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Development of Project-Base Science Learning Activities Using The Fieldtrip Method to Improve Students' Learning Outcomes

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ABSTRACT

The creative thinking skills of students have become one of the focuses currently being pursued for improvement in Indonesia. This is manifested by incorporating creative thinking skills as one of the characters to be trained in the Merdeka Curriculum. This research aims to determine the profile of creative thinking skills of elementary school students in Surakarta city, thus providing considerations for the implementation and evaluation of the Merdeka Curriculum. The research was conducted using a survey method. The sample consisted of 200 fourth-grade students from 9 elementary schools in 5 districts of Surakarta city. There were 106 (53%) female and 94 (47%) male students in the sample. Sample selection was done using purposive sampling, by selecting fourth-grade classes as they have been implementing the Merdeka Curriculum for 2 years. The instrument used was a case-based essay test. The questions referred to the elements and sub-elements of creative thinking skills from the regulations governing the Profil Pelajar Pancasila of the Merdeka Curriculum. The data were analyzed descriptively and quantitatively. The research findings indicate that the creative thinking skills of elementary school students in Surakarta City are still relatively low, with an average score of 49.87. The implementation of the Merdeka curriculum, which focuses on 6 dimensions of student character, one of which is creative thinking, has not yet been able to enhance students' creative thinking skills.

Keywords: *Learning Activities, Project Based Learning, Fieldtrip*

INTRODUCTION

Elementary school-level educational institutions use theme-based learning. This theme-based learning not only encourages students to participate actively in their education but also challenges them to address difficulties that arise from their learning with the full attention they encounter in classroom activities based on existing experiences that can be trained. Based on the results of a literature review in the form of previous research along with a survey of several elementary schools, it turns out that the results of implementing learning are still less than optimal in using methods and adjusting models and methods according to student criteria, to improve student learning outcomes.

The application of the learning model paradigm is not appropriate and students' understanding is still lacking in learning (Tanuwijaya & Tambunan, 2021); (Octaviani, 2020); (Agung Wibowo et al., 2022). Students become bored in the learning process because learning is conventional so it is not fun (Astini, 2020); (Ammy & Wahyuni, 2020); (Damayanti, 2021), It

seems that students have difficulty expressing opinions and are less responsive in learning activities, which makes them afraid (Lestari, 2020); (Zebua & Harefa, 2022); (Noerr, 2021). Apart from that, students are less motivated in learning activities (Reni, 2021). (Yulistiana & Setyawan, 2020); (Rigianti, 2020). Compared to the role of students in learning activities, the role of teachers is still dominant in teaching (Subiyantoro et al., 2024; Utami & Basir, 2003).

Learning activities do not carry out learning in the form of projects. Several problems have been identified in this area, the first of which shows how inadequate the development of teachers' teaching materials (Yetra, 2019). Teachers remain focused on teaching manuals and student development manuals provided by the Ministry of Education and Culture (Kasmini, 2022); (Mayang Sari et al., 2022); (Sari et al., 2023). Second, there is still a lack of utilization of learning models in teaching materials. Finally, teachers lack creativity and knowledge about how to use teaching resources so that students only receive information without emphasizing the ability to self-discover, analyze, and solve problems in class. Fourth, students' enthusiasm for learning is low, because according to them learning is just receiving information, not looking for it.

To overcome this, improvements in teaching in subjects are needed. The use of various cutting-edge learning models is one of the teachers can use the project-based learning paradigm, especially the Project-Based Learning (PjBL) approach in several subjects (ANDAYANI, 2021); (Agustina et al., 2023); (Kasmini et al., 2022). Project-based learning is a useful paradigm for improving one's talents in problem-solving and creative thinking (PjBL) (Rifai et al., 2019); (Sinurat & Surya, 2020); (Mahmudah & Fauzia, 2022). Students can work alone or in groups using this PjBL learning strategy (Faisal et al., 2022). PjBL (Project-based learning) emphasizes student initiatives such as collecting and using data to create everything relevant to basic skills and achievement indicators, beneficial to the student's own life and others (Permata Puspita Hapsari & Zulherman, 2021); (Khoerunnisa & Aqwal, 2020), and beneficial to both (Wisman, 2020). According to (Magdalena, 2020) the environment formed during the educational process is a way for students to actively participate in their learning. Paradigm the PjBL (Project Based Learning) model of learning (Sumarni, 2019); (Lestari, 2020); (Zebua & Harefa, 2022), encourages students to deepen their understanding of knowledge or abilities so that learning activities are more focused (Reni, 2021). The PjBL model offers students hands-on experience and has many advantages for improving academic achievement (Yulistiana & Setyawan, 2020); (Yusnaldi, 2021).

