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by Pikir Wisnu Wijayanto

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Implementation of Problem Based Learning Model to Improve Early Childhood Abilities in Creative Thinking

Pikir Wisnu Wijayanto¹, Nurpeni Priyatningsih², Herman^{3✉}, Sudadi⁴, Nanda Saputra⁵

Telkom University, Indonesia ⁽¹⁾

Univet Bantara Sukoharjo, Indonesia ⁽²⁾

Universitas HKBP Nommensen Pematangsiantar, Pematang Siantar, Indonesia ⁽³⁾

Universitas Islam Negeri Sultan Aji Muhammad Idris Samarinda, Indonesia ⁽⁴⁾

Sekolah Tinggi Ilmu Tarbiyah Al-Hilal Sigli, Aceh, Indonesia ⁽⁵⁾

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Abstract

The study below examines the development of students' critical and creative thinking abilities through the use of article reviews and the Problem Based Learning instructional approach. This study is qualitative and was conducted utilizing library research, specifically library research that used data grouping methods. It was then completed by examining and studying numerous pertinent research publications and papers. Utilizing analytical methods for gathering, combining, and recognizing secondary data from numerous pertinent investigations. The adoption of the Problem Based Learning learning paradigm itself can boost students' capacity for creative thought, according to the study's findings. The findings of research done using library resources revealed that students' capacities for creative thought had improved, with outcomes moving into the medium category. In this study, four factors—fluency, flexibility, originality, and elaboration—were also linked to an improvement in students' capacity for creative thought. It follows that at the application of the learning paradigm that Problem Based Learning is capable of improving students' creative thinking skills.

Keywords: *creative thinking skills; early childhood abilities; problem based learning model*

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✉ Corresponding author : Herman

Email Address : herman@uhn.ac.id (Pematang Siantar, Indonesia)

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Introduction

Education has the goal of providing an environment so that students can use it to develop their abilities and talents to the fullest, therefore students' abilities can be realized so that they can be used fully for their own needs and general needs (Battistich, 2004). In addition, Mettas & Constantinou (2008) state that education is also responsible for identifying, developing and improving students' abilities. Associated with excellence and development in the 21st century. Renewal of education must be carried out into modern education (Stinner et al, 2003; Ngongo et al, 2022). Modern education has a goal to train students to have knowledge, innovation and learning skills. Skills in using technology must be owned by every student (Jones and English, 2004). The goal is for students to seek information and provide information

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that can be used for life skills (Muhammadiyah et al, 2023). The current state of the globalization era is in dire need of students who have life skills. Because PBL places learning in the context of real-world situations and holds students accountable for their learning, it is well suited to assisting students in becoming active learners (Hmelo-Silver, 2004; Diani, 2019).

So that the learning model used can make the learning process of students increase. Therefore a teacher must be creative in determining what learning model to use according to the characteristics and circumstances of the students in the class. The Problem Based Learning learning model can be used as an alternative as a learning model that is able to improve students' creative thinking skills (Anazifa & Djukri, 2017). Problem Based Learning is a learning model, which allows students to understand many learning concepts through the conditions and problems presented at the beginning of learning which aims to guide students in solving problems using a problem solving approach (Akinoğlu & Tandoğan, 2007). According to Sidauruk, Silalahi and Herman (2020), problem solving with students' creative thinking abilities are interconnected with one another. Because one of the mechanisms used when a new concept originates by fusing previously used ideas is the capacity for creative thought (Bahar and Aksut, 2020; Nite, 2017)

According to Celik, Onder & Silay (2011), in order to apply the Problem Based Learning learning approach, the followings 5 steps must be completed: 1) Explaining issues to students. 2) Assigning students to research groups. 3) Helping students with their solo and group research. 4) A development and presentation of the results is made. 5) Examine the procedure for solving problems. An example of problem-based learning is: 1) A good technique to comprehend learning is through problem-based learning. 2) Students are motivated to learn new information and feel gratified by problem-based learning. 3) Problem-based learning can boost the amount of learning that students do. 4) Problem-based learning can help students understand how physics disciplines are essentially ways of thinking and how to study them better. 5) Students enjoy the problem-based learning approach a lot. 6) Students can strengthen their critical and creative thinking skills through problem-based learning. 7) Problem-based learning can give students the chance to use their newly acquired information in real-world situations. 8) Problem-based learning encourages pupils to continuously grow and develop their interest in learning.

