PUBLISHED BY
JR EDUCATION

Available online at http://ijite.jredu.id

International Journal of Information Technology and Education (IJITE) 3 (2), (March 2024) 8-14

International Journal of Information Technology and Education (IJITE)

http://ijite.jredu.id

Application of Project-Based Learning to Improve the 4C Abilities (Critical Thinking, Creativity, Collaboration, and Communication) of Children Aged 5-6 Years

Meiske Esther Tumbel[1]*

[1]Department of Early Childhood Education, Manado State University, Indonesia

*Corresponding author: e-mail: meisketumbel@unima.ac.id

ARTICLE INFO
Article history:
Received: December 17, 2023; Received in revised form: February 17, 2024; Accepted: March 03, 2024;
Available online: March 08, 2024;

ABSTRACT

This research aims to improve the 4C (Critical Thinking, Creativity, Collaboration, and Communication) abilities of children aged 5-6 years by using the Project Based Learning (PjBL) learning model. This research uses a type of classroom action research using the Kemmis and Mc Taggart model through 4 stages, namely: 1) planning, 2) Action, 3) Observation, and 4) Reflection. The subjects in this research were children aged 5-6 years at GMIM Sion Tomohon Kindergarten with a total of 23 children. The data collection technique uses observation and non-test techniques which are used to measure the creativity of children aged 5-6 years, namely batik work using natural papaya leaves using the ecoprint technique. Data collection instruments use observation assessments (attitude assessments), work skills assessments work results assessment instruments, as well as questionnaires for assessing children's developmental achievements. The data analysis used in this research is quantitative and qualitative, namely simple descriptive statistics, the data reduction process, data presentation, and conclusion are carried out in the qualitative analysis process. The research results show that there is an increase in the 4C (Critical Thinking, Creativity, Collaboration, and Communication) abilities of children aged 5-6 years through the Project Based Learning (PjBL) learning model. This is proven by the activities of teachers and children who support the 4C indicators.

Keywords: Project Based Learning (PjBL), 4C, Early childhood Teacher

INTRODUCTION

The world of early childhood is a world full of curiosity about everything around them, and generally, children will be very enthusiastic about exploring knowledge about things related to the natural world around them, therefore it needs to be integrated into the world of education to answer every knowledge that young children want to explore (Maarang et al., 2023) Law Number 20 of 2003 concerning the national education system emphasizes that national education functions to develop abilities and shape the character and civilization of a dignified nation to educate the nation's life, aiming to develop the potential of students to become human beings who believe and are devoted to God Almighty, have a noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens. (Wayan et al., 2023) Education in early childhood is a basic phase that determines a child's growth and development. Therefore, in the learning process for children aged 5-6 years, a teacher focuses more on the needs of children's play instincts and of course, it can also be a very necessary learning resource to develop aspects of children's development and the educational process in early childhood can be the basis for the subsequent educational process (Uhriyah et al., 2023). By experimenting, imitating, and observing directly and repeatedly and involving all children's abilities, children will be able to gain intelligence.

Project Based Learning is a teaching approach developed based on constructivist principles, problem-solving, research inquiry, integrated studies, and emphasizing aspects of theoretical and application studies. The learning model begins with the stage of collecting information in the form of children's ideas and questions according to the chosen topic and then develops into learning and exploration activities. Learning uses the Project Based Learning method for children to develop a project either individually or as a group to produce a product. The topic in the project approach must be concrete, close to the child's personal experience, interesting, and have emotional and intellectual potential (Sari et al., 2013). A child's development in the future is largely determined by various meaningful stimulations provided from an early age. PAUD must be prepared in a planned and holistic manner so that in the golden period of development, children receive complete stimulation so that they can develop the various potentials that children have (Amelia et al., 2021). Each individual has a variety of different abilities. Reflecting on the diversity of different abilities, it is necessary to use various ways to develop these abilities. One of individual abilities is creativity. Creativity is an important ability to develop, even in various elements of education (Fakhriyani, 2016).

