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# **Development of Authentic Assessment Instruments in PJBL in** Fine Arts Learning for Grade 4 at Muhammadiyah 4 Elementary School Malang City

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Abstract: This study aims to develop an authentic assessment instrument for Project-Based Learning (PJBL) in Fine Arts for fourth grade elementary school students. This instrument is designed to comprehensively assess the process and results of students' work, particularly in the activities of designing and designing lesson schedules as visual art products. The study used the Research and Development (R&D) method with the stages of needs analysis, instrument design, expert validation, and limited classroom trials. The results show that the developed instrument is valid and feasible to use, and is able to effectively measure aspects of creativity, technical skills, and student cooperation attitudes. This instrument is recommended as a contextual assessment tool that can support the implementation of more meaningful and comprehensive PJBL learning at the elementary school level.

**Keywords:** Authentic Assessment, PJBL, Assessment Instruments

## PRELIMINARY

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The transformation of learning in the 21st century demands strengthening critical, creative, collaborative, and communicative thinking skills in students. This need necessitates the implementation of contextual and meaningful learning approaches, one of which is Project-Based Learning (PJBL). PJBL provides space for students to play an active role in creating products through real-world problem-solving processes. In the context of Fine Arts learning in elementary schools, PJBL is highly relevant because it encourages students to think visually, express ideas, and collaborate in teams to produce works of art with personal and social meaning (Pratama and Surahman 2023; Syifaul Mufaidah and Conny Dian Sumadi 2024).

However, the implementation of PJBL has not been fully balanced by appropriate assessment practices. Assessments tend to focus on the final outcome (product), without reflecting the process and comprehensive student involvement. Teachers also face difficulties in designing assessment instruments that comprehensively reflect student achievement, including performance, attitude, and presentation. Based on initial observations, it was found that teachers only used final assessments of student products, without a structured rubric to assess student processes, attitudes, or collaboration. Informal interviews with teachers also revealed that comprehensive and applicable authentic assessment instruments for the PJBL context were not yet available, so assessments remained subjective. A review of the learning tools used by teachers also showed a lack of integration of authentic assessments that cover all important aspects of project-based learning. However, the Independent Curriculum emphasizes the importance of authentic assessment as an integral part of learning, namely assessment that is contextual, reflective, and oriented towards meaningful learning experiences (Habibah 2022); (Achmad et al. 2022).

Several previous studies have highlighted the importance of developing assessment instruments that align with the characteristics of PJBL. (Setiawan and Tumardi 2019) developed an authentic assessment instrument for thematic learning in elementary schools and found that structured rubrics helped teachers assess skill domains more objectively. (Fitriyah et al. 2024) examined the application of authentic assessment in arts and culture learning and concluded that teachers need tools capable of comprehensively assessing students' creative processes. Furthermore, (Rachmadyanti 2017) demonstrated that character-based arts learning requires assessments that assess not only visual products but also students' thinking processes and social interactions.

While these studies make important contributions to understanding assessment in PJBL and arts learning, most remain conceptual or limited to learning implementation. Few studies have specifically developed authentic assessment instruments that are fully integrated into the PJBL model for Fine Arts learning at the elementary school level. This is a crucial gap that this research aims to address. Based on this background, this study aims to develop an authentic assessment instrument for PJBL learning in the Fine Arts subject of fourth grade students at Muhammadiyah 4 Elementary School, Malang City. This instrument is designed to comprehensively assess students' learning processes and outcomes, from project involvement, visual works, presentation skills, to learning attitudes. To achieve this goal, this study formulates core problems related to the need for and effectiveness of assessment instruments in the context of PJBL learning.

#### **METHOD**

This study used a Research and Development (R&D) approach with the ADDIE model, which consists of five stages: analysis, design, development, implementation, and evaluation. The objective of this study was to produce a valid and practical authentic assessment instrument for Project-Based Learning (PJBL) in Fine Arts in fourth grade elementary school. The ADDIE model is often used in the development of learning tools because it is systematic and flexible, and capable of producing empirically tested products (Afifah and Zhara 2024). The research process began with a needs analysis, followed by instrument design, expert validation, revision, classroom trials, and evaluation of the instrument's effectiveness. The study was conducted at Muhammadiyah 4 Elementary School in Malang City, with a sample of 25 students from one class, one fine arts teacher, and three validators (an art education expert, an elementary education evaluation expert, and an elementary school teacher practicing PJBL). The location was selected based on the school's experience in implementing PJBL and the teachers' openness to assessment innovation (Adinda, Wahyuni, and Majidah S 2020). The instruments used included curriculum documents, PJBL learning tools, and assessment rubrics for performance, product, presentation, and attitude, plus teacher observation sheets and student reflection sheets. The instrument grid covered four main aspects: process (participation, cooperation, perseverance), product (creativity, aesthetics, neatness), presentation (clarity, confidence, content mastery), and attitude (discipline, independence, social interaction). The instruments were validated by three experts and analyzed quantitatively using percentages to assess their validity. Meanwhile, the implementation data were analyzed qualitatively by reducing data, presenting data, and drawing conclusions according to the Miles and Huberman model.

