

IMPROVING STUDENTS' ABILITY IN CREATING KARAWO DESIGN TROUGHT THE PROJECT-BASED LEARNING MODEL IN CLASS IV AT SDN 5 TILONGKABILA

MENINGKATKAN KEMAMPUAN MURID MEMBUAT DESAIN KARAWO MELALUI MODEL *PROJECT BASED LEARNING* DI KELAS IV SDN 5 TILONGKABILA

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Abstrak

Penelitian ini bertujuan untuk meningkatkan kemampuan membuat desain Karawo melalui penerapan model pembelajaran Project Based Learning (PjBL) pada murid kelas IV SDN 5 Tilongkabila, Kabupaten Bone Bolango. Penelitian ini merupakan Penelitian Tindakan Kelas (PTK) yang dilaksanakan dalam dua siklus dengan subjek penelitian sebanyak 13 murid kelas IV. Kondisi awal menunjukkan bahwa kemampuan murid dalam membuat desain Karawo masih rendah karena pembelajaran lebih berfokus pada kegiatan mewarnai pola yang telah tersedia, sehingga kreativitas dan keterampilan merancang desain belum berkembang secara optimal. Data dikumpulkan melalui observasi, tes unjuk kerja, wawancara, dan dokumentasi. Penilaian kemampuan membuat desain Karawo menggunakan aspek kesatuan (unity), proporsi (proportion), irama (rhythm), dan harmoni (harmony). Hasil penelitian menunjukkan bahwa pada siklus I pertemuan I sebanyak 3 murid (23%) mencapai kriteria mampu. Pada siklus I pertemuan II jumlah tersebut meningkat menjadi 6 murid (46%). Selanjutnya, pada siklus II meningkat menjadi 11 murid (85%), sehingga telah melampaui indikator keberhasilan penelitian yang ditetapkan sebesar 75%. Dengan demikian, dapat disimpulkan bahwa penerapan model pembelajaran Project Based Learning (PjBL) dapat meningkatkan kemampuan membuat desain Karawo pada murid kelas IV SDN 5 Tilongkabila Kabupaten Bone Bolango.

Abstract

This study aimed to improve fourth-grade students' ability to create Karawo designs through the implementation of the Project-Based Learning (PjBL) model at SDN 5 Tilongkabila, Bone Bolango Regency, Indonesia. This study employed a Classroom Action Research (CAR) design conducted in two cycles involving 13 fourth-grade students as the research participants. The preliminary observation revealed that students' ability to create Karawo designs was relatively low because the learning process primarily focused on coloring pre-prepared patterns rather than encouraging students to develop their own designs. Data were collected through classroom observation, performance assessment, interviews, and documentation. Students' performance was assessed based on four artistic design principles: unity, proportion, rhythm, and harmony. The findings indicated a progressive improvement in students' performance across the action cycles. In the first meeting of Cycle I, only 3 students (23%) achieved the predetermined competency criteria. This number increased to 6 students (46%) in the second meeting of Cycle I and further improved to 11 students (85%) in Cycle II, exceeding the predetermined success indicator of 75%. These findings indicate that the implementation of the Project-Based Learning (PjBL) model improved the ability to create Karawo designs among fourth-grade students at SDN 5 Tilongkabila, Bone Bolango Regency.

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INTRODUCTION

Education plays a fundamental role in shaping character, fostering knowledge, and developing the competencies required to address the challenges of life. It is not merely a process of transmitting knowledge but also of transforming values and cultivating individuals' character in a holistic manner (Karyono, Isa, and Masunah 2025). At the elementary school level, education serves as the foundation upon which students develop critical thinking, creativity, and practical skills. Elementary education is therefore essential in establishing the fundamental knowledge and competencies that support students' academic and personal development throughout subsequent stages of education. Among the subjects taught at this level, Arts, Culture, and Crafts (Seni Budaya dan Prakarya [SBdP]) plays a significant role in fostering students' creativity and artistic expression (Siregar et al. 2023).

Arts, Culture, and Crafts (Seni Budaya dan Prakarya (SBdP)) plays a pivotal role in fostering students' aesthetic awareness, creativity, and appreciation of cultural heritage. According to Ki Hajar Dewantara, arts and crafts education has a strategic function in shaping students' character because it encompasses multiple forms of expression, multidimensional learning experiences, and reflects the richness of cultural diversity (Indrakurniawan, Wulandari, and Iffatur Rocmah 2024). Similarly, Dalila et al. (2025) argued that the objectives of art education include enhancing creative skills, expanding cultural knowledge, fostering appreciation of the arts, and developing competence in the visual arts. One of the topics covered in SBdP is Nusantara ornamental motifs (ragam hias Nusantara), which aims to introduce students to Indonesia's cultural diversity while developing their ability to create designs using the fundamental elements of line, pattern, and color, thereby producing artworks with aesthetic value.

However, based on classroom observations and interviews with the fourth-grade teacher at SDN 5 Tilongkabila, Bone Bolango Regency, the instructional process for design-making activities remains predominantly focused on coloring pre-drawn patterns provided by the teacher. Students have not been given sufficient opportunities to independently design motifs, beginning with generating ideas, developing patterns, and completing their own designs. As a result, the learning process emphasizes the final product rather than the creative process through which students develop their artistic abilities. This condition has hindered the optimal development of students' motif-design skills, as their creativity, compositional abilities, and visual thinking skills have not been adequately cultivated.

