



DEVELOPING THE ABILITY TO RECOGNIZE CAUSE AND EFFECT USING THE PROJECT BASED LEARNING MODEL AND SCIENCE EXPERIMENT METHOD IN GROUP B CHILDREN OF KHADIJAH PLUS ISLAMIC KINDERGARTEN BANJARMASIN

Nurul Laila Alpisah¹, Chresty Anggreani²

Lambung Mangkurat University

*Email: nrlalfsh23@gmail.ac.id¹, chresty.anggreani@ulm.ac.id²

Abstract

The problem in this study is the low ability of children to recognize cause and effect, this is due to learning activities using LKPD and the use of models and methods that are less varied and monotonous. This study aims to describe the activities carried out by teacher and analyze children's activities, analyze the results of the development of the ability to recognize cause and effect. The data collection are observation, interview and documentation. The subject used in the study was group B of Khadijah Plus Islamic Kindergarten Banjarmasin. This research was carried out in two cycles and each cycle consisted of three meetings. The results of the study show that using the project based learning model and science experiment methods can improve children's ability to recognize cause and effect, as evidenced by the teacher's activity in the first cycle obtained an average score of 72 with good criteria, children's activities obtained a percentage of 74% of the active criteria, then for the ability to recognize cause and effect obtained a percentage of 72% of the criteria developed as expected. Then in the second cycle, the teacher got an average score of 84 with very good criteria, children's activities obtained a percentage of 98% of the very active criteria, then for the ability to recognize cause and effect obtained a percentage of 100% of the very good development criteria (BSB).

Keywords: Experiment, Recognizing Cause and Effect, Project Based Learning

INTRODUCTION

The role of education in general is to create an attractive learning environment where students actively improve their religious spiritual potential, self-control, ethics, intelligence, noble morals and skills needed for their and the community's survival. Education includes the teaching of special skills, and also something that cannot be seen but is more profound, namely the imposition of knowledge, consideration and wisdom. (Pristiwanti, 2022).

Early childhood education is the first level of education given to children. Early childhood education is usually given to children from birth to the age of six, as a form of initial coaching given to children.

Early childhood education is carried out with the aim that the level of growth and development of children can be provided optimally and in accordance with the child's age stages. So, with the implementation of early childhood education, children become easier to adjust when entering the next level of education (Agustina & Radiansyah, 2023).

The goal of early childhood education (PAUD) is to stimulate the physical, spiritual, motoric, cognitive, social, and emotional development of children in a manner that is appropriate for their stage of growth and development. This is because early childhood education always provides opportunities for children to reach their potential in terms of personality and self-development so that



they can grow as best as possible (Nurleni & Anggreani, 2022).

Early childhood is children between the ages of zero and six years. Development occurs very quickly at that age. As a result, early childhood is considered so important that it is referred to as the golden age. Everyone experiences early age, but it only happens once in a person's life, so don't waste early age. To start a person's development, early age is the best time (Khaironi, 2018). Early age is a crucial time for children to increase their various potentials. The world of children is play, where playing for children is a fun activity. The implementation should use interesting and exciting media, such as when sounds and number symbols were first introduced. Therefore, the development of learning strategies through games is very important for the early development of children's cognitive abilities (Shafira & Sakerani, 2023)

The first stage of education is known as early childhood education, and it is characterized by stimulating instruction for children ranging from birth to six years of age. Educators in early childhood education institutions have a responsibility to maximize their children's potential so that they can face the creative challenges of the future. Teachers are not necessarily obliged to teach their students, but they also pay attention to the unique characteristics of their students (Saputra, 2018).

The process of promoting growth and development, both physical and non-physical, children from birth to the age of six is called Early Childhood Education. This process includes providing appropriate physical, mental (moral and spiritual), motor, intellectual, emotional and social stimulation to ensure proper growth and development of the child. Mind stimulation, healthcare, nutrition, and opportunities to actively learn are all

efforts made (Huliyah, 2017). The above is in line with the opinion that children who are given good stimulation can make children able to achieve aspects of growth and development well (Ramadina & Cinantya, 2022).

According to Khaironi (2018) cognitive development is a development related to an individual's ability to think in managing information. In the process of processing information, the experience that you already have will collaborate with the new experience obtained, so that new information is helped. Cognitive development is basically aimed at allowing children to explore their environment through their five senses, then with children gaining that knowledge, they will be able to live their lives according to their nature as a creation of God who should utilize everything in the world for his personal needs and other individuals.

Extensive knowledge, language skills, creative or innovative abilities, and the ability to remember are all examples of cognitive development. Cognitive is a combination of a child's maturity and environmental influences. However, because each child has unique characteristics, their cognitive development is also different (Novitasari, 2018).