## **RESULTS**

This research was conducted through five development stages based on the ADDIE model: analysis, design, development, implementation, and evaluation. Each stage produced relevant data and findings to answer the research problem formulation and achieve the research objective, namely developing an authentic assessment

instrument that aligns with the characteristics of project-based learning in Fine Arts subjects for fourth grade elementary school students.

# 1. Analysis Stage

In the analysis phase, researchers identified the need for authentic assessment in PJBL learning through initial observations in fine arts classes, informal interviews with teachers, and curriculum reviews. The analysis revealed that current assessments still focus on the final product without encompassing process aspects such as student engagement, collaboration, attitudes, and communication skills. This finding aligns with the Independent Curriculum policy, which emphasizes holistic assessment based on real-world contexts. Previous research, such as (Tia, Widodo, and Anwar 2022), also emphasizes the importance of instruments capable of measuring students' comprehensive process skills. The results of this analysis serve as the basis for designing more comprehensive and contextual assessment components.

## 2. Design Stage

In the design phase, researchers created assessment instruments to comprehensively assess student learning processes and outcomes. The goal of this phase was to ensure the instruments were relevant, structured, and easy for teachers to use. These instruments consisted of four main rubrics: performance, product, presentation, and attitude. Additionally, teacher observation sheets and student reflection sheets were prepared to support formative assessment and gain more comprehensive insight into the learning process. All instruments used a four-level scale (Excellent, Good, Adequate, and Poor) to facilitate teacher assessment and classification of student learning outcomes.

Table 1. Categories of Authentic Assessment Research Instruments in PJBL

No	Types of Instruments	Aspects Assessed	Instrument Type	Purpose of Use
1	Performance Assessment Rubric	Cooperation, responsibility, perseverance, participation	4-Level Scale	To assess process skills during project activities
2	Product Assessment Rubric	Creativity, aesthetics, neatness, appropriateness of content	4-Level Scale	To assess the quality of work produced in the form of lesson schedule designs
3	Presentation Rubric	Clarity of delivery, mastery of content, self-confidence	4-Level Scale	Assessing students' ability to convey project ideas

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No	Types of Instruments	Aspects Assessed	Instrument Type	Purpose of Use
4	Attitude Assessment	Responsibility, discipline, social	4-Level Scale	Assessing students' attitudes and character values during the project
	Rubric	interaction		
5	Teacher Observation Sheet	Student engagement, tool use, collaboration	Descriptive Format	Recording students' behavior directly during the learning process
6	Student Reflection Sheet	Perception, difficulties, strategies for overcoming challenges	Open-Ended Questions	Exploring students' experiences and understanding of the project activities undertaken

Most students showed creative, neat work that was appropriate to the context of the project assignment.

## 3. Development Stage

The designed instrument was then developed into a final draft and validated by three experts: an art education expert, an elementary education evaluation expert, and a practicing elementary school teacher. The validation results showed that the instrument was suitable for use with minor revisions, with an average validation score of 90.6% (Very Valid). The revisions included refining the wording of the indicators and adding examples of how to use the rubric to make it easier for teachers to understand and implement.

**Table 2. Instrument Validation Results** 

No	Subject	Validation Category	Score	Validation Percentage	Instrument Validity Level
1	Arts Education Expert	Indicators must be complete, clear, consistent, and relevant to arts learning.	29	90.6%	Highly Valid
2	Elementary Education Evaluation Expert	Indicators must be clear, appropriate to the characteristics of elementary school students, easy to use, and relevant for formative assessment.	29	90.6%	Highly Valid
3	Elementary School Teacher Assessment Practitioner	Instruments must be easy to implement in the classroom, appropriate in format, meet teacher needs, be easy for students to understand, be practical, and effective.	29	90.6%	Highly Valid
Average			29	90.6%	Very Valid

Based on the validation results by three experts, the average instrument validation score was 29 with a percentage of 90.6%. Based on the validation criteria, this value is included in the Very Valid category so that the instrument is declared suitable for use in

PJBL learning in the Fine Arts subject for grade IV at Muhammadiyah 4 Elementary School, Malang City. This validation includes aspects of content suitability, readability, and ease of use of the instrument by teachers.