Based on the results of the initial review, the Paya Dua Elementary School in Class IV has implemented a project-based learning model, namely PjBL. However, it can be seen from the implementation of the learning carried out on May 29 2023 that the implementation of the PjBL model has not been implemented optimally and optimally. Judging from the implementation and student learning outcomes, learning completeness in science learning was obtained, namely 33.85% completeness with an average of 64.71 and not yet reaching the KKM score. The results of the completion show that students have not achieved the grades that meet expectations, students' completion should have reached 97% with an average of 75.

Regarding this matter, action is needed to improve student learning outcomes in Class IV science learning at Paya Dua Elementary School. In this case, researchers took the initiative to develop learning process activities using the PjBL model combined with the field trip method. The researcher chose the field trip method because it has been proven by research results (Simamora, 2021) that student learning outcomes increase by using the field trip method. The field trip method is a teaching method that is carried out by taking students to a certain place or object outside the school to study or investigate something and inspect things such as the surrounding environment, playing fields, parks, and so on.

METHODS

This research uses the development method (Research & Development). Research & Development (R&D) is a research method carried out to produce certain products and test the validity, practicality, and effectiveness of the products produced (Sugiyono, 2017). This development research uses the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model flow which stimulates the main processes of the learning system development process. The development product needs to be analyzed first through a validation phase from several media, language, and material validators to see how valid the level of validation of the product being developed is. designing products that are developed through draft designs that are validated by media expert validators and adapted to learning materials. step development, namely data obtained from the results of the practicality of development products which were tested by students with science learning materials and carried out using the field trip method. step implementation is a step in collecting data on student learning outcomes through student competency tests and is designed based on products taught with science material. The evaluation stage is the stage where researchers take data on student learning outcomes while the product is being tested on students via LKPD. Researchers will find out student learning outcomes. The research roadmap is explained in the figure 1 below.

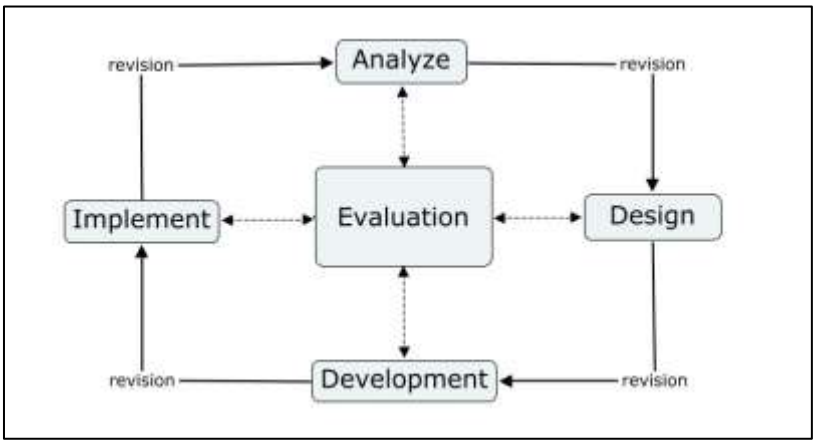

Figure 1. *ADDIE Models*

RESULTS AND DISCUSSION

The research results prove that the increase in student learning outcomes in understanding is marked by the Gain value. Gain is the difference between the posttest and pretest scores. Gain shows the increase in students' abilities after the learning process. The normalized NGain test was carried out to show how much the students' abilities increased in the cognitive aspect after participating in science learning with PjBL-based learning activities using the method field trip. The N-Gain calculation is the difference between the posttest and pretest scores divided by the difference between the highest score and the pretest score. Following are the N-Gain score results:

Table 1. *N-Gain*

	N	Minimum	Maximum	Mean	Std. Deviation
Ngain_Score	25	.25	,100	.8680	.23522
Ngain_Persen	25	25.00	100.00	86.8032	23.52174
Valid N (listwise)	25				

Table 1 shows the results of the N-Gain Score mean value of 0.8680, this value is greater than 0.3 (0.86>0.3), so the category obtained is high/high effectiveness. N-Grain Percent mean value is 86.8032, this value is greater than 76% (86%>76%), so it is interpreted as effective. So

it can be concluded that the use of PjBL-based learning activities through methods of field trips to improve student learning outcomes has proven to be effective.

Based on the results of data analysis on values Pre-Test and Post-Test Class IV students at Paya Dua State Elementary School in learning science using PjBL-based learning activities through the method field trip, can be illustrated in the following graph;

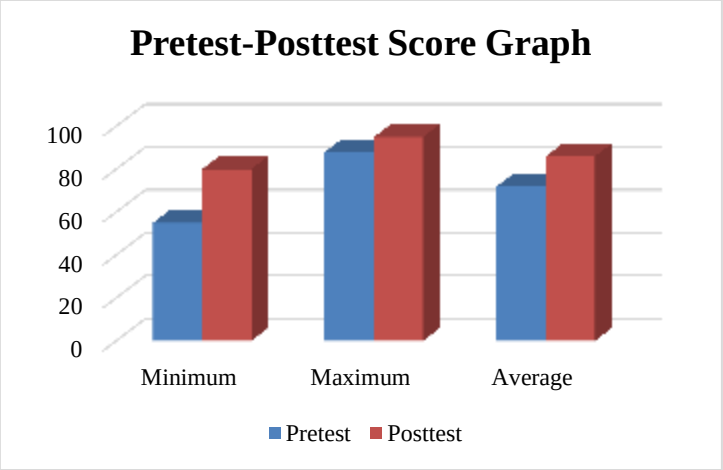

Figure 2. *Graph Pre and Posttest*

PjBL activities through methods field trip what developed was the development of science learning activities which were developed into PjBL-based learning activities through methods field trip which has different elements. The activities developed are based on PjBL through methods field trip which contains material to make it easier for students to know the real form of science material.

The product being developed is carried out following the development procedures used in developing this learning media, adapted from (Lee & Owens) 2004. The development model focuses on multimedia development, namely the ADDIE model with five stages, namely: analysis (needs analysis), design (product plan), development (Creating PjBL-based learning activities through methods field trip, Validation of design, material and language experts), implementation (product application, product feasibility), and evaluation (product effectiveness).

Information obtained from observations in class IV at Paya Dua State Elementary School is still active in science learning and student learning outcomes in science learning are also still low. Researchers are trying to develop a product in the form of learning activities to add teacher references to science learning. Researchers developed PjBL-based learning activities through methods field trips, the researcher presents an attractive design that suits the characteristics of students, with a concept that is short and easy for teachers and students to understand. Attractive design, able to stimulate students to be more interested in learning. The following is an explanation of the steps in developing PjBL-based learning activities through methods of field trips.

The first stage of this development is to carry out analysis, namely needs analysis, identifying what activities teachers and students need to improve the results of student learning and creating the learning process to make it more interesting. Based on the results of the analysis, data showed that the average student score was 71 and the percentage of completeness was 71%. Based on this data, it is stated that student learning outcomes are still low which is caused by the implementation of learning that is not varied and teachers have not used models and methods in learning. Therefore, researchers developed PjBL-based learning activities through methods of field trips which are felt to provide a new variation to the science

learning process as well as an action that is felt to improve the learning outcomes of class IV students at Paya Dua State Elementary School.