According to the National Early Childhood Education Standards on the level of achievement of cognitive development in early childhood who are in the age range of 5-6 years, they are expected to be able to recognize the cause and effect of their environment (the wind blows causing the leaves to move, water can cause something to get wet). (Kemendikbud, 2014)

Based on the results of observations in group B of Khadijah Plus Islamic Kindergarten Banjarmasin, it was found that the problem of children's low ability to recognize cause and effect was



found. This is because the learning system is monotonous, namely learning that is carried out repeatedly so that children feel bored quickly and are not motivated to participate in classroom learning, learning using LKPD, and learning using less varied models and methods makes children less active in learning.

The results of the observation showed that of the 14 children consisting of 5 boys and 9 girls, data was obtained, namely only 9 children with a percentage of 64% were at the stage of not yet developing, and there were 5 children with a percentage of 36% of children who had started to develop well.

If this is not addressed immediately, the impact of these problems will affect the child's cognitive development, especially on the ability to recognize cause and effect, and the child's development will not be optimal so that it will hinder aspects of child development. Therefore, a problem-solving plan is needed through the Project Based Learning model and the Science Experiment Method.

Through the application of the Project Based Learning model and the learning experiment method, the use of activities that are able to train children's knowledge in fun-based learning is sought to overcome these problems. From this learning model, children practice directly how to experiment patiently without children having to be angry or cry as shown by the educator through little by little which is done regularly or non-stop, and also according to the problems encountered in the field.

The project-based learning model integrates technology into daily life through the execution of project tasks and product manufacturing. The project-based learning model at the end of the learning activity will produce a work through various projects that have been carried out.

These works can be in the form of scientific works, models, films, videos and so on (Agusta & Suriansyah, 2020).

According to Rahma & Anggreani (2024) project Based Learning is a student-centered learning model, which departs from a problem background, which is then followed by investigation so that students gain new experiences from real activities in the learning process and can produce a project to achieve aspect, cognitive, and psychomotor competencies. The final result of the project work is a product which is in the form of written or oral reports, presentations or recommendations.

The experiment method is a method that provides flexibility to students individually or in groups to be guided to carry out an experiment. Therefore, students are able to fully appreciate the learning provided and students also get direct and practical practice in daily life which is very beneficial for them. This method is very suitable for children to do an experimental activity, where the teacher gives all children the opportunity to practice the experimental activity themselves. That way it can add to the child's experience directly (Salsabila & Novitawati, 2021)

According to Fuad & Novitawati, (2023) Through the application of the model Project Based Learning and learning experiment methods, the use of activities that are able to train children's knowledge in fun-based learning to overcome these problems. From this learning model, children practice directly how to experiment patiently without the child having to get angry or cry as shown by the educator through little by little which is done regularly or non-stop.

The principle of this method is to provide activities and learning experiences in a real and planned manner to children. The objectives of experimental activities for early childhood are: building children



to use their five senses, providing opportunities for children to explore and show their creativity, training children to think scientifically, logically and critically (Agreni, 2015)

The purpose of this study is to describe teacher activities, describe children's activities, and analyze the results of the development of the ability to recognize cause and effect using the project-based learning model and science experiment method in group B children.

METHOD

This research method uses a qualitative approach with the type of CAR research. Classroom Action Research aims to improve learning in the classroom through practical and straightforward methods. This helps teachers and researchers improve and improve learning through various activities carried out in the classroom. CAR is an assessment of learning problems in the classroom and one way to solve these problems must be through a series of actions that are analyzed at the stage of self-reflection. According to (Abdillah, 2021) consists of four stages of PTK, namely: planning (Plan), action (Act), observation (observe), and reflection (reflect).

This research was conducted at Khadijah Plus Islamic Kindergarten Banjarmasin. This research was carried out in the 2023/2024 Semester II school year with the research subject in group B children totaling 14 children consisting of 9 girls and 5 boys.

The indicator of the success of this research is that the actions taken by teachers can be categorized as successful, if they get the "Very Good" criterion. A child's activity is categorized as successful if the child gets a score of ≥ 24 individually and in general with a "Very Active" criterion of more than 82%. Meanwhile, the results of children's cognitive

development through simple science activities are categorized as successful if the child's individual ability reaches a score of ≥ 16 and classically reaches a percentage of 82% with Very Good Developed Interpretation (BSB).