An example of instructions for use and the form of the assessment instrument can be seen in Figure 1.

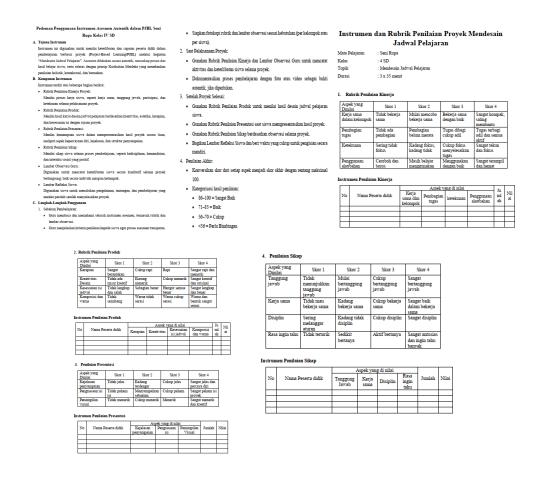


Figure 1. Example of instructions for use and form of assessment instrument

## 4. Implementation Stage

The instrument was piloted in the "Designing a Lesson Schedule" project in fourth-grade students at Muhammadiyah 4 Elementary School in Malang City, spanning three meetings. Throughout the learning process, the teacher used an assessment rubric and observation sheets to assess both the overall learning process and outcomes of students. The results of student assessments during the project are presented in Table 3.

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Table 3. Student assessment results based on assessmen	t aspects
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Assessment Aspects	Very Good	Good	Moderate	Number of Students
Performance	21	4	0	25
Product	19	6	0	25
Presentation	20	5	0	25
Attitude	22	3	0	25

Visualisasi dari data tersebut ditampilkan pada grafik batang berikut:

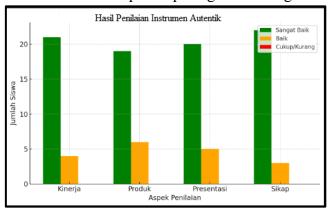


Figure 2. Results of the Authentic Instrument Assessment per Aspect

The implementation of the field trial can be seen in the following figure.





Figure 3. Students create a lesson schedule and present their work.

## 5. Evaluation Stage

Evaluation was conducted through analysis of assessment data, observation notes, and student reflections. Teachers stated that this instrument was very helpful in assessing the overall process and outcomes of project-based learning. Furthermore, students were able to reflect effectively on their learning experiences through the provided reflection sheets. Several inputs, such as simplifying indicators and adding examples of rubric usage, were accommodated to refine the instrument, making it easier to understand and implement in the classroom.

#### DISCUSSION

The trial results showed that the developed authentic assessment instrument proved effective and practical for use in project-based learning (PJBL) in Fine Arts for fourth-grade elementary school students. Overall, all aspects of the assessment, from performance assessment, product assessment, presentation assessment, to attitude assessment, were easily applied by teachers and provided a comprehensive overview of student learning outcomes. This finding reinforces the fact that the developed instrument is not only conceptually relevant but also applicable in the context of real-life classroom learning (Umi Faizah 2020).

In terms of performance assessment, students demonstrated strong collaboration skills, role allocation, and responsibility during the Designing Lesson Schedule project. This aligns with findings (Mutiara Rosalina and Herry Sanoto 2023) that PJBL fosters active participation and collaborative attitudes in art learning. The presence of a performance rubric facilitates teachers' systematic observation throughout the process while providing objective and targeted feedback to students. Thus, performance serves not only as an indicator of outcomes but also of the dynamic learning process.

Product assessment focused on design creativity, neatness, and the appropriateness of the content of the student-created lesson schedule. High scores in these aspects indicate that the project successfully stimulated students' visual imagination while enhancing their understanding of the structure of daily learning activities. These findings support the view (Miranti et al. 2021) that fine arts learning in elementary schools is an important means of fostering artistic expression, aesthetic awareness, and reflective thinking skills from an early age. This instrument allows teachers to assess students' work in a more in-depth and measurable manner.

