction effect between the PjBL model and students' critical thinking skills on students' Pancasila education learning outcomes and citizenship (Nurhayati et al., 2021). The advantages of implementing the PjBL model are increasing students' learning motivation, problem solving abilities, activeness in solving complex problems, collaborative climate, communication skills, skills in managing resources, also providing learning and practical experiences in organizing projects, providing comprehensive learning experiences. complex and designed to develop according to the real world, involving students to learn to take in information and demonstrate the knowledge they have, then implement it in the real world, and make the learning atmosphere enjoyable (Nurfitriyanti, 2016). The development of a PjBL model influences students' ability to find research problems in learning strategy courses (Chamisijatin et al., 2023). The implementation of the PjBL model in Muhammadiyah Vocational Schools forms a character of integrity seen from students' responsibility and honesty in working on teacher projects (Ansyah & Handayani, 2022). Student activity in the learning process increased by 35% (Sahtoni et al., 2017). The use of PjBL also has a good response from students in learning. The use of the PjBL method in science subjects received a good response from students (Anggraini & Wulandari, 2020). In the context of higher education, PjBL has also been proven to improve and develop various abilities of prospective teacher students (Alkautsar et al., 2023; Hindun & Husamah, 2019; Husamah & Rahardjanto, 2018; Rahardjanto et al., 2019; Yayuk & Husamah, 2019). Various previous research-as has been mentioned-more shows the role of the PjBL model. These researches do not specifically explain the application of the PjBL model in implementing the Independent Curriculum (Hamna & Ummah BK, 2023; Ilham & Amal, 2023) which has been launched by the Indonesian government in an effort to build student competency. This is important, because the framework used is on more diverse subjects and the context is general competencies, as is the focus of the independent curriculum.

The implementation of the PjBL model is greatly influenced by the methods and techniques used by teachers. This means that it is necessary to analyze what kind of PjBL model can influence increasing student competence. The PjBL syntax used is: (1) start with the essential question, (2) design a plan for the project, (3) create a schedule, (4) monitor the students and the progress of the project, (5) assess the outcome, and (6) evaluate the experience (Kemendikbud, 2014; Nirmayani & Dewi, 2021). This syntax can actually still be combined with other models, or its use can be considered by other approaches. It is also possible that the syntax is still the same but varied in learning methods and techniques. As found by Chamisijatin et al, the development of a project-based learning

model has an effect on the ability to find research problems, implement PjBL with thematic (Chamisijatin et al., 2023). Previous research findings combine PjBL with the STEAM approach which encourages learning to be more interesting, enjoyable, fosters enthusiasm, provides satisfaction in learning, makes it easier for students to understand the material and demands active student participation (Shofatun et al., 2017).

The findings of the use of PjBL which can influence learning outcomes and student character above, of course, use different implementations. For this reason, it is necessary to explore the characteristics of certain PjBL models that will produce student competence. What needs to be considered in implementing PjBL is that PjBL principles must be used. As Tinenti said, the following are the main requirements for using the Project Based Learning model to develop the learning process in the classroom, namely: 1) Mastery and deepening of the material, and 2) Mastery of scientific skills (Tinenti, 2018). Meanwhile, the characteristics of project-based learning include: (1) Students make decisions about a framework, (2) There are problems or challenges posed to students, (3) Students design a process to determine solutions to the problems or challenges posed. (4) Students are collaboratively responsible for accessing and managing related information and solving problems by connecting to the real world and authentic issues. (5) The evaluation process is carried out continuously, (6) Students periodically reflect on the activities they have carried out, (7) The final product of the learning activity will be evaluated qualitatively, (9) Learning is carried out as tolerant of errors as possible (Ambarita et al., 2021).

A Muhammadiyah Junior High School in East Java was chosen for analysis because the school has implemented an independent curriculum independently for the 2022-2023 academic year. The school has tried to register as an implementer of the Independent Curriculum but has not yet been determined, so that the school independently implements the Independent Curriculum. The factual conditions regarding the impact of implementing the Merdeka Curriculum on learning and the actual form of implementation in learning (in this case in the form of implementing the PjBL model) are not yet known. Therefore, it is at this point that the urgency of this research is felt. The objectives of this research are (1) to describe the implementation of the PjBL model in intracurricular learning which can improve student competence in a Muhammadiyah junior high school in East Java; (2) describe the competencies achieved by students by implementing the PjBL model in intracurricular learning at a Muhammadiyah junior high school in East Java; and (3) describe the school's obstacles and solutions in implementing the PjBL model in intracurricular learning at a Muhammadiyah junior high school in East Java. The benefit or contribution of this research is to provide an overview of the application of the PjBL model to intracurricular learning in forming student competencies.

