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The Influence of the Project Based Learning Model on Creative Thinking Skills Students of Karangjati 01 Elementary School, Cilacap through Ecoprinting

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ABSTRACT

This study aims to analyze the effect of the Project-Based Learning (PjBL) learning model on students' creative thinking skills at SDN Karangjati 01 Cilacap through ecoprint making. This study uses a qualitative approach with a descriptive method. Data were collected through observation and interviews during the learning process. The subjects of the study were 23 fifth-grade students of SDN Karangjati 01 Cilacap who participated in learning with the PjBL model. The results showed that the PjBL learning model that integrated ecoprint making activities had a positive effect on students' creative thinking skills. Students were more active, innovative, and able to produce creative ecoprint works. The application of the PjBL model also increased student motivation and participation in learning. Thus, the PjBL learning model through ecoprint making is effective in improving students' creative thinking skills in elementary schools.

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1. INTRODUCTION

21st century elementary education requires students to have diverse skills, including creative thinking skills. Students need to develop creative thinking skills to be able to compete globally, be innovative in solving problems, and be able to produce original ideas that are useful in everyday life. Unfortunately, creative thinking skills are generally still low for elementary school students in Indonesia.[1]

One of the learning models that can improve the creative thinking skills of elementary school students is Project Based Learning (PjBL). PjBL is a learning model that bases the learning development process on a "project." In other words, the learning process is integrated with project groups, which are carried out by students. Students learn by carrying out real projects with project ideas or concepts. Through the PjBL process, students are encouraged to identify existing problems, work together to create solutions, work together, and communicate the results of their work.

The PJBL learning model consists of several activities that utilize contextual and authentic experience problems that can improve student learning. The steps for implementing PJBL according to George are as follows: a) determining basic questions, b) designing project planning, c) preparing a schedule, d) monitoring students and project progress, e) assessing project results, f) evaluating.[2]

PjBL stimulates aspects of creative thinking skills, namely fluency, flexibility, originality, and elaboration. From the results of the study review, the application of PjBL can significantly improve the creative thinking skills of elementary school students compared to conventional models.[3].

One of the innovations in implementing PjBL in elementary schools is through the ecoprint project. Ecoprint in language is, eco which comes from the term ecosystem which means nature. While print means to print. So ecoprint is a printing technique that uses natural materials, such as leaves, flowers, and other organic materials, to create patterns and images in media such as cloth, paper and tote bags.[4].

In the implementation of this ecoprint project, it not only provides practical experience to students, but also teaches them about the importance of protecting the environment and utilizing natural resources sustainably. By integrating ecoprint projects in learning, students are expected to better understand the concepts taught, as well as students' creative thinking skills.[5].

Eco-friendly ecoprint projects using natural materials are becoming increasingly popular. One way to implement an eco-friendly ecoprint project is to determine the ecoprint technique to be used. Ecoprint techniques are one way to encourage student creativity. Therefore, there are various ecoprint techniques such as pounding, boiling and steaming. A simple and easy-to-do ecoprint technique is the pounding technique which uses a hammer-like hammer to transfer the color and motif of natural materials to the print media.[6].

The ecoprinting project in this study was carried out using a pounding technique and the media used was plain cloth. The use of the pounding technique on plain cloth media is done by hitting the leaves or flowers using a hammer. The hammer is hit on the leaves or flowers that have been placed on the cloth covered with plastic to extract the color pigment. The beating process starts from the edge of the leaf and follows the leaf grooves until it is printed on the cloth. This technique produces a unique color pattern on the cloth [7].

Ecoprint is a technique of printing natural motifs of leaves and flowers on fabric, which not only introduces local art and wisdom, but also provides a fun and meaningful learning experience. This activity allows students to explore, innovate, and solve problems directly, so that they can improve their creative thinking skills.[5]

According to Torrance, creative thinking skills can be measured through four main indicators, namely: (1) fluency, namely the ability to produce many ideas or solutions in a short time, (2) flexibility, namely the ability to produce various different ideas or solutions, (3) originality, namely the ability to produce unique or unusual ideas, (4) elaboration, namely the ability to develop or detail an idea to make it more detailed and interesting.[8].

Research that integrates the PjBL model with ecoprint making shows that students experience significant improvements in the four indicators of creative thinking according to Torrance. Students become more fluent in expressing ideas, more flexible in finding alternative solutions, are able to produce original work, and are able to elaborate their ideas into innovative and interesting products.[5].