21st-century learning uses a term known as 4C (critical thinking communication, collaboration, and creativity). The 4Cs are four skills that have been identified as 21st-century skills, namely skills that are very important and necessary for 21st-century education (Lathifah, 2023). There are many problems faced by teachers in stimulating children's development. One of them is the 4C skills. Teachers mostly give assignments contained in LKPD, even though in the surrounding environment many materials can be used as learning media (Sukardjo et al., 2023). In line with research conducted by (Prameswari & Anik Lestariningrum, 2020) learning problems in producing students who have 4c competencies (creativity, communication, collaboration, critical thinking) are still very limited, especially in PAUD. This problem can be seen in children's developmental achievements when the

learning process takes place, creativity is limited, communication skills are low, and expressing opinions from the results of groups or collaboration is still low. This is because the learning process is still centered on the teacher/the teacher's role is more dominant which limits children's creativity by providing less varied learning media because they only use activity sheets available at school. At an early age, the 4C skills should have been developed, such as children being able to think fluently, children being able to think flexibly, children being able to think originally, and children being able to think in detail or elaboration. So, based on the existing problems, researchers conducted research with the title of implementing the project-based learning model to improve the 4C abilities of children aged 5-6 years.

Research conducted by (Nurjanah et al., 2023) entitled the application of STEM to develop communication skills in early childhood. This research discusses the success of STEAM learning in improving children's communication skills with STEAM learning in PAUD the learning model used is a quantitative method, so this research only looks at the effect of STEAM learning on 4C abilities. The difference with this research is that it uses a project-based learning model where children are encouraged to solve problems and improve 4C abilities, which are abilities that children are required to master from an early age. So in this research, the project-based learning model can improve the 4C (Critical Thinking, Creativity, Collaboration, and Communication) abilities of children aged 5-6 years.

METHODS

This research aims to improve the 4C abilities of children aged 5-6 years through the application of the project-based learning model. This research uses a type of Classroom Action Research involving teachers and observers. Classroom action research uses the Kemmis and McTaggart model through 4 stages, namely: 1) Planning, 2) Action, 3) Observation, and 4) Reflection.

The subjects in this research were children aged 5-6 years at GMIM Sion Tomohon Kindergarten with a total of 23 children divided into 14 boys and 9 girls with a research sample of 12 children. The data collection technique uses observation and non-test techniques which are used to measure the creativity of children aged 5-6 years, namely batik work using natural materials, namely papaya leaves using the ecoprint technique. Data collection instruments use observation assessments (attitude assessments), work skills assessments using work results assessment instruments, as well as questionnaires for assessing children's developmental achievements. The data that has been collected is processed using a quantitative and qualitative data analysis process, namely simple descriptive statistics through centralization measures (mean, mode, median) used in quantitative data analysis. The process of data reduction, data presentation, and conclusion is carried out in the qualitative analysis process.

Classroom action research is said to be successful if the indicators measured have increased and met the achievement target percentage.

RESULTS AND DISCUSSION

1. Description of Research Implementation

The process of carrying out research and data collection was held at the GMIM Sion Tomohon Kindergarten on October 18, 2023. The learning process was implemented using the Project Based Learning (PjBL) learning model for children aged 5-6 years with the theme of plants, and sub-sub themes of papaya leaves with making activities ecoprint.

2. Description of Research Results

The research was conducted from October to December with a total of 12 children. This research was carried out in 2 cycles. The implementation description is as follows.

The research was carried out at GMIM Sion Tomohon Kindergarten for children aged 5-6 years, in the 2023/2024 academic year with the theme Plants, sub-theme Plant Parts, and sub-sub-theme Leaves. The research was carried out using the Project Based Learning (PjBL) learning model which consists of 4 stages, namely planning, implementation, observation, and reflection.

1. Planning Stage

At the planning stage, researchers prepared several things, namely daily learning implementation plans (RPPH) referring to the 2013 PAUD curriculum. Apart from the RPPH, researchers also prepared learning tools and materials that will be needed in learning such as LKPD, laptops, learning media in the form of videos, papaya leaves, crayons, letter cards, hammers, cloth, and plastic. Once all the tools and materials are available, the next step is preparation for learning.