The ability to make new combinations based on data and information is part of the ability to think creatively, where all the experiences and knowledge that students acquire during their lives are able to produce interactions within the school, community and family environment (Widana & Citrawan, 2019). In the 21st century education a teacher must prepare higher-order thinking skills, which are part of the ability to think creatively. The ability to think creatively is also needed in the Industrial Revolution 4.0 era, the changes that occur are so dynamic and fast (Uhl-Bien et al., 2007; Herman et al, 2022), that they can be balanced with non-monotonous thinking patterns. This competency is one of the most important competencies for students so that students are able to adapt to an environment that is always changing and completely uncertain (Purba et al, 2022).

Moreover, it should be related to the creative thinking ability of the children, especially for the children age 5 years old. According to Koocher (1973), children enter the concrete operational stage at the age of seven, when they are able to use reasoning to solve concrete (real) problems (Marinda, 2020). However, however, their thinking ability is still limited to real situations. At this concrete operational stage, children have cognitive progress or better understanding compared to children at the pre-operational stage in terms of spatial relations, categorization, reasoning and conversion. 1) Spatial relationships. At this concrete operational stage, children are able to remember routes or road signs well and can calculate the distance from one place to another well without measuring first. 2) Categorization. An ability to categorize something so that it can help improve children's logical abilities. The categorization here includes several complex skills, such as sequencing, complete inference, and class inclusion (the ability to see the relationship between a whole and its parts). 3) Reasoning. Here,

reasoning can be divided into two categories: inductive reasoning and deductive reasoning. Children in the concrete operational stage exclusively employ inductive reasoning, according to Piaget. Inductive reasoning is a kind of logical knowledge that begins with the observation of an object or event and draws conclusions about the entirety of the observed object. This inductive reasoning is still just transitory because it's still possible for brand-new data to come to light that contradicts the conclusion. 4) Conservation. At the concrete operational stage, children are able to conclude something without seeing, measuring or weighing the object directly.

Referring to the description above, the researchers presents a research that related to this research. Frankly, this research was found to be difficult to be conducted since there was no research discussed about it. A research presented here was from (Bahar and Aksut, 2020) in their research. The goal of their study was to determine whether problem-solving abilities in preschoolers aged 5 to 6 could be developed through the use of activity-based science teaching techniques. In all, 32 kids were a part of this investigation. The study's data collection instruments included the Personal Information Form and the 4-7 Age Problem Solving Ability Scale. A control group with a pre-test-post-test design was used. The experimental group underwent a 12-week implementation of activity-based scientific teaching techniques developed by the study's researchers (24 integrated activities). In the control group, the Turkish Ministry of National Education's preschool curriculum served as the sole implementation of problem-solving skills. Mann-Whitney U and Wilcoxon Signed-Rank tests were used to analyze the data. The outcomes demonstrated that problem-solving abilities in preschooler might be improved through the use of activity-based science education techniques. Based on the description above, this study aims to improve the ability to think creatively in students based on article reviews by implementing the Problem Based Learning model.

Methodology

This study is a particular kind of qualitative research. This is covered in the research group for the library. Research conducted at libraries typically involves reading literature, whether it be books, journal articles, web articles, reports on research findings, or other types of literature. The procedures for data gathering in the library research approach are as follows: 1) Gathering existing data through books, journals, and online articles (via websites). 2) Conducting an analysis of this data to enable researchers to derive conclusions from the issues examined.

In this study, after collecting data, then analyzing the data to get conclusions. The data used in this study are secondary data, meaning that they were gathered by earlier researchers. From the data obtained, it is analyzed in the following ways: 1) Organizing, which is to review the literacy that has been grouped, 2) Synthesizing, namely the grouping of the results of the literature put together so that it can become a coherent literary summary, 3) Identifying, which is to identify the literacy obtained to be withdrawn conclusion.