2. Materials and Methods

2.1 Types of research

This research method is descriptive research with a qualitative approach. It is classified as descriptive research because this research tries to describe conditions that have occurred, namely current conditions. Research involves the process of collecting data through factors supporting the research object (Arikunto, 2010). A qualitative approach is an approach to exploring and understanding the meaning of individuals or groups related to social problems which can be used to interpret, explore, or gain a deeper understanding of certain aspects of human beliefs, attitudes, or behavior. Qualitative research is research that aims to understand events about what is experienced by research subjects, for example behavior, perceptions, motivations, actions, as a whole and describe them in the form of words and language (Moleong, 2017). Qualitative research is a part of ex post facto research because researchers do not manipulate the conditions of existing variables and directly look for the existence of variables. There are three considerations that are the reasons for using this method, namely; 1) qualitative methods are easier to adapt to plural

realities; 2) connecting directly between researchers and respondents; 3) more sensitive and able to adapt by sharpening the collective influence on the value patterns faced. The use of a qualitative approach in analyzing teaching and learning modules - in this case PjBL - has several advantages. A qualitative approach allows researchers to understand - and of course provide an in-depth understanding to the public - about the context, dynamics (strengths/advantages, shortcomings/weaknesses), and interactions that occur in the classroom. These things are quite difficult to measure using only quantitative methods. By focusing on direct observation, interviews, and content analysis, a qualitative approach allows revealing substantive aspects that are not clearly visible through quantitative data. In the practical realm, this allows schools and teachers as module developers to adapt learning materials to students' needs and characteristics more precisely, promoting more effective and relevant learning, and in line with the spirit of implementing the Independent Curriculum.

2.2 Research Subjects and Objects

Research subjects are parties related to those being researched (informants or sources) to obtain information related to research data which is a sample from a study. The subjects/respondents in this research were the principal, deputy principal for curriculum and four teachers at a Muhammadiyah junior high school in East Java. Teacher respondents were selected using purposive sampling techniques (Sugiyono, 2017) representing class VII and Class VIII. Meanwhile, the research object is the problem topic to be researched which is related to the research subject, namely in the form of characteristics related to the research subject. This research has research objects, including: Syntax and methods as well as PjBL techniques and student competencies. PjBL syntax and methods and techniques: (1) Students make decisions about a framework, (2) There are problems or challenges posed to students, (3) Students design a process to determine solutions to the problems or challenges posed. (4) Students are collaboratively responsible for accessing and managing related information and solving problems by connecting to the real world and authentic issues. (5) The evaluation process is carried out continuously, (6) Students periodically reflect on the activities they have carried out, (7) The final product of the learning activity will be evaluated qualitatively, (9) Learning is carried out as tolerant of errors as possible. Student competencies are learning achievements, namely competencies and character that are reflected in the Pancasila Student Profile. This means that what is observed is knowledge, skills and attitudes.

2.3 Data Types and Sources

The types of data used in this research are primary data and secondary data. Primary data consists of: the results of interviews with school community data sources consisting of the principal, deputy curriculum 4 subject teachers, secondary data obtained from documentation studies of learning plans (teaching modules) and assessment data.

2.4 Data collection technique

The instruments in this research include in-depth interviews, observation and documentation studies. Observations are carried out systematically using observation guidelines and non-systematic without using instruments. Non-systematic observation to observe student and teacher activities in implementing intracurricular learning using PjBL. The observation guide is used as a record of things that occur during the activity process, then the results of the observation are interpreted

2.5 Data Analysis Techniques Data Analysis Techniques

The data that has been collected is then analyzed. Data analysis was carried out descriptively. The steps taken to analyze and interpret qualitative research data are, 1) preparing and organizing the data; 2) explore and code the database; 3) describe findings

and form themes; 4) represent and report findings; 5) interpret the meaning of the findings; and 6) evaluate the accuracy of the findings.

3. Results

3.1 Implementation of the Project-Based Learning Model

Learning is carried out in cultural arts (fine arts) subjects with teaching modules as presented in Figure 1, Social Sciences with teaching modules as presented in Figure 2, and Indonesian with teaching modules as presented in Figure 3.