Furthermore, visual arts instruction in elementary schools has yet to fully utilize the potential of local cultural heritage as a contextual learning resource. In the topic of Nusantara ornamental motifs (ragam hias Nusantara), students should be introduced to the distinctive ornamental traditions of their own region, namely Karawo. According to Amali (2022), the term Karawo is derived from three Gorontalo words: ka (kakayita), ra (ranteya, meaning "chain"), and wo (wowoalo), referring to interconnected chain-like motifs created along the edges of fabric openings, which can be removed and reworked if errors occur during the embroidery process. Beyond being a traditional embroidery craft of Gorontalo, Karawo represents a significant cultural identity with aesthetic, philosophical, and educational values. Therefore, it constitutes a highly relevant contextual learning resource for Arts, Culture, and Crafts (Seni Budaya dan Prakarya (SBdP)) instruction.

The integration of local culture into art education has been widely explored in previous studies. Saiq, Zahra and Kurnia (2025) reported that the implementation of Project-Based Learning (PjBL) through batik collage activities effectively enhanced students' visual creativity while fostering their appreciation of local cultural heritage. Similarly, Zahra and Kurnia (2025) demonstrated that

applying PjBL to jumputan batik production improved students' creativity and strengthened their awareness of local culture through active engagement in the motif-design process. Furthermore, Ifrianti, Hasnanto, and Yuslinda (2025) found that project-based learning integrated with local wisdom effectively promoted students' creativity in art education.

Despite these contributions, previous studies have primarily focused on enhancing creativity or cultural appreciation through various forms of local culture-based artistic media, such as batik, collage, and other regional artworks. To date, limited attention has been given to learning activities centered specifically on Karawo design as a distinctive cultural heritage of Gorontalo, particularly through a comprehensive design process that guides students from conceptualization to the completion of their artwork. In addition, the assessment approaches employed in earlier studies have generally emphasized creativity or the final product, without systematically evaluating students' design competence based on the fundamental principles of visual design, namely unity, proportion, rhythm, and harmony.

Addressing these gaps, the present study offers two main contributions. First, it integrates Karawo design as an authentic representation of Gorontalo's local cultural heritage into Arts, Culture, and Crafts (Seni Budaya dan Prakarya (SBdP)) instruction. Consequently, the learning process is intended not only to develop students' artistic skills but also to promote the preservation of regional cultural heritage. Second, students' design competence is assessed using four essential principles of visual design-unity, proportion, rhythm, and harmony-thereby extending assessment beyond the quality of the final product to encompass the effective application of design principles throughout the creative process.

To address the identified instructional challenges, this study employs the Project-Based Learning (PjBL) model. According to Rusli et al. (2024), Project-Based Learning is a student-centered instructional model that uses projects as the primary vehicle for learning. This approach is particularly well suited to the Karawo design process because each phase of the PjBL framework supports the systematic development of design skills. Students begin by formulating essential questions related to Karawo motifs, proceed to planning and organizing a design project, establish a project timeline, implement and monitor the design process, evaluate the completed artwork, and finally reflect on the entire learning experience. Through these sequential stages, students are expected not only to produce Karawo design artworks but also to engage in an active, creative, collaborative, and contextually meaningful learning process.

METHOD

This study employed Classroom Action Research (CAR) to improve the instructional process through the implementation of targeted classroom interventions aimed at addressing identified learning problems. According to Suyanto (Setiawan et al. 2023), Classroom Action Research is a form of practical research conducted through systematic actions to improve teaching and learning practices. The study adopted the Kemmis and McTaggart action research model, which consists of four cyclical stages: planning, acting, observing, and reflecting.

The research was conducted at SDN 5 Tilongkabila, Bone Bolango Regency, during the second semester of the 2025/2026 academic year. Preliminary observations were carried out in January 2026, while the intervention was implemented from February to March 2026 over two research cycles. Cycle I consisted of two instructional meetings, whereas Cycle II comprised a single meeting because the predetermined success criterion had been achieved, namely that at least 75% of the students attained the competent category in designing Karawo motifs.

The participants consisted of 13 fourth-grade students, including five boys and eight girls. The study involved three research variables. The input variables included students' initial readiness, learning resources, educational facilities, the learning environment, and their prior ability to design Karawo motifs. The process variable was the implementation of the Project-Based Learning (PjBL) model, which, according to Santoso et al. (2023), comprises six stages: (1) formulating an essential question, (2) designing the project, (3) developing a project schedule, (4) monitoring project implementation, (5) assessing the project outcomes, and (6) evaluating the project. The output variable was the improvement of students' competence in designing Karawo motifs.

The research procedure followed the cyclical framework proposed by Kemmis and McTaggart, encompassing the stages of planning, acting, observing, and reflecting. During the planning stage, the researcher prepared lesson plans, research instruments, assessment rubrics, instructional media, and learning materials based on the findings of the preliminary observation. The action stage involved implementing the Project-Based Learning model in classroom instruction. Classroom observations were conducted by a collaborating teacher using structured observation sheets to record both teacher and student activities throughout the learning process. Subsequently, the researcher and the collaborating teacher jointly conducted the reflection stage to evaluate the outcomes of the intervention and identify necessary improvements for the subsequent cycle. The study was concluded after Cycle II because the established success criterion had been achieved.

Data were collected through classroom observations, product assessment, interviews, and documentation. According to Katz-Buonincontro, Anderson, and C (2020), observation is a data collection method based on the systematic examination of research phenomena. In this study, observations were conducted to examine the instructional activities of both the teacher and the students during the learning process. Students' products were assessed using four fundamental principles of visual design: unity, proportion, rhythm, and harmony. Interviews were conducted with the classroom teacher to obtain information regarding the implementation of instruction and students' learning progress. Documentation was used to complement the data through photographs of classroom activities, samples of students' artwork, field notes, and other supporting documents. Busetto, Wick, and Gumbinger (2020) stated that documentation techniques involve collecting research data through the analysis of relevant documents.