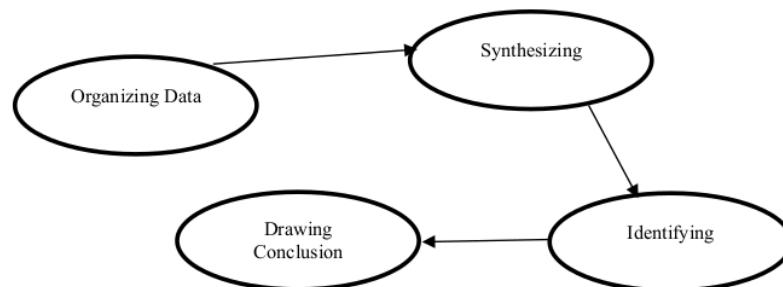


Figure 1. Procedures of Data Analysis

Results and Discussion

Using the Problem Based Learning (PBL) approach is one method for enhancing students' capacity for creative thought. In the PBL paradigm, students learn about creative thinking and problem-solving techniques in the context of real-world problems while also gaining crucial knowledge of the subject matter (Eviyanti et al, 2017). The PBL approach strives to support students' initiative in their work, internal desire for learning, and interpersonal interactions as they build their problem-solving abilities in group settings (Ramadhani et al, 2019). PBL is a method of learning that teaches students how to think creatively and solve issues in the real world while also introducing them to key ideas and knowledge in the field (Eviyanti et al, 2017). The steps of the PBL model are as follows: (1) introducing students to issues (2) directing one-on-one or group encounters (3) producing and exhibiting works. (4) Examining and assessing the approach to problem-solving (Mihardi et al, 2013).

Meanwhile Ramadhani et al (2019) state the capacity to generate new combinations based on facts, information, or components that were previously known both inside the school, family, and community environments, is the consequence of an individual's interactions with their environment. 1) Fluency is one of the creative assessment criteria that relates to features of creative thinking (thinking fluently) 2) Versatility (thinking flexibly) 3) Uniqueness (originality of thinking) 4) Decomposition (elaboration). Consequently, the PBL model can be utilized as a teaching strategy to enhance the ability to think creatively (Tromp & Sternberg, 2022).

According to the research of Elizabeth & Dan Sigahitong (2018), the PBL learning model highlights components of the capacity for creative thought, some of which are as mentioned by Elizabeth & Dan Sigahitong (2018), creative qualities being 1) always curious, 2) have extremely broad interests, and 3) prefer to engage in creative activities. Unconsciously, this expression will encourage pupils to think critically, and it can help improve comprehension of the ideas and material being studied. Therefore, encouraging kids' creative thinking abilities to generate original thoughts or concepts has a significant impact (Cahyati et al, 2022).

Furthermore, Abdurrozzak et al (2016) stated that Creative thinking is a way of thinking that can produce fresh knowledge and solutions by generating various ideas or concepts. As an introduction to passing learning difficulties with students acting as paddle controllers to lead to the direction in which students reach the intended objective or response, creative thinking is like an oar in a boat. There are supporting factors in improving students' creative thinking skills (Leasa et al, 2021). There are worksheets that can be used as a tool to help students understand learning concepts easier, students can consider different situations, some students enjoy challenges, and some students are optimistic about learning. Students discuss topics well, learning activities are enjoyable, students are active in carrying out learning. Additionally, there are obstacles to enhancing students' capacity for original thought (Al-Suleiman, 2009). In addition, Increasing the ability to think creatively towards students can have an effect after applying the Problem Based Learning learning model.

Through the results of the study, the researchers found that this research conducted was different from other researches that have been conducted before by other researches. Hence, this research about discussing about improvement of early child's creative thinking is very seldom and none of research has ever conducted before. But, researchers here tried to present a previous study that related to this study. A research by (Ramadhani et al, 2019) discussed about PBL with its usability and critical view as educational tool. To date, a paradigm that holds that knowledge is a body of facts that must be memorized still rules the learning process in many nations, including wealthy nations. Additionally, based on the curriculum, the teacher continues to be the primary source of knowledge in the classroom. Based on the sources of published journal articles, observation analysis is required to construct a learning system. We discuss a number of issues in this example, including problem-based learning (PBL). According to the analysis review's findings, problem-based learning is a

teaching strategy that places students in situations where they must apply their critical thinking and problem-solving abilities in order to gain information and understanding of the subject matter. High-level thinking in problem-oriented circumstances, such as learning how to learn, is stimulated by problem-based learning.

Conclusion

It is clear from the description above that problem-based learning is an approach that can foster children's creativity. According to the literature reviews of the several research mentioned above, problem-based learning has a positive impact on a child's capacity for original thought. Problem-based learning is an applied learning paradigm that can be used with children who are at an exploration age, or 5 years old. These children have thinking abilities that need to be explored.