MODUL AJAR
SENI BUDAYA (SENI RUPA)
KELAS 7 FASE D

Nama Penyusun	[redacted]
Satuan Pendidikan	SMP MUHAMMADIYAH [redacted]
Jenjang / Tahun	SMP / 2023 - 2024
Alokasi waktu	9 JP (3 Pertemuan)
Model Pembelajaran	PJBL (Project Based Learning)
Metode Pembelajaran	Kerja Kelompok
PROFIL PELAJAR PANCASILA	1. Gotong royong 2. Bernalar Kritis 3. Kreatif
KOMPETENSI AWAL	Peserta didik mempelajari peralatan, bahan dan prosedur untuk menggambar, mewarnai, membentuk, memotong dan merekat karya seni rupa 2 dimensi dan 3 dimensi
ELEMEN	Mencipta (creating)
CAPAIAN PEMBELAJARAN	Pada akhir fase D, Peserta didik mampu menciptakan karya seni dengan menggunakan dan menggabungkan pengetahuan elemen seni rupa atau prinsip desain dan ketrampilan yang telah dipelajari sebelumnya, dalam kinteks ekspresi pribadi atau sesuai topic tertentu.
TUJUAN PEMBELAJARAN	1. Peserta didik mampu menciptakan karya gambar ornament dengan menggunakan dan menggabungkan pengetahuan elemen seni rupa atau prinsip desain dan ketrampilan yang telah dipelajari sebelumnya, dalam konteks ekspresi pribadi atau sesuai topic tertentu. 2. Peserta didik terbiasa menggunakan alat, bahan dan prosedur dasar yang tepat dalam mewarnai karya gambar ornament.

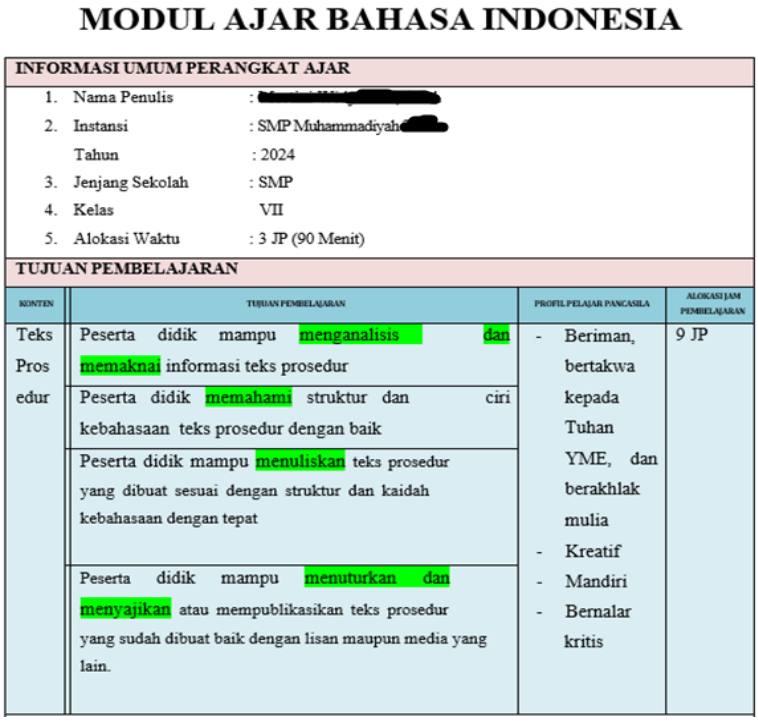
Figure 1. Cultural Arts (Fine Arts) teaching module

IPS-Letak Indonesia dan Komponen Peta

Pertemuan Pertama, Jum'at 5 Januari 2024
Pukul 07.30 WIB – 09.00 WIB

Nama Penyusun	[redacted]
Satuan Pendidikan	SMP Muhammadiyah [redacted]
Tahun Disusun	2024
Jenjang Sekolah	SMP
Alokasi Waktu	Pertemuan Pertama → 3 JP (90 Menit)
Fase	D (SMP 7-9)
Profil Pelajar Pancasila	• Bergotong royong • Berkebhinekaan Global • Bernalar Kritis • Kreatif
Sarana Dan Prasarana	• Alat: Laptop, LCD, Speaker, Gadget • Sumber Belajar: Budhi, Wono Setya. 2013. Bupena IPS SMP/ MTs Kelas VII. Jakarta: Erlangga
Peserta Didik	Peserta Didik Reguler Kelas VII berjumlah 28 siswa
Model Pembelajaran	Project Based Learning (PJBL)
CAPAIAN PEMBELAJARAN	
Peserta didik mampu memahami dan memiliki kesadaran akan keberadaan diri dan keluarga serta lingkungan terdekatnya	
TUJUAN PEMBELAJARAN	
1.1.1 Setelah melakukan pembelajaran peserta didik diharapkan mampu menjelaskan pengertian Peta. 1.1.2 Setelah melakukan pembelajaran, peserta didik diharapkan mampu menjelaskan komponen Peta. 1.1.3 Setelah melakukan pembelajaran, peserta didik diharapkan mampu mengidentifikasi letak Indonesia secara astronomis dan geografis	