The research instruments consisted of a teacher activity observation sheet, a student activity observation sheet, an interview guide, a documentation checklist, and a product assessment rubric. The assessment rubric was designed to evaluate students' Karawo design competence based on four criteria-unity, proportion, rhythm, and harmony-with each criterion scored on a three-point scale (1-3), resulting in a maximum possible score of 12. Prior to implementation, all research instruments were developed based on indicators of Karawo design competence and subsequently reviewed by the academic supervisor and the collaborating teacher to ensure the appropriateness of the content, the clarity of the assessment indicators, and the feasibility of their implementation.

Table 1. Rubric for Assessing Students' *Karawo* Design Competence

Assessment Criterion	Score 3	Score 2	Score 1
Unity	All design elements are fully integrated, forming a coherent and unified composition.	Most design elements are integrated; however, some parts still lack coherence.	The design elements do not form a unified composition.
Proportion	The relative size of each design element is balanced and appropriate.	Most design elements are proportionally balanced, although minor inconsistencies remain.	The proportions among the design elements are unbalanced and inappropriate.

Rhythm	The repeated motifs are arranged systematically, creating a clear visual rhythm.	Repetition of motifs is evident but lacks consistency.	The motifs are repeated irregularly, resulting in an unclear visual rhythm.
Harmony	All design elements are visually harmonious and well coordinated.	Most design elements appear harmonious, although some parts remain less well integrated.	The design elements do not demonstrate visual harmony.

Data were analyzed using both descriptive qualitative and descriptive quantitative approaches. Qualitative analysis was employed to describe the instructional activities of the teacher and students throughout the learning process, whereas quantitative analysis was used to calculate students' product assessment scores. The same scoring rubric was consistently applied in each research cycle to ensure the reliability and consistency of the assessment conducted by both the researcher and the collaborating teacher.

Students were considered to have achieved individual learning mastery if they obtained a score of 75 or above, whereas classical learning mastery was considered to have been achieved when at least 75% of the students attained individual learning mastery. Accordingly, the instructional intervention was deemed successful when a minimum of 75% of the students achieved a score of 75 or higher.

The study was conducted in accordance with established research ethics principles. Ethical approval and permission to conduct the research were obtained from the Faculty of Education, Universitas Negeri Gorontalo, and the Principal of SDN 5 Tilongkabila. The fourth-grade classroom teacher participated in the study as a collaborating teacher, and parents were informed of the research implementation through the school administration. The confidentiality of all students' identities was strictly maintained, and the research activities were designed so as not to disrupt the regular teaching and learning process. The study was supported by the necessary administrative documents, including a research permit, a faculty recommendation letter, a certificate of research implementation, and a certificate confirming the completion of the research. During the pre-intervention stage, no product assessment was conducted; therefore, neither the class mean score nor the mean score for each assessment criterion was available. The pre-intervention data were obtained through preliminary classroom observations and interviews with the classroom teacher.

RESULTS AND DISCUSSION

Result

a. Preliminary Observation

Prior to the implementation of the classroom action research, a preliminary observation was conducted in January 2026 in the fourth-grade classroom of SDN 5 Tilongkabila, Bone Bolango Regency. The observation involved direct classroom observation and an interview with the fourth-grade teacher to obtain baseline information regarding students' design competence in Arts, Culture, and Crafts (Seni Budaya dan Prakarya [SBdP]), particularly in the topic of Nusantara ornamental motifs (ragam hias Nusantara).

The results of the classroom observation and teacher interview revealed that the students had previously studied the topic of Nusantara ornamental motifs. However, the instructional activities had not provided opportunities for students to independently design ornamental motifs. Instead, classroom instruction primarily focused on coloring design templates prepared by the teacher. Consequently, students had not yet developed the ability to generate original ideas, create motif designs, determine compositional arrangements, or produce Karawo designs based on their own

creativity. As a result, students' competence in designing Karawo motifs had not yet developed optimally.

During the pre-intervention stage, no product assessment was conducted because the students had never been assigned the task of creating Karawo designs. Therefore, the pre-intervention data were derived solely from the preliminary classroom observations and the interview with the classroom teacher. The findings indicated that none of the students met the predetermined indicators of Karawo design competence. The pre-intervention data are presented in Table 1.

Table 1. Pre-Intervention Data on Students' *Karawo* Design Competence

Category	Number of Students	Percentage
Competent	0	0%
Not Yet Competent	13	100%
Total	13	100%

Source: *Preliminary classroom observations and teacher interview, 2026.*

Based on Table 1, none of the students (0%) met the predetermined indicators of Karawo design competence, whereas all 13 students (100%) were classified as not yet competent. These findings indicate that the students' initial competence in designing Karawo motifs was still very limited. During the pre-intervention stage, neither the class mean score nor the mean score for each assessment criterion was reported because no product assessment had yet been conducted. The students had never previously been assigned the task of creating Karawo designs; therefore, their competence could not be evaluated using the assessment rubric developed for this study. Accordingly, the pre-intervention data provide only a baseline description of students' initial condition, as derived from the preliminary classroom observations and teacher interviews prior to the implementation of the instructional intervention.