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References

- Abdurrozzak, R., Jayadinata, A. K. and Isrok'atun. (2016). Pengaruh model problem based learning terhadap kemampuan berpikir kreatif siswa. *Jurnal Pena Ilmiah*, 1(1), 871-880. <https://ejournal.upi.edu/index.php/penailmiah/article/view/3580>
- Akinoğlu, O., & Tandoğan, R. Ö. (2007). The Effects of Problem-Based Active Learning in Science Education on Students' Academic Achievement, Attitude and Concept Learning. *Eurasia Journal of Mathematics*, 3(1), 71-81. <https://doi.org/10.12973/ejmste/75375>
- Al-Suleiman, N. (2009). Cross-Cultural Studies And Creative Thinking Abilities. *Umm Al-Qura University Journal of Educational & Psychologic Sciences*, 1(1), 42-92. https://faculty.ksu.edu.sa/sites/default/files/cross-cultural_studies.pdf
- Anazifa, R. D., & Djukri. (2017). Project- based learning and problem- based learning: Are they effective to improve student's thinking skills? *Jurnal Pendidikan IPA Indonesia*, 6(2), 346-355. <https://doi.org/10.15294/jpii.v6i2.11100>
- Bahar, M. and Aksut, P. (2020). Investigation on the effects of activity-based science teaching practices in the acquisition of problem solving skills for 5-6 year old pre-school children. *Journal of Turkish Science Education*, 17(1), 22-39. <https://doi.org/10.36681/tused.2020.11>
- Battistich, V. (2004). *Character Education, Prevention, and Positive Youth Development*. <http://journals.apa.org/prevention/volume4/pre0040001a.html>
- Cahyati, S. S., Tukiyo, T., Saputra, N., Julyanthry, J., and Herman, H. (2022). How to Improve the Quality of Learning for Early Childhood? An Implementation of Education Management in the Industrial Revolution Era 4.0. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 6(5), 5437-5446. <https://doi.org/10.31004/obsesi.v6i5.2979>
- Celik, P., Onder, F., & Silay, I. (2011). The effects of problem-based learning on the students' success in physics course. *Procedia - Social and Behavioral Sciences*, 28, 656-660. <https://doi.org/10.1016/j.sbspro.2011.11.124>
- Diani, R., Herliantari, H., Irwandani, I., Saregar, A., & Umam, R. (2019). The Effectiveness of SSCS Learning Model: Its Impact on the Students' Creative Problem-Solving Ability on the Concept of Substance Pressure. *Jurnal Penelitian Fisika Dan Aplikasinya (JPFA)*, 9(1). <https://doi.org/10.26740/jpfa.v9n1.p65-77>
- Elizabeth, A., & Dan Sigahitong, M. (2018). Pengaruh Model Problem Based Learning Terhadap Kemampuan Berpikir Kreatif Peserta Didik SMA. *Jurnal Pengkajian Ilmu Dan Pembelajaran Matematika Dan IPA IKIP Mataram*, 6(2), 67-76. <https://doi.org/10.33394/j-ps.v6i2.1044>