Figure 2. Social Sciences Teaching Module



MODUL AJAR BAHASA INDONESIA

INFORMASI UMUM PERANGKAT AJAR

1. Nama Penulis : [redacted]
2. Instansi : SMP Muhammadiyah[redacted]
   Tahun : 2024
3. Jenjang Sekolah : SMP
4. Kelas VII
5. Alokasi Waktu : 3 JP (90 Menit)

TUJUAN PEMBELAJARAN

KONTEN	TUJUAN PEMBELAJARAN	PROFIL PELAJAR PANCASILA	ALOKASI JAM PEMBELAJARAN
Teks Prosedur	Peserta didik mampu menganalisis dan memaknai informasi teks prosedur Peserta didik memahami struktur dan ciri kebahasaan teks prosedur dengan baik Peserta didik mampu menuliskan teks prosedur yang dibuat sesuai dengan struktur dan kaidah kebahasaan dengan tepat Peserta didik mampu menuturkan dan menyajikan atau mempublikasikan teks prosedur yang sudah dibuat baik dengan lisan maupun media yang lain.	- Beriman, bertakwa kepada Tuhan YME, dan berakhlak mulia - Kreatif - Mandiri - Bernalar kritis	9 JP

Figure 3. Indonesian Language Teaching Module

Based on the analysis of the teaching module documents, it can be seen that all teaching modules mention the implementation of PjBL. However, only one teaching module clearly describes the PjBL-based learning steps, namely basic questions, designing product plans, preparing manufacturing schedules, monitoring project activity and progress, testing results, and evaluating learning experiences. Thus, it can be said that the majority of teachers have not consistently compiled correct teaching modules, especially in outlining the stages or steps of learning.

After the learning process, observations were made of the implementation of the PjBL model, the results of which are summarized in Table 1. Based on the Table 1, it can be said that the implementation of the PjBL model in arts and culture subjects is 81%, social studies is 90%, and Indonesian is 64%. Thus, the average implementation of the PjBL model is 78.3% (good category).

Table 1. Observations on the implementation of the PjBL model in three subjects

Activity	Information Activities	Cultural Arts (Fine Arts) 3 observers			Social science 3 observers			Indonesian 4 observers		
		Implementa-bility		Information	Implementa-bility		Information	Implementa-bility		Information
		Yes	No		Yes	No		Yes	No	
Initial activity	The teacher opens the lesson and gives greetings.	3	0	The teacher says hello before starting the lesson	3	0	The teacher starts the lesson at 07:36	4	0	The teacher starts the lesson at 8:05, by saying hello.
	Students pray together before starting learning.	3	0	With the teacher's direction, students are asked to pray together	3	0	With teacher guidance, students pray together	3	0	Students who are late are allowed to enter
	The teacher checks the students' attendance	0	3	Teachers do not check student attendance	3	0	The teacher checked the students' attendance, then the students sang songs together from Sabang to Merauke	4	0	The teacher invites students to pray together
	The teacher conducts an apperception asking about previous learning	3	0	The teacher asked about previously studied material, only a few students answered correctly	3	0	The teacher links the material to previous learning	4	0	The teacher checks the students' attendance