Based on these findings, the researcher implemented the Project-Based Learning (PjBL) model as an instructional intervention to improve students' competence in designing Karawo, one of the distinctive traditional ornamental motifs of Gorontalo. The PjBL model was selected because it provides students with opportunities to engage actively in meaningful learning through project completion, enabling them to develop creativity, generate original ideas, and independently produce Karawo designs by following a structured design process. Accordingly, this Classroom Action Research was conducted with the expectation of improving students' competence in designing Karawo motifs.

b. Results of Cycle I

The intervention in Cycle I was conducted over two instructional meetings, held on 12 and 13 February 2026, with each meeting lasting 2×35 minutes. The instructional intervention was implemented using the Project-Based Learning (PjBL) model, which comprised six stages: defining the project, planning the project, implementing the project, monitoring the project implementation, assessing the project outcomes, and reflecting on the learning process.

Meeting 1

The first meeting began with preliminary activities, including greeting the students, offering a prayer, checking attendance, conducting an apperception activity to activate prior knowledge, and communicating the learning objectives. The teacher then motivated the students by explaining the importance of understanding and preserving Karawo as one of Gorontalo's cultural heritage traditions.

During the main learning activities, the teacher implemented the Project-Based Learning (PjBL) model by presenting examples of various Karawo motifs through a Microsoft PowerPoint presentation. The teacher explained the concept of Karawo, the function of Karawo design, the fundamental design elements, and the procedures for creating the design project that the students would complete. Following this explanation, the students individually carried out the project using the Student Worksheet (SW). The project activities included sketching the motif pattern, drawing parallel hatching lines, adding border lines, and applying colors according to their own creative ideas. Throughout the activity, the teacher provided guidance to students experiencing difficulties and continuously monitored the progress of their project work.

During the closing activities, the teacher and students reflected on the learning process, reinforced the key concepts that had been learned, and concluded the lesson with a prayer and greetings. The reflection conducted after the first meeting revealed several challenges in the implementation of the learning activities. Some students experienced difficulties in drawing proportional motif patterns, producing neat parallel hatching lines, determining appropriate border lines, and combining colors harmoniously. In addition, several students were unable to complete the project within the allocated time. Therefore, the intervention was continued in the second meeting, with more intensive guidance provided to address the aspects in which students continued to experience difficulties. Results of the Teacher Activity Observation in Cycle I, Meeting 1 The results of the observation of the teacher's instructional activities during Cycle I, Meeting 1 are presented in Table 2.

Table 2. Results of the Teacher Activity Observation in Cycle I, Meeting 1

No.	Observed Aspect	Good (G)	Fair (F)	Poor (P)
1	Preliminary Activities	3	1	–
2	Main Learning Activities	4	9	3
3	Closing Activities	1	1	–
Total		8	11	3
Percentage		36%	50%	14%

Source: *Research Data*, 2026.

Based on the observation results presented in Table 2, the teacher's instructional activities were rated Good in 36% of the observed aspects (8 of 22 indicators), Fair in 50% (11 indicators), and Poor in 14% (3 indicators). These findings indicate that the implementation of the learning process had not yet reached the expected level of effectiveness. Several aspects requiring improvement included providing more effective guidance during project implementation, improving classroom time management, and reinforcing students' learning at each stage of the instructional process. Accordingly, these aspects were targeted for improvement during the subsequent meeting. Results of the Student Activity Observation in Cycle I, Meeting 1 The results of the observation of students' learning activities during Cycle I, Meeting 1 are presented in Table 3.

Table 3. Results of the Student Activity Observation in Cycle I, Meeting 1

No.	Observed Aspect	Good (G)	Fair (F)	Poor (P)
1	Preliminary Activities	3	1	–
2	Main Learning Activities	4	9	3
3	Closing Activities	1	1	–
Total		8	11	3
Percentage		36%	50%	14%

Source: *Research Data*, 2026.

Based on the observation results presented in Table 3, students' learning activities were rated Good in 36% of the observed aspects (8 of 22 indicators), Fair in 50% (11 indicators), and Poor in

14% (3 indicators). These findings indicate that most students had begun to participate in the learning activities in accordance with the stages of the Project-Based Learning (PjBL) model. However, several students were still not actively engaged in developing their designs independently, were unable to complete the project within the allocated time, and continued to require substantial guidance from the teacher throughout the project implementation.

Students' Design Competence in Cycle I, Meeting 1

Based on the product assessment conducted at the end of the lesson, 3 students (23%) achieved the Competent category, whereas 10 students (77%) were classified as Not Yet Competent. Compared with the pre-intervention findings, these results indicate an improvement in students' Karawo design competence, with the proportion of students meeting the predetermined competence indicators increasing from 0% to 23%. Nevertheless, this percentage had not yet reached the predetermined success criterion; therefore, the instructional intervention was continued in the subsequent meeting. A summary of students' Karawo design competence across each assessment criterion is presented in Table 4.

Table 4. Summary of Students' Karawo Design Competence in Cycle I, Meeting 1

No.	Assessment Criterion	Score	Number of Students	Percentage (%)
1	Unity	3	1	8%
		2	11	84%
		1	1	8%
2	Proportion	3	—	0%
		2	5	38%
		1	8	62%
3	Rhythm	3	—	0%
		2	6	46%
		1	7	54%
4	Harmony	3	6	46%
		2	6	46%
		1	1	8%

Source: Research Data, 2026.

Based on Table 4, students' performance across the four assessment criteria had not yet reached the expected level. For the unity criterion, the majority of students (84%) obtained a score of 2, while only 8% achieved the highest score. For both the proportion and rhythm criteria, no students attained the maximum score, indicating that these two aspects remained the primary challenges in producing Karawo designs. In contrast, the harmony criterion showed relatively better performance than the other criteria, with 46% of the students achieving the highest score. These findings suggest that students had begun to demonstrate the ability to combine colors harmoniously in their designs; however, they still experienced difficulties in maintaining proportional composition and creating a consistent rhythmic pattern of motifs. Accordingly, these two criteria became the primary focus for instructional improvement in the subsequent meeting. The distribution of students' design competence scores in Cycle I, Meeting 1 is presented in Figure 1.