- Eviyanti, C. Y., Surya, E., Syahputra, E., & Simbolon, M. (2017). Improving the Students' Mathematical Problem Solving Ability by Applying Problem Based Learning Model in VII Grade at SMPN 1 Banda Aceh Indonesia. *International Journal of Novel Research in Education and Learning*, 4, 138-144. <https://www.noveltyjournals.com/upload/paper/Improving%20the%20Students%E2%80%99%20Mathematical-971.pdf>
- Herman, Shara, A. M., Silalahi, T. F., Sherly, & Julyanthry. (2022). Teachers' Attitude towards Minimum Competency Assessment at Sultan Agung Senior High School in Pematangsiantar, Indonesia. *Journal of Curriculum and Teaching*, 11(1), 1-14. <https://doi.org/10.5430/jct.v11n2p1>
- Hmelo-Silver, C. E. (2004). Problem-Based Learning: What and How Do Students Learn? In *Educational Psychology Review*, 16(3). <https://doi.org/10.1023/B:EDPR.0000034022.16470.f3>
- Jones, C. & English, J. (2004). A Contemporary Approach to Entrepreneurship Education. *Education + Training*, 46(8/9), 416-423. <https://doi.org/10.1108/00400910410569533>
- Kholifah, L. N., & Dwikoranto, D. (2022). Implementation Of The Problem Based Learning Model To Improve Students' Creative Thinking Ability. *IPF: Inovasi Pendidikan Fisika*, 11(2), 17-23. <https://doi.org/10.26740/ipf.v11n2.p17-23>
- Koocher, G. P. (1973). Childhood, death, and cognitive development. *Developmental Psychology*, 9(3), 369-375. <https://doi.org/10.1037/h0034917>
- Leasa, M., Batlolona, J. R., & Talakua, M. (2021). Elementary students' creative thinking skills in science in the Maluku islands, Indonesia. *Creativity Studies*, 14(1), 74-89. <https://doi.org/10.3846/cs.2021.11244>
- Marinda, L. (2020). Teori Perkembangan Kognitif Jean Piaget Dan Problematikanya Pada Anak Usia Sekolah Dasar. *An-Nisa': Journal of Gender Studies*, 13(1), 116 - 152. <https://doi.org/10.35719/annisa.v13i1.26>
- Mettas, A. C., & Constantinou, C. C. (2008). The technology fair: A project-based learning approach for enhancing problem solving skills and interest in design and technology education. *International Journal of Technology and Design Education*, 18(1), 79-100. <https://doi.org/10.1007/s10798-006-9011-3>
- Mihardi, S., Harahap, M. B., & Sani, R. A. (2013). The Effect of Project Based Learning Model with KWL Worksheet on Student Creative Thinking Process in Physics Problems. *Journal of Education and Practice*, 4(25). <https://core.ac.uk/reader/234635060>
- Muhammadiyah, M., Tannuary, A., Romadhianti, R., Fatmawati, E., and Herman, H. (2023). Critical Discourse Analysis in the Education Community to Respond the Hoax Based on Technology and Information. *Al-Ishlah: Jurnal Pendidikan*, 15(1), 95-104. <https://journal.staihubbulwathan.id/index.php/alishlah/article/view/2158>
- Ngongo, M., Purba, R., Thao N, V., & Herman. (2022). An Application of Compositional Metafunctions in Improving Children's Ability to Learn English Through Images. *Jurnal Pendidikan Progresif*, 12(3), 1177-1188. <https://doi.org/10.23960/jpp.v12.i3.202214>
- Nite, S. (2017). Using Polya's Problem Solving Process in the Mathematics Classroom to Prepare for Taks. In *Pedagogy and Content in Middle and High School Mathematics* (pp. 233-235). https://doi.org/10.1007/978-94-6351-137-7_51
- Purba, R., Herman, H., Purba, A., Hutauruk, A. F., Silalahi, D. E., Julyanthry, J., and Grace, E., (2022). Improving teachers' competence through the implementation of the 21st century competencies in a post-covid-19 pandemic. *Jurnal Masyarakat Mandiri*, 6(2), PP. 1486-1497. DOI: <https://doi.org/10.31764/jmm.v6i5.10330>
- Ramadhani, R., Huda, S., & Umam, R. (2019). Problem-Based Learning, Its Usability and Critical View as Educational Learning Tools. In *Journal of Gifted Education and Creativity*, 6(3). <https://dergipark.org.tr/en/pub/jgedc/issue/50605>
- Sidauruk, A., Silalahi, D. E., and Herman, H. (2020). The Effect of Problem Based Learning

- (PBL) on Writing Recount Text at Grade Ten of SMK Negeri 2 Pematangsiantar. *Journal of English Teaching as a Foreign Language* 6 (1), 29-43. <https://ejournal.uhn.ac.id/index.php/jetafl/article/view/109>
- Stinner, A., Mcmillan, B. A., Klassen, S., Metz, D., & Jilek, J. M. (2003). The Renewal of Case Studies in Science Education. *Science & Education*, 12, 617-643. <https://doi.org/10.1023/A:1025648616350>
- Tromp, C., & Sternberg, R. J. (2022). Dynamic Creativity: A Person × Task × Situation Interaction Framework. *Journal of Creative Behavior*. <https://doi.org/10.1002/jocb.551>
- Uhl-Bien, M., Marion, R., & McKelvey, B. (2007). Complexity Leadership Theory: Shifting leadership from the industrial age to the knowledge era. *Leadership Quarterly*, 18(4), 298-318. <https://doi.org/10.1016/j.leaqua.2007.04.002>
- Widana, W., & Citrawan, W. (2019). Work Motivation and Creativity on Teacher Ability to Develop HOTS-based Assessments. *International Journal of Social Sciences and Humanities*, 3(3). <https://sciencescholar.us/journal/index.php/ijssh/article/view/378>

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