The researcher conducted initial observations related to the creative thinking skills of 23 fifth grade students of SDN Karangjati 01. Based on the initial observations, the following results were obtained. The aspect of fluency, most students showed low ability in generating many ideas or answers to a problem. Of the 23 students, only about 6 students (26%) were able to express more than one idea fluently, while the rest tended to provide single or limited answers. This shows that the flow of students' thoughts has not flowed freely and smoothly in facing creative tasks. The aspect of flexibility, students' ability to produce various strategies or different points of view is also relatively low. Only 5 students (22%) were able to see a problem from various perspectives and provide various answers. Most students are still fixated on one way of solving without trying other alternatives, so their flexibility of thinking has not developed optimally. The aspect of originality, the ability to generate ideas or concepts that are unique and different from others is also still minimal. Of the 23 students, only 4 students (17%) were able to provide original and unusual answers or solutions. Other students tend to imitate or repeat common ideas, so creativity in terms of originality still needs to be improved. Elaboration aspect, in developing or detailing ideas, most students have not been able to develop ideas in detail. Only 5 students (22%) were able to add details or enrich the ideas they produced. Most students gave simple and less in-depth answers, so the elaboration aspect is still low.

Based on the empirical data of the initial observation, students' overall creative thinking skills are still relatively low. This is indicated by the low scores on the four indicators of creative thinking. This condition indicates the need for learning interventions that can improve students' ability to produce many, diverse, original, and detailed ideas, such as the application of the Project Based Learning learning model integrated with creative activities through ecoprint making. The results of this study are expected to contribute to the development of relevant and effective learning models to improve students' creative thinking skills.

2. METHOD OF THE RESEARCH

This study uses a qualitative approach with a descriptive method. This approach was chosen to describe in depth the learning process using the Project Based Learning (PjBL) model integrated with ecoprint making and how the process affects the creative thinking skills of elementary school students. Qualitative research allows researchers to explore experiences, interactions, and changes that occur during the learning process contextually.[9]

The research was conducted at SD Negeri Karangjati 01 Sampang, Cilacap Regency on grade V students. The subjects of the research were students as the main actors in the project. The selection of subjects was carried out purposively to obtain rich and relevant information related to the application of learning models and the development of student creativity.[10].

Data were collected through tests and observations. The test was conducted in 2 stages, namely pretest and posttest. The pretest was conducted before conducting the PjBL trial and the posttest was conducted after conducting the PjBL trial. Students were given closed questions that referred to indicators of creative thinking skills, namely: fluency, flexibility, originality, elaboration. Observations were conducted by observing the activities of students and teachers during the PjBL learning process of making ecoprints.

3. RESULTS AND DISCUSSION

The research implemented the PjBL model with the following steps:

a. Determining basic questions, at the initial stage, the teacher provides open questions related to environmental issues and ecoprint techniques that arouse students' curiosity.
b. Designing a project plan, students design the steps for making ecoprints in groups, starting from determining the division of tasks, determining the tools and materials including the leaves or flowers to be used, to designing the motif design.
c. To create a schedule, students and teachers create a detailed project implementation schedule, including the preparation, implementation and evaluation stages.
d. Monitoring students and project progress, monitoring is done periodically through direct observation and daily notes. Data shows that over time, students are increasingly independent and creative in solving technical problems, such as overcoming difficulties in performing hitting techniques or correcting unclear motifs. Group interaction also increases, demonstrating effective collaboration in developing creative solutions.
e. Assessment of project results, assessment is done through creativity tests and observations. The results show a significant increase in students' creative thinking skills, seen from the variety of motifs, the use of natural colors, and the innovation of techniques applied. Most students are able to develop ecoprint patterns that are not only aesthetic but also contain environmental messages, indicating increased critical and creative thinking skills.
f. Evaluation, conducted through student reflection and group discussions. Students reported increased understanding of the ecoprint concept and environmental awareness, as well as confidence in experimenting with new techniques. Daily journal documentation and short interviews revealed that the PjBL model provided space for students to develop ideas freely and learn from failure, which are important aspects of creative thinking.

In the first step, namely determining the basic questions, the researcher distributed pretest questions and in step 6, namely evaluation, the researcher distributed posttest questions. The results of the pretest and posttest on 23 fifth grade students are presented in the following table.

