



## **THE INFLUENCE IMPLEMENTATION MODEL SELF DIRECTED LEARNING TOWARDS ABILITY THINK CRITICAL CHILDREN AGE 5-6 YEAR**

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### **Abstract**

This research is a quasi-experimental research with a design Nonequivalent-Groups Pretest- Posttest Design which aims to determine the influence of the application of self-directed learning models learning on critical thinking skills in children aged 5-6 years at the Al-Hanif Muta'awin Integrated Islamic PAUD. The population studied were all children in group B at the PAUD, with a total of 40 children. The research sample consisted of group B1 as an experimental class with 15 children, and group B2 as a control class with the same number. Data collection methods used included descriptive analysis and inferential analysis. The results of the study showed that there was a significant effect of the application of the self-directed learning model on the critical thinking skills of children aged 5-6 years. The test results showed an increase in critical thinking skills in the experimental group, with an average value reaching 20.20, while in the control group the average value was 13.67. The difference in average values between the two groups showed that the experimental group had a higher value. Thus, based on the results of the Wilcoxon test, it can be concluded significantly that the application of the self-directed learning model has an effect on critical thinking skills in children aged 5-6 years at the Al-Hanif Muta'awin Integrated

**Keywords:** Self Directed Learning, Critical Thinking, Children Age 5-6 Year

### **INTRODUCTION**

Education child age early is the most important aspect fundamental Because its influence very big to development children in the future (Halamury, 2022). Various meaningful stimuli provided on age early will be very determine direction development child the (Subakti, 2022). Education child age early is a expected steps can stimulate development potential children, including ability in values morals and religion, cognitive, language, motor, and social-emotional (Khadijah & Armanila, 2017). In education 21st century, important for children For can relate what they learn with the reality that they meet in environment around (Halamury, 2022). Children should Can use device or technology that required For to design environment real work, get required skills in a way level

continue, and ready face challenges 21st (Noperman, 2022) century. Customized education with challenge the 21st century is very required for prepare children become source Power quality human being (Sari et al., 2023).

Education own role important in forming a mindset. In addition, education Also expand outlook somebody (Susanto ahmad, 2018). For prepare source Power man face challenge 21st century, education must based on on draft structured learning by UNESCO Commission, namely "the four pillars of education ". Education No only applicable For person adults, but Also started since in content (Yunita et al., 2019). Ability cognitive develop in a way gradually along with development physical and nervous in the center system nerve (Fajar et al., 2020). Ability cognitive needs sharpened since early is ability think. think is Wrong One part of the ability cognitive level height that must be sharpened as early as maybe, including ability think critical (Imamah & Muqowim, 2020).

Ability think critical child can seen from the questions about things that are usually No considered to be asked by children, and question about new things that appear around him (Reswari, 2021). According to Lipman, there are difference between think normal and thinking critical. Thinking normal tend simple and less have standards, while think critical more complex and based on standards of objectivity and consistency (Siddin, Hamzah, 2021). Based on Lipman's opinion, thinking critical own higher levels of complexity and consistency high, so that ability think critical Far more tall compared to with think usual. Activities think normal No too Lots involving activity cognitive level tall like analyze, synthesize, conclude, and evaluate (Yunita et al., 2019). Objective hone ability think critical on child is For educate them to be able to to communicate his thoughts, finishing problems , and sorting information received (DinicaHyani, 2022). In addition, with taught think critical since early , child expected can become more personal careful , no easy surrender , and responsible answer (Destrianti, 2021).

Based on results observations made in August 2023 at the Al- Hanif Integrated Islamic PAUD Muta'awin on child age child 5-6 year that seen there are 11 people active child moment activity learning capable submit questions and find difference so that enter in Category Stage Start Developing (MB), but 19 people seen child with ability think critical Not yet fully trained or in stage Not yet Developing (BB). Marked with Still There is arranged objects No according to category and still There is a number of child who has not know the difference of a object. In addition, Activities learning at PAUD seems monotonous because Still dominated by method Teacher Center , where teachers provide explanation and child only listen without existence stimulating activities child For active think and explore in activity learning. In addition, from a pedagogical perspective, the ability educator Also not enough adequate Because they seldom follow training about model learning in PAUD. Background education part educators who are non-PAUD graduates too cause lack of understanding about model capable learning interesting interest and increase motivation as well as development ability children in PAUD.

For overcome this problem, educators need look for model learning that can help participant educate in learning, growing return motivation and interest participant educate in learning. This definition contains meaning that educator should capable apply model learning that can increase ability participant educate in develop, discover, investigate, and reveal participants' ideas educate Alone For get results optimal learning.

With say other expected hopefully educator capable increase ability think critical participant educate in stimulate development child. One of model learning that can help development think critical participant educate is model learning Self- Directed Learning (SDL). SDL is model in which processes and controls participant educate own very close relationship and interaction with each other The same other (Marlina et al., 2019). In this strategy, the role of educator is submit problem, file questions, facilitating atmosphere dialogue, provide facilities, as well as do study (Maulany et al., 2022).