The presentation aspect assesses students' ability to convey their work orally, including clarity of speech, mastery of the material, and visual presentation. The majority of students demonstrated confidence and were able to explain their projects effectively. This indicates that the project activities were not solely oriented toward visual products but also strengthened oral communication skills and mastery of the material. Therefore, this instrument accommodates critical thinking processes and presentation skills, two important aspects of authentic assessment, as described by Yuana (2020).

Attitude assessments contribute significantly to holistic assessment. Teachers can observe and assess values of responsibility, discipline, and cooperation among group members through structured observation sheets. With clear indicators, attitude assessment becomes more objective and does not rely solely on teachers' subjective perceptions (Suhendra 2021). This aligns with the principles of formative assessment in the Independent Curriculum, which emphasizes assessment as an integral part of the learning process, not simply a measurement of final results.

Based on the results of the pilot test and data analysis, it can be concluded that the developed authentic assessment instrument can serve as a complete and comprehensive assessment tool, integrating the three core competency domains: cognitive, affective, and psychomotor. Another advantage of this instrument is its flexibility, allowing it to be adapted and applied to various learning projects beyond Fine Arts. Findings (Widiyaningsih, Susanto, and Erniasari 2024) indicate that the rubric used in the fine arts learning project can be adapted to various themes, while significantly enhancing student creativity. Although the instrument's implementation generally went smoothly, several important points were noted, such as the need for training or technical guidance for teachers to understand and use the assessment rubric appropriately and consistently. Furthermore, time constraints within the elementary school learning schedule often hinder the optimal implementation of PJBL. Therefore, further development needs to include the preparation of technical guidelines for the use of instruments as well as effective time management strategies so that the implementation of PJBL and authentic assessment can run more efficiently and evenly across all classes.

The use of this instrument is highly recommended for continuous implementation in project-based learning. Authentic assessment has been proven to increase students' active participation, self-reflection, and meaningful understanding (Noor and Tomoliyus 2021; Febriani 2021). More than just a tool for measuring learning outcomes, authentic assessment plays an integral role in contextual and learner-centered learning strategies. Involving students in the assessment process, both through self-reflection and peer assessment, helps them understand their own potential and weaknesses while also appreciating the role of their classmates. This practice is particularly relevant in the context of PJBL, which emphasizes the importance of collaborative work and personal responsibility at every stage of learning.

Thus, the development of this authentic assessment instrument not only provides a practical alternative to project-based assessment but also encourages a transformation of assessment practices toward a more meaningful, humanistic, and contextual approach at the elementary education level. By actively involving students in the assessment process, it is hoped that a strong sense of responsibility and reflective character will be developed in their learning. The findings of this study confirm that authentic assessment plays a transformative role in instilling character values, encouraging creativity, and developing student independence. To optimally achieve holistic learning goals, teachers, as facilitators, need to equip themselves with adequate understanding and skills to consistently implement this instrument in the classroom (Mulyati et al. 2023).

#### **CONCLUSION**

Based on the research results and data analysis during the development and trial process, it can be concluded that the authentic assessment instrument developed for project-based learning (PJBL) in Fine Arts in fourth-grade students at Muhammadiyah 4 Elementary School, Malang City, proved feasible and effective. This instrument, consisting of assessment rubrics for performance, product, presentation, and attitude, was designed to assess the learning process and outcomes comprehensively and contextually. Using this instrument facilitated teachers' objective and systematic assessments while encouraging students to demonstrate collaboration skills, visual creativity, responsibility, and communication skills through presentations. The trial results showed that the majority of students received "very good" ratings in all assessed aspects and provided positive feedback through reflections on the project activities.

Although the implementation went smoothly, several important points were noted, such as the need for teacher guidance to use the rubric consistently and efficiently, and the need for time adjustments to ensure the project runs optimally within a limited learning schedule (Humaeroh 2023). Therefore, it is recommended that this instrument be used continuously in project-based learning, not only in Fine Arts but also in other subjects that emphasize process and product assessment. For further development, this instrument can be supplemented with self-assessment and peer-assessment components as part of a collaborative formative assessment. Furthermore, it is important for schools and teachers to continue strengthening their understanding of the concept of authentic assessment as a crucial component of meaningful and transformative learning in the Independent Curriculum era.

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