Activity	Information Activities	Cultural Arts (Fine Arts) 3 observers			Social science 3 observers			Indonesian 4 observers		
		Implementa-bility		Information	Implementa-bility		Information	Implementa-bility		Information
		Yes	No		Yes	No		Yes	No	
	Teachers motivate students	3	0	The teacher motivates students by asking questions and providing examples of ornamental images	2	2	The teacher does not motivate students to learn today's material	3	0	Yes, the teacher links today's material with the material in the previous lesson
	The teacher conveys the learning objectives	3	0	The teacher conveys today's learning objectives	3	0	The teacher conveys today's learning objectives	4	0	Yes, the teacher explains the benefits of studying today's material for everyday life
	The teacher explains the PjBL learning steps that will be carried out	3	0	The teacher explains the stages in making ornaments, starting from drawing the basic ornament until completion. The example is drawing a duck on a board, until an ornament is formed	3	0	Yes, the teacher explains the stages in making and coloring a map	2	2	The teacher does not explain the learning steps that the teacher will carry out
Core activities	**Step 1**									
	Students are directed to do literacy / read short material from the worksheet	3	0	-	2	1	Not all students observe the map displayed by the teacher, only some observe/pay attention	4	0	Yes, the teacher conveys how to make fried rice and conveys the procedural text on how to make fried rice by showing a video
	Students pay attention to the explanation	3	0	The teacher drew several examples of ornaments on the blackboard, most of the students paid attention.	2	1	Some students observe, some don't	2	2	The teacher did show a video about the procedure for making fried rice, but not all students were interested and paid attention to how to make fried rice
	Students in groups discuss the choice of materials, tools and types	3	0	The teacher forms groups consisting of 4-5 people, who discuss what ornamental images they will make	3	0	The teacher explains to students how to draw a map using a scale	0	4	Students do group together (into 5 groups), but not according to their interests, but according to gender and closeness (close friends)
	Step 2									
	Prepare material tools	3	0	The teacher explains to students about the tools and materials needed to make ornaments	3	0	Groups are formed based on color	2	2	The teacher did give them the assignment to make a procedure text, but they didn't make fried rice because they needed a stove and a lot of cooking utensils.
	Discuss how the product is made	3	0	The teacher explains to students how to make ornamental images, and students are given the opportunity to ask questions	3	0	Students prepare books/paper and drawing tools	4	0	Students discussed drawing up a plan for making a project at the next meeting, but the procedure text had not been made in detail and completely
	Students in groups analyze the results of their group	3	0	Each group chooses what ornament to make	3	0	The teacher explains how to draw a map and explains the meaning of the colors on the map	4	0	Students work in groups
	Step 3									

Activity	Information Activities	Cultural Arts (Fine Arts) 3 observers			Social science 3 observers			Indonesian 4 observers		
		Implementa-bility		Information	Implementa-bility		Information	Implementa-bility		Information
		Yes	No		Yes	No		Yes	No	
	Students in groups write steps, processes and target time to complete	2	1	Students in groups discuss the ornamental drawings they will make, but do not write down the steps and target time for completion	3	0	Students draw maps according to the time determined by the teacher	4	0	The teacher makes an agreement on the schedule for making the project, in this case the teacher is the one who decides.
	Step 4									
	Completion of projects with teacher facilitation and monitoring	3	0	The teacher comes to each group and gives directions	3	0	The teacher visits each group and monitors the work of the student participants and gives directions. The teacher gives a quiz to attract students' attention	4	0	The teacher monitors students by visiting each group and asking about progress and problems encountered in completing the project
	Students design the steps for making a project	3	0	Students sketch ornaments with teacher guidance	3	0	Students draw by group, not individually	0	4	Students make projects faster than scheduled because the projects they make are too easy. No issues were discussed with the teacher
	The teacher monitors each group	3	0	The teacher always monitors the activities of each group	3	0	The teacher visits each group and sees the progress of each group in completing the project	4	0	The teacher monitors each group
	Step 5									
	The teacher gives students the opportunity to present the results of the project	2	1	The teacher provides the opportunity to present the results of the students' project, but it has not been implemented	3	0	Representatives of each group were given the opportunity to present the results of their project	4	0	The teacher visits each group of students working on the project, asking whether there are any problems or difficulties experienced by the students
	Students actively carry out discussions	3	0	Each group discusses with its group members, but not all of them actively discuss	3	0	Students discuss with their group members, but there are some students who appear passive	0	4	Students carry out projects not according to the schedule, and the time allocated by the teacher is excessive (for 4 groups), while for 1 (one) group the time is according to what was planned
	Step 6									
	Students are given the opportunity to express their experiences while completing project assignments	2	1	Students have not stated what their experiences were while making the project	0	3	Students only present the results of their projects, but do not share their experiences while completing their assignments	0	4	The teacher does not guide how to present the project, reflect or provide conclusions. The teacher only asks students to explain the results of their projects.
	Students discuss ways to improve performance while completing project assignments	0	3	Students do not discuss how to improve their performance	3	0	Students do not discuss how to improve their performance	2	2	Each student presented a report on the results of their project, but the other students did not provide a response and the teacher did not conclude the project results

Activity	Information Activities	Cultural Arts (Fine Arts) 3 observers			Social science 3 observers			Indonesian 4 observers		
		Implementability		Information	Implementability		Information	Implementability		Information
		Yes	No		Yes	No		Yes	No	
Closing Activities	Students receive feedback on their learning results.	2	1	Teachers provide feedback to students, but not to all groups	3	0	The teacher pays attention to students who present the results of their projects and provides responses and feedback	0	4	Teachers and students do not conclude today's learning
	Students work on evaluation questions	0	3	The teacher has not given evaluation questions	3	0	At the end of the lesson, students are asked questions.	0	4	Teachers do not appreciate the temporary results obtained and student reports do not receive evaluation / assessment from the teacher
Total value		56	13		60	7		58	32	
Percentage		81%	19%		90%	10%		64%	36%	

The observations of student activities in learning with the PjBL model are presented in Table 2. Based on Table 2, the Arts and Culture subject with 3 observers received an average score of 3.42 (good category), the Social Sciences subject with 4 observers had an average score of 3.59 (good category), while in the Indonesian language subject with 4 observers the score was 3.58 (good category). Thus, it can be said that in total student activity in learning using the PjBL model is in the good category.