According to Kirman (Nyoman & Handayani, 2017) Self- Directed Learning (SDL) is the process in which participants educate involved in identify what is needed studied and held control in find as well as organize answer (Yılmaz et al., 2020). In this model, participants educate become active in arrange learning they myself, including determine objective learning, choosing source learn, and evaluate progress they Alone (Fadlilah, 2018a). This approach provides participant educate freedom For Study in accordance with interests, needs, and styles Study they alone, so that push independence , motivation intrinsic, and development skills think critical . According to Arya (Khothibulumam et al., 2021).”

Model Self- Directed Learning (SDL) utilizes environment as source important learning In SDL, participants educate, especially in context adult learner , has not quite enough answer full to activity study it themselves . They take initiative in identify objective study plan process learning, choosing source power, and evaluate progress they. Environment learning that supports and provides access to various source Power supporters, such as books, internet, and others, can help development potential participant educate in SDL model. With Thus, independence and responsibility answer participant educate to process learning they become key success in SDL.”

Guglielmino (Sulasiwi et al., 2019) state that Self Directed Learning (SDL) provides freedom and independence to participant educate, including children, in process Study they. They own autonomy for determine what material do you want studied and how they will learn it. Self directed learning allow flexibility in learning, but still focus on planning, monitoring, and evaluating progress Study participant educate. This allows participant educate For arrange learning they in accordance with needs, interests , and styles Study each one , while still ensure that process learning still focused and sustainable (Fadlilah, 2018b). Sadia (2008) stated that that Self Directed Learning (SDL) is known own close correlation with increased desire know, quality understanding, thinking critical, retention information, power remember, and ability taking more decisions good. Because participant educate own control full on process learning they, they tend more motivated for explore interesting topic interest they in a way deep. This can produce better understanding deep and sustainable about material lesson.

In addition, because they active involved in process learning, they own more lots chance for hone skills think critical, improve ability retention and power remember, and develop ability in taking a wise decision (Khothibulumam1 et al., 2021b). SDL model is indeed allow participant educate for change learning from one situation to situation others, which emphasizes on comfort and style learning that is liked by participant educate. This helps reduce boredom and make learning become more fun. SDL too give participant

educate freedom for arrange process learning they myself, including initiative, independent, regulation self, exploration self, and freedom Study (Maya, 2019).

Learning independent own excess like increase activity participant educate, enable they determine style appropriate learning, and develop knowledge and independence. However, there are Also the necessary deficiencies overcome, such as lack of interaction between participants educate. This can overcome with increase interaction between participant educate, enable they for develop skills and knowledge they through exchange of ideas and thoughts (Huriah, 2018). With thus, the integration of information technology can become very useful tool useful in overcome this challenge, facilitating communication and collaboration between participants educate in context learning independent.

Process learning in SDL can shared into three stages main: planning, monitoring, and evaluation. In stage planning, participants educate plan activity study they, including determine convenient time and place, and set component learning and the target you want achieved. Stage monitoring involving observation and observation participant educate to learning they alone (Fitri & Amelia, 2024). Through this monitoring, participants educate can identify challenge learn and create learning become more meaningful. Stage evaluation involving reflection participant educate to their learning and knowledge have. Teacher then give bait back and push collaboration between participant educate For reach better understanding good. The teacher does not in a way direct evaluate participant educate, but provide time for evaluation and feedback come back for every participant educate in a way individual. With thus, this process allows participant educate for take control full on learning they alone, while get support and guidance from the teacher (Octavia, 2020). Self-directed learning model was applied to determine critical thinking skills by conducting a study entitled "The effect of implementing the self-directed learning model on the critical thinking skills of 5-6 year old children at the Al-Hanif Muta'awin Integrated Islamic PAUD".

## METHODOLOGY

This study is a quasi-experimental study , because the researcher uses groups that have been formed naturally (Ward Creswell, 2018)in general with the aim of determining the effect of implementing the self-directed learning model to develop children's critical thinking skills. Research design This that is pretest-posttest Nonequivalent Control Group Design. In design study This there are two groups that is group experiments and groups control (Sugiyono, 2013). The goal that is comparing two different treatments to subject different research

**Table 1.** Research Design Nonequivalent-Groups Pretest-Posttest Design

Group	Pretest	Treatment	Posttest
A	O <sub>1</sub>	X	O <sub>2</sub>
B	O <sub>3</sub>		O <sub>4</sub>

Information:

- A : Experimental group/class
- B : Control group/class
- X : Treatment (The experimental group that was given the treatment was application of self-directed learning )
- O<sub>1</sub> & O<sub>3</sub> : Both groups were observed with a pretest to determine initial learning outcomes.
- O<sub>2</sub> : The results of students' critical thinking skills after implementing self-directed learning.
- O<sub>4</sub> : Ability results critical thinking of students who are not given treatment.