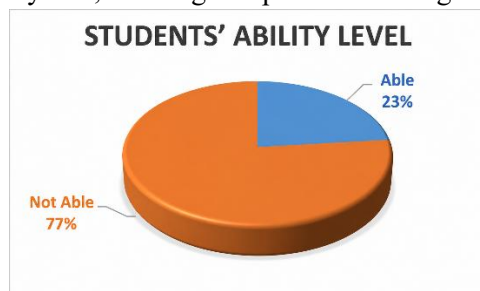


Figure 1. Students' Design Competence Scores in Cycle I, Meeting 1

Meeting 2

Based on the reflection conducted after the first meeting, the instructional intervention in Cycle I, Meeting 2 focused on addressing the challenges identified during the previous learning session. The teacher provided a more systematic explanation of the procedures for creating Karawo designs, presented a simple design example as a reference, and intensified guidance throughout the project implementation. In addition, classroom time was managed more systematically by allocating a specific time limit for each stage of the learning activities to ensure that all students could complete their projects within the allotted time.

During the preliminary activities, the teacher began the lesson by greeting the students, leading a prayer, checking attendance, conducting an apperception activity, and communicating the learning objectives. The teacher then encouraged students to recall the previous lesson through a question-and-answer session focusing on the design elements of Karawo and the procedures for creating Karawo designs.

During the main learning activities, the teacher again implemented the Project-Based Learning (PjBL) model. Students were assigned to create a Karawo design featuring a simple floral motif as an extension of the project completed in the first meeting. The teacher distributed the Student Worksheet (SW), demonstrated a basic motif pattern, and guided students in arranging the design composition, drawing parallel hatching lines, adding border lines, and selecting appropriate color combinations. Throughout the project implementation, the teacher continuously monitored students' progress and provided assistance to those who encountered difficulties.

During the closing activities, the teacher acknowledged and appreciated the students' work, assessed the completed projects using the established assessment rubric, and provided constructive feedback on the students' products. The students were then invited to reflect on the learning experiences they had gained throughout the project. The lesson concluded with a summary of the learning material, motivational remarks, a closing prayer, and greetings.

Results of the Teacher Activity Observation in Cycle I, Meeting 2

The results of the observation of the teacher's instructional activities during Cycle I, Meeting 2 are presented in Table 5.

Table 5. Results of the Teacher Activity Observation in Cycle I, Meeting 2

No.	Observed Aspect	Good (G)	Fair (F)	Poor (P)
1	Preliminary Activities	2	2	–
2	Main Learning Activities	11	6	–
3	Closing Activities	1	–	–
Total		14	8	–
Percentage		64%	36%	–

Source: *Research Data*, 2026.

Based on the observations presented in Table 5, teacher activities were predominantly categorized as good, accounting for 64% (14 out of 22 observed aspects), while 36% (8 aspects) were classified as fair. No aspects were categorized as poor. These findings indicate an improvement in the quality of instructional implementation compared with Cycle I, Meeting I. This improvement was reflected in the teacher's enhanced ability to manage the learning process, provide effective guidance during project implementation, and optimize time management, resulting in a more efficient and effective learning process.

Student Activity Observation Results: Cycle I, Meeting II

The results of the observations of student activities during the learning process in Cycle I, Meeting II are presented in Table 6.

Table 6. Observation Results of Student Activities in Cycle I, Meeting II

No.	Observed Aspects	Number of Aspects		
		Good (G)	Fair (F)	Poor (P)
1.	Preliminary Activities	3	1	—
2.	Main Activities	10	7	—
3.	Closing Activities	1	—	—
	Total	14	8	—
	Percentage	64%	36%	—

Source: *Research Data (2026)*.

Based on the observations presented in Table 6, student activities were predominantly categorized as good, accounting for 64% (14 out of 22 observed aspects), while 36% (8 aspects) were classified as fair. No aspects were categorized as poor. Compared with Cycle I, Meeting I, student engagement showed noticeable improvement, as evidenced by the increasing number of students who actively participated in each stage of the learning process, completed the project more independently, and demonstrated greater enthusiasm in developing their Karawo designs.

Student Performance Results: Cycle I, Meeting II

Based on the evaluation conducted at the end of the learning session, 6 students (46%) achieved the competent category, while 7 students (54%) were still classified as not yet competent. Compared with Cycle I, Meeting I, the number of students achieving competency increased from 3 students (23%) to 6 students (46%). Relative to the pre-intervention condition, student performance improved by 46 percentage points, increasing from 0% to 46%. A summary of students' performance across each assessment criterion is presented in Table 7.

Table 7. Summary of Students' Performance in Creating Karawo Designs in Cycle I, Meeting II

No.	Assessment Criteria	Rating (Score)	Number of Students	Percentage (%)
5.	Unity	3	5	38%
		2	8	62%
		1	—	0%
6.	Proportion	3	—	0%
		2	10	77%
		1	3	23%
7.	Rhythm	3	—	0%
		2	7	54%
		1	6	46%
8.	Harmony	3	9	69%
		2	4	31%
		1	—	0%

Source: *Research Data (2026)*.