RESULTS AND DISCUSSION

Based on the results of the research, classroom actions were carried out using a project-based learning model and a science experiment method in group B of Khadijah Plus Islamic Kindergarten Banjarmasin which was carried out in 2 cycles and each cycle consisted of 3 meetings. In the first cycle of teacher activities, children's activities, and developmental outcomes increased at each meeting. In cycle II, teacher activities, children's activities, and developmental results also increased at each meeting. The following is a description of teacher activities in cycle I and cycle II as follows:

Table 1. Result of Teacher Activity

| Cycle | Percentage | Category |
|-------|------------|-----------|
| I | 83% | Good |
| II | 100% | Excellent |

From the table above, it can be seen that teacher activity has increased in each meeting. In the first cycle got 83%, the second cycle got 100%. This proves that teacher activities have increased and teachers are able to implement according to the steps of the project-based learning model and science experiment methods and are able to achieve success indicators with the "Very Good" category. Based on the results of the research, it shows that teacher activity continues to increase in each cycle. This increase occurred because of the evaluation in each learning activity and reflection after the first cycle was completed. So as to achieve the expected success indicators.

Teachers and students to develop competencies in accordance with the



achievements and abilities of students (Fawwaz, Alwan, 2024; Yuridka, Fitrah, 2024).

A Kindergarten teacher must carefully reflect and design daily learning activities to nurture every part of the youth. As well as further developing each educational experience is important for teachers so that learning activities consistently increase and occur ideally with the ultimate goal of encouraging children's knowledge processes (Ulpah & Sunarno, 2023)

A teacher is someone who has an important role when in the school environment, so that in a system the quality of teachers will also affect the quality of their students (Rehny & Sari, 2023). In line with Preparing yourself to be the best role (Akhmad Riandy Augusta, Darmiyati, Ali Rachman, 2024; Cinantya et al., 2024; Cinantya Celia, Aslamiah, 2024; Fawwaz, Alwan, 2024; Halimatussa'diyah et al., 2024; Hayati et al., 2024; Purwanti, Aslamiah, et al., 2024; Purwanti, Suriansyah, et al., 2024)

According to research from Ariana & Novitawati, teachers are also the expectation that many schools to provide progress and quality performance in a teacher will have a positive influence on the ability of students and schools. One of the things that teachers need to pay attention to is how they prepare for teaching as much as possible by preparing a daily learning implementation plan (RPPH) (Ariana & Novitawati, 2023).

Lesson plan is the most important part in implementing the teaching and learning process in schools because the planning can make a learning activity successful or can be packaged into a design for teachers to carry out play activities that facilitate children in the learning process (Mega & Wahyudi, 2021)

Based on the results of the observation of children's activities carried

out as many as 2 cycles, each cycle consists of 3 meetings described through a comparison of research results, which are as follows:

Table 2. Results of Children's Activity Trends

| Cycle | Percentage | Category |
|-------|------------|---------------|
| I | 74% | Active |
| II | 98% | Highly Active |

Based on the table above, it can be seen that children's activities in cycle I have increased in cycle II. This is because all children are able to achieve all the desired criteria with a very active category. Early childhood activities are usually carried out in the context of playing while learning, or learning while playing.

The more optimal the efforts made by teachers during the learning process, it will have an impact on children's activities who are increasingly active in participating in learning so that they are able to achieve the expected success indicators. With the increase in children's activities, it is inseparable from the role of a teacher (Salsabila & Novitawati, 2021). This is in line with research conducted by oleh (Ramadina & Cinantya, 2022) stated that children's learning outcomes are related to the interaction process between teachers and students, so that the better the quality of teachers, the more active children will be.

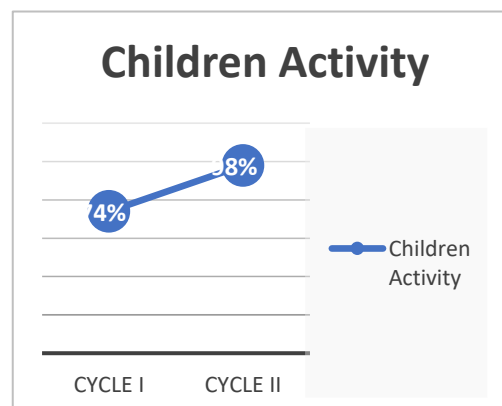


Figure 1. Child Activity Trend Graph



Table 3. Trend of the Development result: ability to know cause and effect

| Cycle | Percentage | Category |
|-------|------------|----------|
| I | 73% | BSH |
| II | 100% | BSB |

Based on the table above, it shows that in cycle I there was an increase in cycle II. In the first cycle, a percentage of 73% was obtained with the category "Developing as expected". Then it increased in cycle II to get a percentage of 100% by getting the category of "Developing Very Good". The increase in developmental outcomes is influenced by the increase in teacher activities and children's activities, so that in the development results all children are able to achieve all the desired criteria.

Learning can be said to be successful if all or at least most of the children are actively involved physically, mentally, and socially during the learning process. Children must be positioned as learning subjects who need to gain knowledge and experience (Norhikmah & Rini, 2022).

