

## Project Based Learning, Discovery Learning and Sports Models on Critical Thinking Ability Children Age 5-6 Years: Study Literature



Widya Sri Murti<sup>1</sup>, Nelva Rolina<sup>2</sup>, FransFile Manihuruk<sup>3</sup>, Maria Della Strada Dea Meylinda<sup>4</sup>

<sup>1,2</sup>Early Childhood Education Study Program, Faculty of Education and Psychology, Yogyakarta State University, Road Colombo No. 1, Karangmalang, Yogyakarta 55281, Indonesia.

<sup>3</sup>Sport Science Study Program, Yogyakarta State University. Road Colombo No. 1, Karangmalang, Yogyakarta 55281, Indonesia.

<sup>4</sup>Physical Education Study Program, Yogyakarta State University. Road Colombo No. 1, Karangmalang, Yogyakarta 55281, Indonesia

**ABSTRACT:** The project-based learning (PBL) model is a learning approach that emphasizes working on certain projects or tasks as a way to understand and apply knowledge. Discovery Learning is a learning approach that emphasizes student exploration and experimentation to build their own understanding. Sports in children aged 5-6 years not only provide physical benefits, but also contribute to the development of various cognitive skills, including critical thinking abilities. This type of research uses literature study. The database in this study with article criteria comes from Sinta. In this study, 3 articles were used as references for researchers to carry out reviews. Characteristics of the 3 articles, 1). Publications from the last 9 years, 2). The articles reviewed are related to the focus of this research. Then the procedure for searching for articles needed in this research is based on Google web: 1). Google scholar and 2). Google Chrome. The analysis of this research focuses on project based learning, discovery learning and sports models on the critical thinking abilities of children aged 5-6 years, project based learning, discovery learning. It was concluded that the project based learning, discovery learning and sports models affected the critical thinking abilities of children aged 5-6 years.

**KEYWORDS:** Project Based Learning Model, Discovery Learning, Sports, Critical Thinking, Children Aged 5-6 Years

### I. INTRODUCTION

The Indonesian government has regulated Early Childhood Education through Law no. 20 of 2003 concerning the National Education System. Article 1 paragraph 14 in the law defines Early Childhood Education as a coaching effort aimed at children from birth to 6 years of age (Nopriyanti, 2012) . This effort is carried out by providing educational stimuli to help children's physical and mental growth and development, so that children are mentally ready to enter kindergarten as part of preschool education. Kindergarten is one of the initial stages of education which is part of an educational pathway that provides opportunities from early childhood to basic education (Rupnidah & Eliza, 2022)

Early childhood education also has a role in helping children build early childhood knowledge (Maslich, 2016) . Through early childhood education, you can learn through direct experience, exploration and interaction with the early childhood environment (Salsabilafitri & Izzati, 2022) . Early childhood education provides comprehensive development for children, including physical, social, emotional intelligence, self-confidence, curiosity, goals, self-control, communication and cooperation, cognitive development and ethics. Early childhood education not only forms the basis for effective basic education, but also provides a solid foundation for life in the future (Musyarofah, 2017) .

In today's digital era, it is very important for children to have critical thinking skills. 21st century competencies have become the main emphasis in increasing the capacity of human resources in Indonesia as it enters the 21st century. Four elements of competency that must be instilled in 21st century children, including *critical thinking*, *creative thinking*, *communication skills* and *collaboration*, are able to help children compete in this era (Mustafa & Dwiyogo, 2020) . *Critical thinking* is thinking that is always curious and seeks details about a problem with the right assumptions and understanding (Rahardhian, 2022) .

Thinking abilities must be honed as early as possible so that children's problem-solving abilities can be honed through a series of simple experimental activities at school (Agnafia, 2019) . Apart from that, critical thinking also involves "thinking about our

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thoughts" by reflecting, analyzing, reasoning, planning, and evaluating (Anggraini et al., 2020) . Critical thinking consists of various high-level abilities that require demonstration of the capacity to identify problems with reasoning, assumptions, conclusions, and the ability to draw conclusions (Kusumah, 2019) .

Good critical thinking patterns will also encourage children to become problem solvers. Critical thinking is a mental process that people use to solve problems, make decisions, and learn new concepts (Nuryanti et al., 2018) . The goal of critical thinking is to evaluate information in a way that helps us make informed decisions. Critical thinking involves better understanding a problem through gathering, evaluating, and selecting information, and also by considering various possible solutions (Lally & Valentine-French, 2018).