Based on Table 7, students' performance improved across several assessment criteria. In the unity criterion, 38% of the students achieved the highest score, while the remaining 62% obtained a score of 2. For the proportion and rhythm criteria, no students attained the maximum score; however, the majority demonstrated improvement by progressing from a score of 1 to 2. Meanwhile, the harmony criterion exhibited the most substantial improvement, with 69% of the students achieving the highest score. These findings indicate that the implementation of the Project-Based Learning (PjBL) model began to produce a positive impact on students' ability to create Karawo designs. Nevertheless, the proportion and rhythm criteria still require further improvement in the subsequent cycle. The distribution of students' performance scores in Cycle I, Meeting II is presented in Figure 2

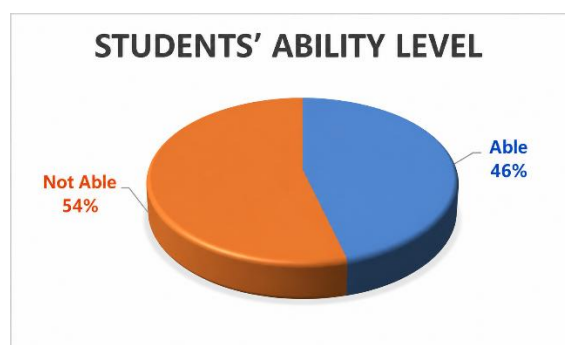


Figure 2. Distribution of Students' Performance Scores in Cycle I, Meeting II

c. Results of Cycle II Implementation

The implementation of the intervention in Cycle II was carried out based on the reflection results from Cycle I. The reflection indicated that the study's success indicators had not yet been achieved, as several students continued to experience difficulties in organizing design compositions, determining appropriate motif proportions, creating repetitive motif rhythms, and completing the project within the allocated time. Therefore, the researcher and the collaborating teacher planned several improvements, including increasing the intensity of guidance during project implementation, providing direct demonstrations of the Karawo design process, clarifying the instructions in the Student Worksheet (SW), and improving classroom time management.

The intervention in Cycle II was conducted in a single learning session on March 31, 2026, with a time allocation of 2×35 minutes. Prior to the lesson, the researcher prepared the Deep Learning Lesson Plan (DLLP), instructional media, Student Worksheets (SW), assessment rubrics, and the tools and materials required for the project activities.

The lesson began with an introductory activity consisting of an apperception session, the presentation of the learning objectives, and motivational activities emphasizing the importance of preserving local cultural heritage through Karawo design. During the main learning activities, the teacher reimplemented the Project-Based Learning (PjBL) model by providing a more detailed explanation of each stage of the design process, demonstrating the procedures for creating Karawo designs, and presenting examples of designs that met the established assessment criteria. Throughout the project implementation, the teacher provided intensive guidance to students who encountered difficulties and ensured that all students completed each stage of the project within the allocated time.

During the closing activities, the teacher evaluated students' work using the assessment rubric, provided constructive feedback on their performance, encouraged students to reflect on their learning experiences, summarized the lesson, and concluded the session with a prayer and greeting. Teacher Activity Observation Results: Cycle II The results of the observations of teacher activities during the implementation of Cycle II are presented in Table 8.

Table 8. Observation Results of Teacher Activities in Cycle II

No.	Observed Aspects	Number of Aspects		
		Good (G)	Fair (F)	Poor (P)
1.	Preliminary Activities	4	—	—
2.	Main Activities	14	3	—
3.	Closing Activities	1	—	—
	Total	19	3	—
	Percentage	86%	14%	—

Source: Research Data (2026).

Based on the observations presented in Table 8, teacher activities were predominantly classified as good, accounting for 86% (19 out of 22 observed aspects), while the remaining 14% (3 aspects) were categorized as fair. No aspects were classified as poor. These findings indicate that the implementation of the learning process was carried out at a high level of effectiveness. The improvements made based on the reflection results from Cycle I successfully enhanced the quality of classroom management, the effectiveness of teacher guidance, and the overall implementation of the Project-Based Learning (PjBL) model.

Student Activity Observation Results: Cycle II The results of the observations of student activities during the implementation of Cycle II are presented in Table 9.

Table 9. Observation Results of Student Activities in Cycle II

No.	Observed Aspects	Number of Aspects		
		Good (G)	Fair (F)	Poor (P)
1.	Preliminary Activities	4	—	—
2.	Main Activities	14	3	—
3.	Closing Activities	1	—	—
	Total	19	3	—
	Percentage	86%	14%	—

Source: *Research Data* (2026).

Based on the observations presented in Table 9, student activities were predominantly classified as good, accounting for 86% (19 out of 22 observed aspects), while the remaining 14% (3 aspects) were classified as fair. No aspects were categorized as poor. Compared with Cycle I, student engagement improved substantially. Most students were able to complete all stages of the learning process independently, actively consulted with the teacher whenever they encountered difficulties, and completed the project within the allocated time.

Student Performance Results: Cycle II

Based on the evaluation conducted at the end of the learning session, 11 students (85%) achieved the competent category, while 2 students (15%) were still classified as not yet competent. Compared with Cycle I, Meeting II, the proportion of students achieving competency increased from 46% to 85%, representing an improvement of 39 percentage points. Relative to the pre-intervention condition, students' performance improved by 85 percentage points, increasing from 0% to 85%. These findings indicate that the success indicators established for the study were successfully achieved. A summary of students' performance across each assessment criterion is presented in Table 10.

Table 10. Summary of Students' Performance in Creating Karawo Designs in Cycle II

No.	Assessment Criteria	Rating (Score)	Number of Students	Percentage (%)
9.	Unity	3	7	54%
		2	6	46%
		1	—	0%
10.	Proportion	3	4	31%
		2	7	54%
		1	2	15%
11.	Rhythm	3	3	23%
		2	10	77%
		1	—	0%
12.	Harmony	3	11	85%
		2	2	15%
		1	—	0%

Source: *Research Data* (2026).