Table 2. Observation results of student activities in learning using the PjBL model

No	Aspect	Arts and Culture Score (3 observers)				Social Studies Score (4 observers)				Indonesian Score (3 observers)			
		1	2	3	4	1	2	3	4	1	2	3	4
1	Initial activity				3				4				3
2	Core activities												
	Step 1			2	1			2	2			3	
	Step 2			1	2			2	2			3	
	Step 3		1	2			1	1	2			3	
	Step 4			2	1			2	2			3	
	Step 5			2	1			1	3			3	
	Step 6			3				3	1			3	
3	Closing Activities				3				4			2	1
	Total value		1(2)	12(3)	11(4)		1(2)	11(3)	20(4)			20(3)	4(4)
	Average			3.42				3.59				3.58	

Note: Score 4: Very Good (Almost all students participate); Score 3: Good (70% of students in the class participate), Score 2: Fair (40% of students in the class participate); and Score 1: Poor (Less than 40% of students in the class participated).

3.2 Competencies achieved by students

Student competency will be achieved if students have a positive response to the learning carried out by the teacher. There were five questions given to students, the results of which can be seen in Table 3. Based on Table 3, it can be seen that the majority of students responded very well to the learning process carried out by all teachers, namely the implementation of PjBL.

Table 3. Student responses to the learning process

No	Question	Art and culture		Social science		Indonesian	
		Answer (number of students 16)		Answer (number of students 16)		Answer (number of students 26)	
		Yes	No	Yes	No	Yes	No
1	Do you enjoy taking part in lessons conducted by your teacher?	16	0	16	0	26	0
2	Do you have difficulty working on projects?	1	15	16	0	26	0
3	Do you want to follow Ananda's wishes when studying?	15	1	16	0	15	1
4	Can Ananda complete the project given by the teacher?	16	0	16	0	26	0
5	Can you do the questions during the evaluation activity?	16	0	16	0	26	0

The students' positive response will influence their skills, both process and product. A list of the process and product skill scores for each student by subject is presented in Table 4. Based on an examination of the scores in the three subjects, it is known that the range of student scores is 70 to 90. For fine arts subjects the range of scores is dominantly good (100%), social studies are dominantly good (77%), and Indonesian is dominantly in the fair category (62%).

Table 4. List of process and product skill scores for each student by subject

No	Name initials	Value		
		Art and culture	Social science	Indonesian
1	AA	82	90	90
2	ACA	83	90	90
3	ACD	77	90	75
4	AKA	81	80	90
5	AMP	77	80	70
6	AZR	83	80	90
7	AZF	80	80	90
8	DH	81	90	90
9	DRF	82	80	90
10	FDDF	81	80	90
11	JVR	81	80	75
12	KRJW	80	80	90
13	KPA	83	80	90
14	LCA	83	80	85
15	MHISR	83	80	70
16	MHUSR	83	80	75
17	MDP	77	80	90
18	MZB	77	90	80
19	MLUA	80	80	90
20	NSH	83	80	80
21	OPA	82	80	90
22	PRK	83	90	90
23	RPY	77	80	75
24	RDAB	82	80	70
25	RO	77	80	70
26	ZLN	83	80	90

3.3 Barriers and School Solutions in Implementing the PjBL Model

Based on the results of interviews with teachers, deputy principals and principals, several obstacles were found in implementing PjBL, namely (1) How to determine appropriate material for PjBL and whether PjBL is in accordance with learning objectives; (2) The level of student motivation is unstable so that not all students are active in learning; (3) Children lack discipline in the form of arriving late and not being able to take lessons seriously because they are sleepy; (4) Some students do not understand the material presented; and (4) Class conditioning is less than optimal.