Table 3.1 Comparison of Students' Pretest and Posttest Results

Indicator	Category	Pretest (%)	Posttest (%)
Fluency	Tall	48% (11 students)	78% (18 students)
	Currently	39% (9 students)	17% (4 students)
	Low	13% (3 students)	5% (1 student)
Flexibility	Tall	43% (10 students)	74% (17 students)
	Currently	44% (10 students)	20% (5 students)
	Low	13% (3 students)	6% (1 student)
Originality	Tall	39% (9 students)	70% (16 students)
	Currently	43% (10 students)	22% (5 students)

Indicator	Category	Pretest (%)	Posttest (%)
	Low	18% (4 students)	8% (2 students)
Elaboration	Tall	52% (12 students)	80% (18 students)
	Currently	35% (8 students)	15% (3 students)
	Low	13% (3 students)	5% (1 student)

Based on table 3.1 it can be explained as follows:

a. **Fluency (Thinking Fluency)**

There was a significant increase in the fluency aspect, where the percentage of students in the high category increased from 48% in the pretest to 78% in the posttest. This shows that after participating in learning with the PJBL model, students were able to produce more ideas and variations of ecoprint motifs more fluently and spontaneously. The decrease in the medium and low categories also indicates that students who were previously less able to develop ideas are now experiencing real progress.

b. **Flexibility (Flexibility of Thinking)**

Students' flexible thinking skills also experienced positive developments, as evidenced by the increase in high category students from 43% to 74%. Students are increasingly able to adapt and find alternative materials and techniques in making ecoprints when faced with obstacles. The decrease in the proportion of students in the medium and low categories shows that PJBL learning has succeeded in training students to think more flexibly and creatively in solving problems.

c. **Originality (Original Ideas)**

The originality aspect showed a significant increase, where students who were able to produce original ideas increased from 39% to 70%. This indicates that students are braver and able to create unique and different ecoprint motifs from their friends after participating in the PJBL learning process. The decrease in students in the medium and low categories also reflects an increase in students' courage and creativity in innovating.

d. **Elaboration (Detailing and Development of Ideas)**

In the elaboration indicator, the percentage of students in the high category increased from 52% to 80%, indicating that students are increasingly proficient in enriching and developing ecoprint motifs with more complex details and variations of techniques. The decrease in students in the medium and low categories indicates an increase in students' ability to process ideas into more mature and visually appealing works.

To strengthen the students' test results, the researcher conducted observations to measure the students' creative thinking skills in the ecoprint making project. The observation results are presented in the following table.

Table 3.2 Results of observations of students' creative thinking skills

Indicator	High Category (%)	Medium Category (%)	Low Category (%)
Fluency	55% (13 students)	30% (7 students)	15% (3 students)
Flexibility	50% (12 students)	35% (8 students)	15% (3 students)
Originality	45% (10 students)	40% (9 students)	15% (4 students)
Elaboration	52% (12 students)	33% (8 students)	15% (3 students)

a. Fluency (Thinking Fluency)

Observations show that 55% of students are able to produce various ideas and solutions in making ecoprints fluently and in various ways. They are able to come up with many motifs and natural coloring techniques without significant difficulty. Around 30% of students show moderate fluency abilities, still need encouragement to be more active in expressing ideas, while 15% of students still have difficulty in expressing ideas spontaneously and in various ways.

b. Flexibility (Flexibility of Thinking)

As many as 50% of students demonstrated flexible thinking skills by being able to see problems from various perspectives and find alternative materials or ecoprint techniques when faced with obstacles. They were able to adapt and change their approach according to project needs. Meanwhile, 35% of students were in the middle category, sometimes still stuck in one way, and another 15% still had difficulty thinking flexibly in the context of the project.

c. Originality (Original Ideas)

In terms of originality, 45% of students were able to produce unique ecoprint ideas and motifs that were different from their friends, showing good creativity in creating unusual combinations of motifs and colors. As many as 40% of students were at a moderate level, meaning they were starting to try to innovate, but many still followed common patterns. The remaining 15% of students still tended to be less brave in developing original ideas.

d. Elaboration (Detailing and Development of Ideas)

More than half of the students (52%) were able to enrich the ecoprint motif by adding details and variations of techniques so that the work became more interesting and complex. Around 33% of students were in the moderate category, meaning they were starting to pay attention to details but not optimally, and 15% of students were still lacking in developing ideas in detail.

4. CONCLUSION

Based on the results of qualitative data analysis obtained through observation, interviews, and documentation during the learning process, it can be concluded that the application of the Project-Based Learning (PjBL) learning model through ecoprint making activities has a positive influence on students' creative thinking skills at SDN Karangjati 01 Cilacap. The PjBL model which emphasizes project-based learning allows students to actively explore, innovate, and develop creative ideas independently in producing ecoprint works. This learning process not only improves students' creative thinking skills but also fosters self-confidence and a sense of responsibility for the work they create. In addition, the interaction between teachers and students during learning supports the creation of a conducive learning environment for the development of creativity. Thus, the PjBL learning model through ecoprint making is very effective as a learning strategy to improve students' creative thinking skills at the elementary school level.

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