Based on Table 10, students' performance in creating Karawo designs improved across all assessment criteria compared with Cycle I. In the unity criterion, 54% of the students achieved the highest score. For the proportion and rhythm criteria, 31% and 23% of the students, respectively,

attained the highest score, while the majority of the remaining students obtained a score of 2, indicating continued improvement in their performance compared with the previous cycle. The harmony criterion demonstrated the strongest performance, with 85% of the students achieving the highest score. These findings indicate that the implementation of the Project-Based Learning (PjBL) model effectively enhanced students' ability to create Karawo designs across all assessment criteria, with the most substantial improvements observed in the harmony and unity criteria. The distribution of students' performance scores in Cycle II is presented in Figure 3.

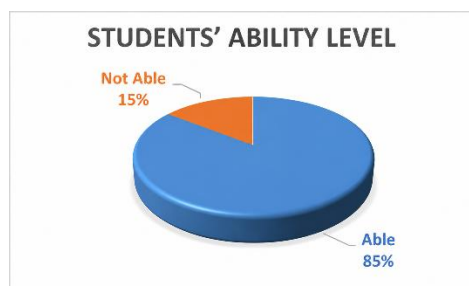


Figure 3. Distribution of Students' Performance Scores in Cycle II

Summary of Research Findings

To provide an overview of the improvement in students' ability to create Karawo designs following the implementation of the Project-Based Learning (PjBL) model, a summary of the research findings from Cycle I to Cycle II is presented in Table 11.

Table 11. Summary of Students' Performance in Creating Karawo Designs Across Cycle I and Cycle II

Performance Category	Cycle I, Meetings I and II				Cycle II	
	Number of Students	Percentage	Number of Students	Percentage	Number of Students	Percentage
Able	3	23%	6	46%	11	85%
Unable	10	77%	7	54%	2	15%

Based on Table 11, students' ability to create Karawo designs improved progressively throughout each stage of the intervention. During the pre-intervention phase, no students met the established competency indicators for creating Karawo designs, resulting in a competency achievement rate of 0%. This condition was attributable to the fact that, prior to the implementation of the study, students had never been assigned to create Karawo designs independently. Classroom instruction had primarily focused on coloring pre-prepared Karawo patterns; consequently, students' design skills had not been assessed through a product-based evaluation.

Following the implementation of the Project-Based Learning (PjBL) model in Cycle I, Meeting I, the number of students classified as competent increased to 3 students (23%). This improvement indicates that students began to understand the fundamental stages of creating Karawo designs, although most continued to experience difficulties with the proportion and rhythm criteria.

Further improvement was observed in Cycle I, Meeting II, during which 6 students (46%) achieved the competent category. These findings suggest that instructional improvements, including the provision of clearer examples, more intensive teacher guidance, and more effective time management, positively influenced students' ability to complete the Karawo design project.

A more substantial improvement was achieved in Cycle II, in which 11 students (85%) were classified as competent, while only 2 students (15%) remained in the not yet competent category. This level of achievement met the predetermined success indicators of the study; therefore, the classroom action research was concluded at the end of Cycle II.

To provide a clearer illustration of the progression of students' performance throughout each stage of the study, the data are presented in the following table.

Table 12. Development of Students' Ability at Each Stage of the Research

Stage	Percentage of Students Demonstrating Ability
Pre-action Stage	0%
Cycle I, Meeting I	23%
Cycle I, Meeting II	46%
Cycle II	85%

Based on Table 12, it can be seen that students' ability to create Karawo designs improved gradually after the implementation of the Project-Based Learning (PjBL) model. The percentage of students who achieved the ability category increased from 0% in the pre-action stage to 23% in Cycle I, Meeting I, then increased to 46% in Cycle I, Meeting II, and reached 85% in Cycle II. This improvement indicates that the implementation of the Project-Based Learning (PjBL) model provided students with more meaningful learning experiences through project activities, enabling them to actively develop ideas, arrange motifs, and produce Karawo designs based on the assessment indicators.

In addition to the increase in the number of students who achieved the ability category, the research findings also revealed improvements in each aspect of the assessment of students' ability to create Karawo designs. In Cycle I, Meeting I, most students still obtained low scores in the aspects of proportion and rhythm. After instructional improvements were implemented in the subsequent meeting and continued in Cycle II, students' abilities in the aspects of unity, proportion, rhythm, and harmony showed significant improvement. The harmony aspect demonstrated the highest development, with 85% of students achieving the maximum score in Cycle II, while the proportion and rhythm aspects also showed improvement, although not all students achieved the maximum score. These findings indicate that the implementation of the Project-Based Learning (PjBL) model not only improved students' final learning outcomes but also enhanced the quality of students' abilities in each indicator of Karawo design creation.

Discussion

The discussion section indicates that after conducting observations, evaluations, and reflections throughout two cycles, students' ability to create Karawo designs improved. This improvement was demonstrated by the quality of students' artworks, which increasingly met the expected criteria compared to the conditions before the instructional intervention was implemented. The learning outcomes and reflections from Cycle I and Cycle II show that the implementation of the Project-Based Learning (PjBL) model improved students' ability to create Karawo designs in Grade IV at SDN 5 Tilongkabila, Bone Bolango Regency.

The improvement in students' abilities occurred gradually in line with the implementation of each stage of the Project-Based Learning (PjBL) model. The project planning stage provided students with opportunities to understand the learning objectives, identify the characteristics of Karawo designs, and develop initial designs before starting the creative process. During the project

implementation stage, students gained direct experience in developing motifs, determining the composition of shapes, and combining visual elements to produce a design. Meanwhile, during the project evaluation and presentation stage, students received feedback from both teachers and peers, enabling them to improve weaknesses in their completed artworks. This sequential learning experience helped students develop a deeper understanding because they learned through direct practice, reflection, and refinement of their creative products.