The Minister of Education and Culture has emphasized the importance of the PISA assessment results in improving the quality of education in Indonesia, which will be the government's focus in the next five years. The government recognizes competency as the key to improving education to face the challenges of the 21st century (Sudarsana, 2016) . However, the results of the PISA study show that students' critical thinking abilities in Indonesia are still low (Lestari & Annizar, 2020) . Although it is hoped that improving the quality of education will increase PISA scores (Pratiwi, 2019) , the 2018 PISA data above indicates that Indonesia has low performance but high equity.

By exercising, humans will become healthy and strong, both physically and spiritually, and can have a positive impact on individuals such as increased responsibility, honesty in playing, cooperation, attention to others, leadership, respect for coaches, referees and coaches, loyalty, tolerance, discipline which ultimately can be expected to result in brilliant achievements to become champions. Sport has become a necessity in everyday human life, because with sport humans get pleasure and inner satisfaction, apart from that, regular and appropriate exercise can make people healthy and strong, both physically and spiritually and the motto is "mens sana en corpore sano" which means in a healthy body there is a strong soul is proof that since ancient times humans have realized how important a healthy body and soul are. (Irwanto & Romas, 2019).

Exercise in mind refers to a focused mental approach when participating in physical activity. This thinking pattern can influence the performance of children aged 5-6 years or individuals involved in sports activities (Masykuri, 2020). Responding to challenges or obstacles in a rational and productive way and creating intrinsic motivation (inner motivation) to achieve goals. Exercise in thinking patterns can help young children to optimize their performance in a more conscious and focused way (Irianto, 2019) .

## II. RESEARCH MATERIALS AND METHODS

This research uses a *literature review method*. Literature review is a process of finding out and studying research results that have been published by researchers relating to previous scientific work regarding the reasons why researchers decided to choose certain themes or titles that collect from several previous studies (Primawanti & Ali, 2022) . The data collection technique in this research uses web-based internet by focusing on articles that are relevant to this research. The data used is a type of secondary data, meaning that researchers do not go directly into the field.

Please note that the procedure for searching for articles relevant to this research uses the Synta database with the help of the *Google Chrome engine* and *Google Scholar* . The article search system uses keywords originating from the title of this research. As many as 15 articles were found during the article search process, but of the 15 articles found, only 3 articles were used as references by researchers for conducting reviews. This is because 12 articles were not included in this study. The researcher also emphasized that all data used for this research was sourced from the national or SINTA *data base* with provisions for the last 6 years so that its existence is still relevant today.

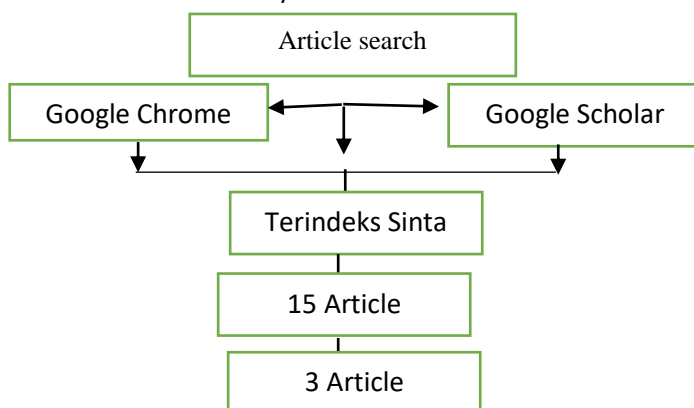


Figure 1. Research Framework

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### III. DISCUSSION

Table 1 below is three (3) articles that are the main reference or source for the author in completing this research, because the database in the research comes from the articles listed in the table below which are used as references for reviewing . Third (3) the article has several components or criteria that need to be included in the table below, namely 1). Author's name, 2). Article title, 3). Journal name, 4). The research results include, a. the variable being measured, b. number of samples and c. The following statistical tests are used in detail in 3 articles relevant to this research as follows:

**Table 1. List of articles used as references**

No	Author's Name and Year of Publication	Title	Journal Name	Research result
1	(Noviyana, 2017)	The Influence of the Project Based Learning Model on Students' Mathematical Creative Thinking Ability	Edumath Journal	The research results show: <i>Project Based Learning</i> for early childhood develops a project either individually or in groups 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. Implementation of Project Based Learning in early childhood, divided into 3, namely: total project learning, partial project learning and occasional project learning
2	(Safitri & Mediatati, 2021)	Application of the Discovery Learning Model in Science Learning to Improve Critical Thinking Abilities and Learning Outcomes of Elementary School Students	Basicedu Journal	The results of the first cycle of research showed that students' critical thinking abilities were in the high category 3%, in the medium category 37%, in the low category 42%, and in the very low category 8%. In cycle II, the increase was shown in the critical thinking skills of students in the very high category, 54%, in the high category, 30%, in the medium category, 8%, in the low category, 8%, and in the very low category, none. There were 3 students who had completed the KKM or 13c/o, while there were 21 students who had not completed the KKM or 87%. In cycle II, there were 20 students who had completed the KKM or 83%, while there were 4 students who had not completed the KKM or 17%. The research results show that

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				the Discovery learning model is proven to improve critical thinking skills and student learning outcomes.
3	(Masykuri, 2020)	Blended Learning Innovation in Physical Education and Sports Learning in the New Normal Era	National Proceedings of Physical Education, Health and Recreation	The results of this research can show that there are blended learning-based physical education and health learning innovations in teaching and learning activities that can still run according to objectives, even though we are in the new normal era. With the support of various applications that can be used by educators in delivering material to their students.

The project-based learning (PBL) model is a learning approach that emphasizes working on certain projects or tasks as a way to understand and apply knowledge (Nantara, 2021) . At the age of 5-6 years, children are developing basic abilities, and this learning model can be an effective method for improving their critical thinking abilities. Critical thinking skills in children aged 5-6 years involve the ability to observe, analyze, conclude, and assess information in a logical and reflective way. This includes the ability to ask questions, solve problems, and make decisions through critical thinking (Usman et al., 2021) .

Through projects, children are invited to solve problems, make decisions, and think logically. Challenges: Children may need extra guidance to understand the goals and steps of the project. The Project-Based Learning model can be an effective tool for developing critical thinking skills in children aged 5-6 years. By designing projects that are appropriate to the child's developmental level, facilitating collaboration, and providing needed support, PBL can provide meaningful learning experiences and strengthen the critical thinking skills of children of this age.

*Discovery Learning* is a learning approach that emphasizes student exploration and experimentation to build their own understanding (Rosdiana et al., 2017) . In children aged 5-6 years, this stage is often accompanied by high curiosity and a desire to explore the world around them. This model can have a positive impact on the development of critical thinking skills in children (Cahtini et al., 2023) . Critical thinking skills in children aged 5-6 years involve the ability to observe, ask questions, solve problems, and make decisions logically. *Discovery Learning* can stimulate the development of these skills through exploration and hands-on experience.

This model takes advantage of children's natural curiosity to motivate them to learn. Discovery through exploration can stimulate curiosity and trigger critical questions. Discovery Learning can occur in contexts that are relevant and meaningful for children. Discovery Learning builds problem-solving skills by allowing children to find their own solutions. The exploration process helps children develop critical thinking skills to find solutions. The Discovery Learning model can be an effective method for improving critical thinking skills in children aged 5-6 years. By stimulating curiosity, providing hands-on experiences, and encouraging exploration, this approach can help children build the foundations of their critical thinking through an active and meaningful process of discovery.

Sport for children aged 5-6 years not only provides physical benefits, but also contributes to the development of various cognitive skills, including critical thinking abilities (Prawira et al., 2021) . Critical thinking skills at this age involve the ability to observe, analyze, conclude and solve problems logically and through sports, children can develop these skills naturally. Physical activity increases blood flow to the brain, improves cognitive function and increases critical thinking skills. Exercise helps develop motor skills, which are essential for critical thinking abilities. Sports can stimulate children's senses, helping them develop perception and understanding of the surrounding environment (Wondal et al., 2020) .

Sports often require quick problem solving. Children are faced with situations that require quick decisions and creative solutions, advancing critical thinking skills. At this age , it is necessary to pay attention to safety when participating in sports. Supervision and provision of appropriate safety equipment is key to ensuring children's safety. Sport can make a positive contribution to the development of critical thinking skills in children aged 5-6 years. Through a variety of physical activities, children can develop

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motor skills, build social skills, and stimulate critical thinking naturally. It is important to create a safe and supportive environment, and focus on the positive experiences and joy of participating in sport at this age.

### IV. CONCLUSION

From the results of the article review, the researcher drew the conclusion that project based learning, discovery learning and sports models on the critical thinking abilities of children aged 5-6 years.

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