Next, the second stage is the design stage, namely product design. The researcher's product design first determines learning indicators, and materials and determines activity design. At the material design stage, researchers refer to Learning Achievements and Learning Objectives in science learning. PjBL-based learning activities through methods field trips designed according to teacher needs which functions as a use in adding teacher references or teacher handbooks.

Then after the PjBL-based learning activity product through the method field trip, has been developed according to the plan, the design, material, and language validation process is then carried out to determine the validity of the product that has been developed. In PjBL-based learning activities through methods field trip validation is carried out by expert validators. Based on the validator's assessment as a whole, it can be concluded that an average of 92% was achieved with details of 93% media expert, 94% material expert, and 90% language expert for PjBL-based learning activities through the method. field trip which can be implemented for class IV students at Paya Dua Elementary School with a very feasible category.

Figure 3. *Fieldtrip-Based PjBL Model Book Design*

Next, the fourth stage is implementing direct learning activities for students. From the results of calculating student and teacher responses above, it can be seen that based on data acquisition, data acquisition from teacher response results obtained a score of 82% and this can be categorized as PjBL-based learning activities using the method field trip a very good and practical learning activity to develop. The data obtained from the results of student responses obtained a score of 82% and this can be categorized as PjBL-based learning activities through methods field trip is an interesting learning activity for students. This shows that learning activities are based on PjBL through methods field trip which aims to add teacher references as a teacher's handbook. This can be categorized as PjBL-based learning activities through methods field trips is a very feasible learning activity for students.

Figure 4. *Fieldstrip Based PjBL Model Learning Activities*

In the final stage, namely the evaluation stage, researchers measure whether the learning activities are PjBL through methods of field trips that can improve students' learning outcomes through test questions. Based on the results of the evaluation of test questions for class IV students, they obtained a percentage result of 86% in the effective category. Proven by the N-Gain Score mean value of 0.8680, this value is greater than 0.7 (0.86>0.7), so the category obtained is high/high effectiveness. N-Grain Percent mean value is 86.8032, this value is greater than 76% (86%>76%), so it is interpreted as effective.

The teaching and learning process is a communication process that occurs from teacher to student or between students. In the process of conveying the message, a medium is needed so that the message can be received well. The use of books provides benefits in the learning process, including: 1) clarifying the presentation of messages and information so that the learning process runs smoothly and improves learning outcomes, 2) increasing student motivation, by directing students' attention to enable students to learn on their own according to their abilities and interests, 3) students will get the same experience regarding an event and allow direct interaction with the surrounding environment. Learning activities are one of the supporting materials that can be used by teachers, but a teacher must be careful and precise in choosing learning books so that learning activities will be able to motivate students, increase student activity, and arouse students' interest in learning so that students' attention is focused on the topic of the material being discussed. One of the learning books that can be used as a learning resource is felt to be able to help students and teachers in the learning process by using PjBL-based learning activities through the method of field trips.

CONCLUSION

In the process of developing PjBL-based learning activities through methods of field trips using the ADDIE model (Analysis, Design, Development and Implementation, Evaluation) the researcher carried out all stages. Based on the results of the analysis, data showed that the students' average score before the action was 71 and the percentage of completeness was 71%. The results of development research show that learning activities are based on PjBL through methods of field trips in science lessons for grade IV elementary school students the results were said to be very feasible. This is proven by the media expert validation results showing a very good category (93%) from the average validator. The material expert validation

results show a very good category (94%) from the average validator. Linguist validation results show a very good category (90%) from the average validator.

The results of the student response product trials showed the very good category (82%) and the results of the teacher response product trials showed the very good category (82%). In the evaluation of test results, students obtained results of 86% with very good criteria with details of 25 students completing. So from this research, the criteria have been met, namely the very good category in validation results, teacher and student response results, and test question results, so these results are proof that PjBL-based learning activities using the PjBL field trip method are very feasible and can be used as a learning activity. which can improve student learning outcomes. This research can contribute to future researchers with different methods but provide effective benefits in further research and for the world of education in particular.

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