The successful improvement of students' abilities was also inseparable from the teacher's role throughout the learning process. The teacher not only delivered instructional materials but also provided demonstrations of the stages involved in creating Karawo designs, including motif arrangement, composition organization, and design completion. These demonstrations provided concrete examples that enabled students to understand the required steps more easily. In addition, the guidance provided by the teacher during the project process helped students overcome difficulties, particularly in determining shape proportions, arranging repeated patterns, and selecting appropriate combinations of visual elements. Continuous assistance allowed students to receive immediate feedback so that errors could be corrected before affecting the final quality of their artworks.

Another factor contributing to the improvement of students' abilities was effective time management during the learning process. Dividing activities into several project stages provided students with sufficient opportunities to complete each process gradually without excessive time pressure. Adequate time allocation enabled students to explore ideas, revise their designs when weaknesses were identified, and refine their final products based on teacher feedback. Therefore, the learning process was not merely oriented toward product completion but also provided opportunities for students to learn through continuous improvement and revision.

The development of students' abilities was reflected in the increasing number of students who achieved the ability category, rising from 23% in Cycle I Meeting I to 46% in Meeting II, and further increasing to 85% in Cycle II. These results indicate that students increasingly understood the stages of creating Karawo designs and were able to produce better artworks based on the aspects of unity, proportion, rhythm, and harmony. However, the achievement levels across each aspect did not show identical results. The harmony aspect obtained the highest achievement because most students were relatively more capable of combining shapes, colors, and motifs to create visually balanced designs. This condition was supported by the characteristics of Karawo designs, which generally use decorative patterns with repeated motifs that facilitate students in creating visual harmony. Conversely, the aspects of proportion and rhythm showed relatively lower achievement because these aspects require more complex abilities. Students must be able to determine balanced relationships among elements and arrange repeated motifs systematically to create consistent visual flow. These abilities require greater accuracy, experience, and more intensive practice compared to the harmony aspect.

These findings are consistent with art learning theories emphasizing that creative abilities develop through direct practical experiences, experimentation, improvement, and reflection on artistic products. In the context of Karawo design creation, mastery of design principles such as unity, proportion, rhythm, and harmony is not only obtained through theoretical explanations but also developed through repeated activities of designing and producing artworks. Therefore, project-based learning provides students with opportunities to develop artistic skills while enhancing their understanding of Karawo decorative patterns as part of local cultural heritage.

The improvement of students' abilities in this study occurred because the Project-Based Learning (PjBL) model encouraged students to participate directly in all stages of project completion,

including planning, implementation, and evaluation of the final product. Active participation throughout the learning process helped students become more focused, develop higher learning motivation, and demonstrate responsibility in completing their tasks. This finding is consistent with the view of Nababan, Marpaung, and Koresy (2023), who stated that in Project-Based Learning (PjBL), students act as the main agents of learning by constructing knowledge through the process of producing a product. It is also supported by Nasrulloh, Eko, and Amal (2024), who emphasized that the success of the learning process is strongly influenced by students' active involvement during learning activities.

The findings of this study are also supported by research conducted by Anggraeni et al. (2023), which demonstrated that the use of Project-Based Learning (PjBL) can develop students' creativity through project-oriented learning, thereby increasing students' engagement, enthusiasm, and ability to produce creative works. The similarity of these findings indicates that students' involvement in the process of producing products is one of the factors supporting the improvement of creative abilities. In this study, such improvement was evident in students' ability to design Karawo patterns developed through systematic project stages.

Furthermore, the findings are supported by the research of Idawati, Nurjanah, and Alfianto (2024), which showed that the implementation of Project-Based Learning (PjBL) can improve textile motif design competencies. However, this study has different characteristics because it focuses on developing students' ability to create Karawo designs as one of the traditional decorative arts of Gorontalo based on local wisdom. Students' abilities were assessed more specifically through the aspects of unity, proportion, rhythm, and harmony, providing a detailed description of the development of each design principle mastered by students. Thus, the results of this study demonstrate that the implementation of Project-Based Learning (PjBL) can improve students' ability to create Karawo designs in the observed class while simultaneously supporting efforts to introduce and preserve local culture through art education in elementary schools.

Based on the overall discussion, it can be understood that the improvement of students' abilities was influenced not only by the final products produced but also by the learning process experienced throughout the project implementation. Teacher demonstrations, guidance during project activities, opportunities for revision, structured time management, and students' active involvement in each learning stage provided meaningful learning experiences for developing students' ability to create Karawo designs. Therefore, it can be concluded that the implementation of the Project-Based Learning (PjBL) model improved students' ability to create Karawo designs in Grade IV at SDN 5 Tilongkabila, Bone Bolango Regency.

Based on the research findings, it can be concluded that the implementation of the Project-Based Learning (PjBL) model accompanied by gradual guidance improved the ability of Grade IV students at SDN 5 Tilongkabila, Bone Bolango Regency, to create Karawo designs in the observed class. This improvement was reflected in students' mastery of design principles, although the aspects of proportion and rhythm still require further reinforcement through more intensive practice and guidance. This study has several limitations, as it involved only one class with a relatively small number of participants, was conducted in a single school, and did not employ a comparison group. Therefore, the findings are limited to the specific context examined in this research. Accordingly, teachers may utilize the Project-Based Learning (PjBL) model as an alternative approach for Arts, Culture, and Craft learning that integrates local cultural values. Future research is recommended to involve a broader range of participants and be conducted across multiple schools to obtain more comprehensive findings.

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