According to research believes that children's activities are designed as best as possible with the hope that children are able to form cooperative behavior and also become a learning center, so that cooperative learning for kindergarten children can help them be more free in creativity and imagination (Anisa & Faqihatuddiniyah, 2022).

The following graph of trends in the results of the development of the ability to recognize the causes of children's causes is described in the figure below:

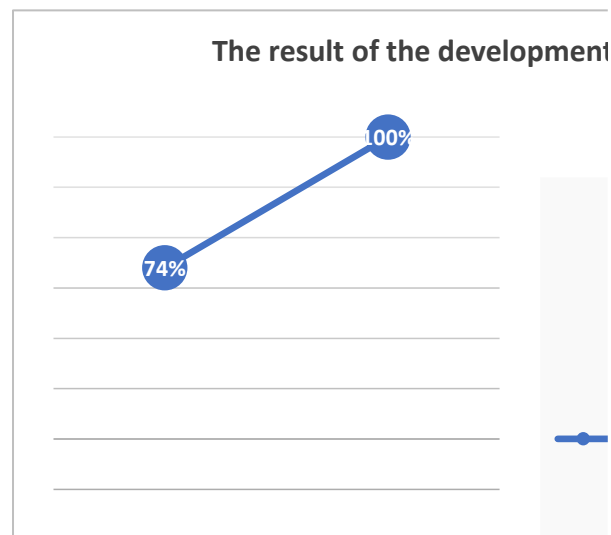


Figure 2. Trend of the result development

The results of the trend between teacher activities, children's activities and the results of the development of children's ability to recognize cause and effect can be seen in the following figure:

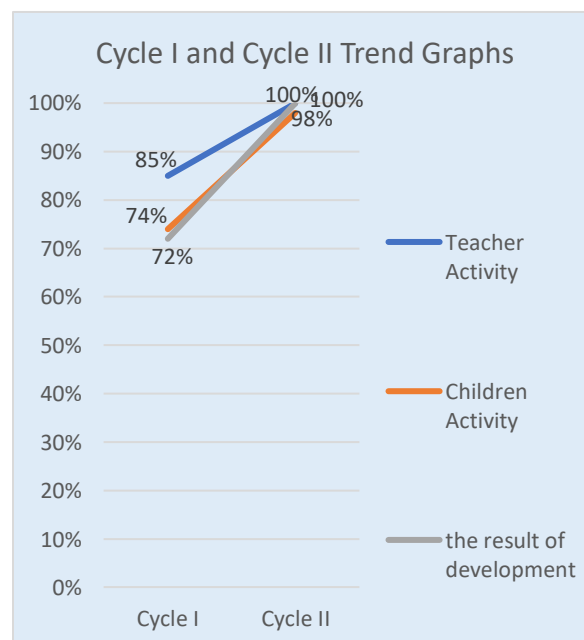


Figure 3. Cycle I and Cycle II Trend Graphs

Based on the graph of teacher activity trends, children's activities, and developmental results, it shows that in conducting research for 2 cycles, each cycle consists of 3 meetings, there is an increase in each cycle, until it reaches the success indicator and is in the expected



category. In the first and second cycles of teacher activities, this tends to increase, this is because the learning carried out by teachers is able to follow the steps using the project-based learning model and science experiment methods. This also happens in the activity of children in the first and second cycles has increased, where all children are able to meet all the expected criteria, and make children more active. Likewise, the results of the development of children's ability to recognize cause and effect have increased in cycle II by getting the Very Good Developing category.

The results of the research that have been carried out can be concluded that by using the project-based learning model and science experiment methods, it can improve the development of the ability to recognize the cause and effect of children in group B of Khadijah Plus Islamic Kindergarten Banjarmasin has been successfully implemented and has received the expected interpretation.

CONCLUSION

Based on the results it can be concluded that the teacher's activity in carrying out learning to develop the ability to recognize cause and effect using the project-based learning model and the science experiment method in group B children of Khadijah Plus Islamic Kindergarten Banjarmasin has increased in each cycle and has succeeded in achieving success indicators and has been implemented according to the Steps with the "Very Good" criteria.

Children's activities in the implementation of learning in the development of the ability to recognize cause and effect using the project-based learning model and the science experiment method in group B children of Khadijah Plus Bnjarmasin Islamic Kindergarten have increased in each cycle and have

succeeded in achieving success indicators and are carried out according to the Steps with the criteria of "Very Active".

The results of the development of children's ability to recognize cause and effect after carrying out learning using the project-based learning model and science experiment methods in group B children of Khadijah Plus Islamic Kindergarten Banjarmasin have improved in each cycle and have succeeded in achieving success indicators, namely individually and classically with the interpretation of "Developing Very Good".

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