4. Discussion

Teachers often face challenges in maintaining consistency in implementing stages according to the learning model they choose. One factor that can influence this consistency is a lack of understanding of the basic concepts or principles of the learning model (Darling-Hammond et al., 2020; Keiler, 2018; Kim et al., 2019; Mupa & Chinooneka, 2015; Nevenglosky et al., 2018). Not all teachers may have a deep understanding of the learning model they choose, and this can result in difficulties in implementing the stages consistently (Abdulrahaman et al., 2020; Darling-Hammond et al., 2020; Lodge et al., 2018; Margot & Kettler, 2019). In addition, resource constraints such as time, funds, and facilities, can also be significant obstacles, forcing teachers to modify or reduce certain stages (Barrot et al., 2021; Esteve-gonzález, 2016; Haleem et al., 2022; Kamalov et al., 2023).

The unique dynamics of each class, limited technology skills, and pressure to achieve curriculum targets can also play a role in disrupting teacher consistency in implementing the chosen learning model (Chin & Osborne, 2008; Dunlosky et al., 2013; Kozlowski & Ilgen, 2006). To increase consistency, appropriate supports such as additional training, adequate resources, and recognition of teacher efforts can help overcome these barriers. A strong support system will help teachers to more effectively implement the chosen learning model and improve the quality of learning in the classroom (Crossley & McNamara, 2016).

The implementation of the PjBL model by teachers requires a deep understanding of the PjBL concept. Teachers need to understand the basic principles of PjBL and how to integrate them into everyday learning. Administrative support is also an important factor, including the allocation of resources and time for teacher professional development focused on PjBL (Halimatusyadiyah et al., 2022; Winarno & Maulana, 2020). Adequate resources, whether in the form of equipment, technology or learning materials, are the key to supporting the smooth implementation of learning projects. Teachers need to create a classroom atmosphere that supports collaboration and positive reciprocity between students, while promoting flexibility, creativity, and an inclusive approach (Bañez, 2019; Kurniasih & Hartanti, 2020; Pattaufi et al., 2023; Saleh et al., 2017; Thornhill-Miller et al., 2023).

The PjBL approach also requires an orientation to problem solving, where teachers guide students in formulating and solving problems by focusing on developing critical thinking skills. Authentic evaluation that is appropriate to the project context supports the success of PjBL, and teachers need to consider the use of relevant evaluation methods (Artama et al., 2023; Hanardi, 2017; Hatuwe et al., 2023; Mohamed, 2023). Professional learning communities focused on PjBL can also provide support and opportunities to share experiences with fellow teachers. Involving parents and the community in projects increases the value of authenticity and relevance, helping to embrace the potential of learning beyond the boundaries of the classroom (Daniel et al., 2019; Farrow et al., 2022; Helle et al., 2006). The combination of these factors creates an environment that supports teachers in implementing PjBL successfully.

Student activities in PjBL can be categorized as good and very good because PjBL encourages active participation, direct involvement, and learning through practical experience. In the PjBL context, students engage in real-world projects that require problem solving, collaboration, and creativity. They not only receive passive information from teachers, but are also active in designing, executing, and evaluating their own projects (Almulla, 2020; Assyahbana, 2019; Halimatusyadiyah et al., 2022; Rahman et al., 2021). Direct involvement in projects creates intrinsic motivation because students see the relevance and direct application of what they are learning (Almulla, 2020; Duke et al., 2020; Guo et al., 2020; Lam et al., 2009). In addition, PjBL provides opportunities for students to develop social skills, critical thinking, and creative thinking abilities, all of which are aspects that can significantly improve the quality of their learning activities

(Anggito et al., 2021; Illahi et al., 2022; Khafah et al., 2023; Rohana et al., 2023). By emphasizing practical and collaborative experiences, PjBL promotes good and excellent levels of student participation and learning outcomes.

Students tend to prefer Project-Based Learning (PjBL) because this model provides a more real, relevant and challenging learning experience. In PjBL, students are actively involved in designing and completing real-world projects, allowing them to apply knowledge and skills in meaningful contexts. Direct involvement in projects provides additional motivation, increases creativity, and builds students' problem-solving abilities. In addition, PjBL provides opportunities for collaboration between students, strengthens social skills, and develops critical thinking. With a focus on learning through practical experience, PjBL creates a more dynamic and stimulating learning environment, suited to students' needs for active exploration and meaning of concepts in their daily lives.

Variability in student grades in PjBL can be caused by several factors. First, the complex and contextual nature of projects in PjBL can influence the way students respond to and understand learning material. Some students may be more skilled or accustomed to a project approach, while others may take longer to adjust (Almulla, 2020; Duke et al., 2020; Simbolon & Koeswanti, 2020; Sumarni et al., 2016). Second, assessments in PjBL often include aspects of creativity, collaboration, and problem solving, which can result in varying grades based on teacher or evaluator preferences (Kokotsaki et al., 2016; Meng et al., 2023; Rahman et al., 2021; Sagita et al., 2023).