2. Implementation stage

The learning will be carried out on November 10, 2023. This activity includes initial activities, opening activities, core activities, breaks, and closing activities. In the initial activity, children take off their shoes and put them on the shoe rack, children line up in front of the class, and children shake hands with the teacher. while at the opening, children enter the classroom in an orderly manner, praying to start learning. The teacher takes attendance and then continues by showing a learning video about Papaya plant-themed activities.

In the core activity which lasts 40 minutes, the teacher first invites the children to watch a learning video about plant-themed activities. After the children have finished observing the learning video the teacher then explains the parts of the papaya tree by combining the question-and-answer method so that the children are properly stimulated. After the child sees the video, it is hoped that the child will be able to name the parts of the papaya tree. then the teacher gives the children the opportunity to ask about the parts of the papaya tree. After that, the teacher invites the children to do tree movements in the wind, but before that, the teacher conveys the rules of the game or class agreement. Next, the teacher divides three groups of learning activities. The children carry out activities according to their interests, including 3 activities that include "combining" colors in pictures of leaves where children observe pictures of leaves that have been prepared by the teacher, and the teacher prepares the tools and materials that will be used to combine them. the color is a crayon. then the teacher explains how to combine, and invites children to combine colors, then children can discuss

with each other in groups regarding combining colors with crayons, and after that children are invited to show the results of their work. in the activity of "arranging" the letters d-a-u-n into the word leaf correctly. So the activity is that the teacher prepares all the tools and materials that will be used to compose the word leaf, the children observe the tools and materials used in the activity of arranging the letters, the teacher explains how to arrange the letters into the word leaf, and the children are invited to do the activity of arranging the letters into words. leaves, and after finishing the child is invited to name the letters that have been arranged. Next, in the activity of "creating" ecoprint works from natural papaya leaves, the activity is that the teacher prepares leaves, cloth, hammers, plastic, the teacher explains how to make an ecoprint using the pounding technique, then the children are invited to make an ecoprint in the shape of a leaf using the pounding technique, after that Children are welcome to show their work.

Break activities are activities that include praying before and after eating/drinking, namely the children line up to wash their hands, eat their lunch together, and then play freely.

The final activity is the closing activity, with an explanation of the activity, namely the first is recalling, namely sitting in a circle, asking how they felt during today's activities, then the teacher guides the children to put away toys and other equipment, with the hope that in this activity the children will be able to name the materials used for ecoprinting, the teacher gives feedback on what topics were discussed today, informing about activities for tomorrow, giving moral messages to children, praying together after studying, greetings and then going home.

3. Observation stage

At the observation stage, several points became the focus of observations in the research, namely increasing children's motivation in carrying out science activities with eco-print activities using papaya leaves. In this activity, children can show an attitude of gratitude to God for the creation of plants by taking good care of them, children can show an attitude of responsibility, skillfully use their body parts to imitate the movement of trees in the wind, children can create eco-print works using papaya leaves correctly, children have able to arrange the letters d-a-u-n correctly and able to combine the colors in the picture correctly.

In the conditions that are the background to the problem, teachers do not use appropriate learning models, so children are less focused during the learning process because the learning media is less interesting, teachers have not used interesting tools and materials, facilities, and infrastructure using technology are still inadequate, and Teachers' knowledge about science activities is still limited.

4. Reflection Stage

A general explanation of the research results for aspects that can be improved, namely how institutions or schools provide ideas and ideas about strategies used to improve children's cognitive abilities. Motivates teachers to be more creative and innovative in teaching and learning activities, and even becomes a reference for parents in their children's learning activities at home. However, the main point is how the children are enthusiastic, happy, and like the activities carried out by the teacher in class, making the children even more enthusiastic in participating in learning, even though it looks easy, the children can think at a High Level (HOTS).