Additionally, the level of support and guidance from teachers can influence project outcomes and student grades. Students who receive more effective guidance or have more resources may perform better than those who are less supported. Additionally, individual factors such as student motivation, time management abilities, and critical thinking skills may also contribute to variations in grades in PjBL (An et al., 2022; Seo et al., 2021; van de Pol et al., 2015; Zheng, 2021). Therefore, to reduce grade variability, it is important for teachers to provide clear guidance, consistent support, and transparent assessment, while considering the diversity of students' learning styles and ability levels.

Teachers can face a number of obstacles in implementing PjBL. These obstacles involve limited resources, both in terms of equipment and understanding of PjBL concepts, which can hinder teacher effectiveness in designing and managing learning projects. Sometimes, time constraints, resistance to change, and difficulty in assessing complex aspects such as creativity and collaboration are also inhibiting factors. Limited technology skills, resistance to change, and difficulty managing classroom dynamics and student collaboration can also be barriers for teachers. To overcome these challenges, there is a need for administrative support, adequate training, and adjustments in approach and assessment to improve the successful implementation of PjBL (Cintang et al., 2018; Evenddy et al., 2023; Yulhendri et al., 2023).

Based on this, the school tries to take solutions in the form of: (1) Improving learning planning; (1) Selecting the right topic; (3) Consistently implement what is planned in the teaching module; (4) Review previous material; (5) Improving the learning process; and (6) Approaching students who are less interested. The proposed solution can be considered appropriate for overcoming problems in project-based learning (PjBL). Efforts to improve lesson planning can help teachers to design projects more carefully, ensuring that learning objectives are met and required resources are considered (Phan Thi Thanh Nga, 2022; Purwinda Anggrella et al., 2023). Choosing the right topic is also key, as relevant and interesting projects can increase student motivation and engagement (Anyichie & Butler, 2023; Dabrowski & Marshall, 2018; Evans & Boucher, 2015). Consistency in implementing learning plans from teaching modules provides clarity and continuity in students' learning experiences (Clarin & Baluyos, 2022; Samosa, 2022). Reviewing previous material can help build a foundation of knowledge necessary for the project (Halimatusyadiyah et al., 2022; Indarti, 2016; Kokotsaki et al., 2016). Improving the learning process involves continuous evaluation and adjustment to ensure the

effectiveness of the methods used (Shin, 2018; Sukackė et al., 2022; Umar & Ko, 2022). Finally, taking a special approach to less interested students can help create a more engaging and relevant learning experience for them (Almulla, 2020; Guo et al., 2020; Issa & Khataibeh, 2021). Overall, this solution is holistic and addresses various aspects that may be obstacles in implementing PjBL.

5. Conclusion

This research provides important information. Based on the analysis of the teaching module documents, it can be seen that all teaching modules mention the implementation of PjBL. However, only one teaching module clearly describes the PjBL-based learning steps. The average implementation of the PjBL model is 63% (sufficient category). Student activities in learning with the model were categorized as good 43 people and very good 35 people. The majority of students responded very well to the learning process carried out by the teacher, namely the implementation of PjBL. Based on an examination of the scores in the three subjects, it is known that the range of student scores is 70 to 90. There are several problems and solutions taken by the school in an effort to make the implementation of PjBL a success.

This research only involves three subjects, namely arts and culture, social studies, and Indonesian. Therefore, it is necessary to also study the application of PjBL to other subjects. In addition, assessments or evaluations can be carried out with a relatively large number of materials and meetings so as to provide complete or comprehensive results. Widespread study regarding the implementation of PjBL in the Independent Curriculum has urgency in the future because it allows the implementation or even development of a more holistic and contextual learning approach. By expanding the application of PjBL to diverse subjects, relevant assessments, and comprehensive evaluations, teachers can provide a more meaningful and in-depth learning experience for students. This also facilitates the development of higher-order thinking skills in the form of critical, collaborative and creative thinking skills which are essential in preparing students to face the challenges of a complex and continuously developing world. Thus, an in-depth study of these aspects will help ensure the success of PjBL implementation in achieving educational reform and learning and sustainable educational goals which are the spirit of the Independent Curriculum.

Authors Contribution: Lise Chamisijatin: methodology, conducting the research and writing original article, field data collection, data analysis, and revision. Siti Zaenab: Field data collection data analysis, and revision.

Conflict of Interest: The authors declare no conflict of interest.

Ancknowledgements: This research was funded by the Universitas Muhammadiyah Malang through the Directorate of Research and Community Service in 2023. The research scheme is Basic Research.

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