The motivation of children in teaching and learning activities is clear evidence of the effectiveness of learning which produces good work and results from the children themselves, as well as how parents respond related to the strategies implemented. In this way, this learning model can effectively increase the creativity of children aged 5-6 years in learning, especially in the action of making ecoprint works.

CONCLUSION

Based on the results of research that has been conducted regarding the application of the Project-Based Learning (PjBL) learning model to improve the 4C (Critical Thinking, Creativity, Collaboration, and Communication) abilities of children aged 5-6 years, it can be concluded as follows: The teacher's activities during the learning process using the Project Based Learning (PjBL) learning model are classified in the good category as evidenced by the effectiveness of learning and the motivated attitude of children in learning. Children's activities during the learning process using the Project-Based Learning (PjBL) learning model are in the very good category, this is proven by the children's work in the form of ecoprints and evidence of arranging d-a-u-n words which look normal to children but in the HOTS learning process. There is an increase in the 4C (Critical Thinking, Creativity, Collaboration, and Communication) abilities of children aged 5-6 years, this is proven by children and teachers who can make learning motivated, active, happy, and able to be creative with projects in learning.

REFERENCES

Amelia, N., Aisya, N., Tinggi, S., Tarbiyah, I., Tinggi, A. T., Tinggi, S., Tarbiyah, I., & Tinggi, A. T. (2021). Model Pembelajaran Berbasis Proyek (Project Based Learning) Dan Penerapannya Pada Anak Usia Dini Di Tkit Al-Farabi merupakan faktor yang sangat penting. Aktivitas dan kreativitas guru dalam tersebut tampak. 1(2), 181–199.

Fakhriyani, D. V. (2016). Pengembangan Kreativitas Anak Usia Dini. Wacana Didaktika, 4(2). Https://doi.org/10.31102/wacanadidaktika.4.2.193-200

Lathifah, A. (2023). Pengembangan Panduan Model Problem Based Learning Dalam Menstimulasi Keterampilan 4Cs (Critical Thinking, Communication, Collaboration, and Creativity) Anak Usia Dini. 9(2), 17–33.

Maarang, M., Khotimah, N., & Maria Lily, N. (2023). Analisis Peningkatan Kreativitas Anak Usia Dini melalui Pembelajaran STEAM Berbasis Loose Parts. Murhum : Jurnal Pendidikan Anak Usia Dini, 4(1), 309–320. Https://doi.org/10.37985/murhum.v4i1.215

Nurjanah, C., Putri, S. U., & Adjie, N. (2023). Penerapan STEAM Untuk Mengembangkan Kemampuan Kolaborasi Anak Usia Dini. Prosiding Seminar Nasional PGPAUD UPI Kampus Purwakarta, 2(1), 56–61.

Prameswari, T., & Anik Lestariningrum. (2020). Strategi Pembelajaran Berbasis STEAM Dengan Bermain Loose Parts Untuk Pencapaian Keterampilan 4c Pada Anak Usia 4-5 Tahun. Efektor, 7(1), 24–34. Https://doi.org/10.29407/e.v7i2.14387

Sari, A. Y., Astuti, R. D., & Pendahuluan, A. (2013). Implementasi Pembelajaran Project Based Learning Untuk Anak Usia Dini.

Sukardjo, M., Nirmala, B., Ruiyat, S. A., Annuar, H., & Khasanah5, U. (2023). Loose Parts: Stimulation of 21st Century Learning Skills (4C Elements). Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini, 7(1), 1073–1086. Https://doi.org/10.31004/obsesi.v7i1.4088

Uhriyah, S., Prasetiya, B., Tinggi, S., Islam, A., & Probolinggo, M. (2023). Kerjasama Guru Dan Orang Tua Dalam Pembelajaran Daring Untuk Membangun. 4, 47–58.

Wayan, N., Rahayu, S., Dyantari, P., Mudana, I. G. R., & Putra, G. N. (2023). Membangun Kreativitas Anak Usia Dini Dengan. 4(3), 5547–5552.