Population in this research is child students who are on Group B of Al- Hanif Integrated Islamic Early Childhood Education Muta'awin as many as 3 classes totaling 40 people with details 25 women and 15 men. In researcher sample determination use purposive sampling, namely determine the sample with criteria certain appropriate with objective research (Sugiyono, 2013).

Collection Techniques Data in This research is:

a. Observation

Observations were conducted by researchers to obtain data on students aged 5-6 years at the Al-Hanif Muta'awin Integrated Islamic PAUD. Observations ability critical thinking child done in two times that is observation beginning ability critical thinking that is observations made before implementation self directed learning model and observation end thinking ability critical that is on moment Already model implementation self-directed learning.

b. Test

In addition to using observation techniques, this study collected data with tests. Tests (Sukardi, 2021) are a regular procedures used For observe One or more individual characteristics . In this research, method the involving use of treatment tests or the act of committing before and after implementation model learning, with objective For evaluate ability think critical child age 5-6 years at Al- Hanif Integrated Islamic PAUD Muta'awin .

c. Documentation

According to Arikunto, documentation is process data search involving notes, transcripts, books, newspapers, magazines, inscriptions, meeting minutes, agendas, and sources information other relevant with variables or current topic investigated (Sukardi, 2018). Documentation used for strengthen data and provide description in a way concrete about research conducted. In this research, document used for obtain the necessary data related with amount children and outcome data assessment. With thus, this technique does not do interaction direct with subject study.

The data obtained from the research sample is quantitative data. The data is analyzed using descriptive statistics and inferential statistical analysis techniques.

1) Descriptive Analysis

Descriptive statistical analysis is the technique that used for analyze data with method describe or explain the data that has been collected as existence, without mean to produce the applicable conclusion in a way general or make generalization. This descriptive statistical analysis technique will be carried out use device SPSS software, with data presentation which includes calculation mark lowest and highest, average (mean), median, mode, standard deviation, and variance.

2) Non Parametric Analysis

Nonparametric statistics is part from statistics inferential which is not depends on value of one or more population parameters. Non-parametric statistics are used for analyze sample data that not normal, and the number of samples in second group same. Nonparametric statistical tests used in this research is test different (Test Wilcoxon Signed Rank Test) using SPSS application. Test Wilcoxon Signed Rank Test is tools used for test two samples that related, to test difference between two samples, as well as for know big differences in ranking (Sugiyono, 2013).

Following as for criteria decision the test as following:

H<sub>0</sub>: Accepted If Sig. value (2-tailed) > 0.05, meaning no there is influence implementation model learning self directed learning to ability think critical child age 5-6 years at Al- Hanif Integrated Islamic PAUD Muta'awin .

H<sub>1</sub>: Accepted If Sig. value (2-tailed) <0.05 means There is influence implementation model learning self directed learning to ability think critical child age 5-6 years at Al- Hanif Integrated Islamic PAUD Muta'awin

**RESULTS AND DISCUSSION**

Result data observation ability think critical described in result data form pretest and posttest. Pretest is results ability think critical on group experiments and groups control before second group the given treatment or treatment, use know ability think critical beginning children. Meanwhile, the posttest is results ability think critical child on group experiments and groups control after given treatment or treatment. Treatment given to group experiment in the form of implementation model learning self directed learning, while on group control no given treatment or activity in progress like normal. Results observation pretest and posttest ability think critical on group experiments and groups control can seen on table the following.

**Table 2.** Results Analysis Descriptive Ability Think Critical Descriptive Statistics

s	N	Minimum	Maximum	Mean	Std. Deviation
pretest_control	1 5	6	15	9.73	3,058
posttest_control	1 5	11	18	13.67	2,690
pretest_experiment	1 5	6	15	9.60	3,043
Posttest_experiment	1 5	16	24	20,20	2,597
Valid N (listwise)	1 5				

Based on the table above, the results pretest on group experiment show mark maximum of 15 and a minimum value of 6, with a standard deviation of 3.043 and an average value of 9.60. Meanwhile, the results pretest on group control show mark maximum 15 and minimum value 6, with a standard deviation of 3.058 and an average value of 9.73.

Results posttest on group experiment for ability think critical show mark maximum of 24 and a minimum value of 16, with a standard deviation of 2.597 and an average value of

20.20. While results posttest on group control show mark maximum 18 and minimum value of 11, with a standard deviation of 2.690 and an average value of 13.67. Test Wilcoxon used for determine whether There is influence implementation model learning selfdirected learning to ability think critical child age 5-6 years at Al- Hanif Integrated Islamic PAUD Muta'awin. If Sig. value (2-tailed) > 0.05, then H0 is accepted and H1 is rejected, which means no there is influence implementation model learning self directed learning to ability think critical. If Sig. value (2-tailed) < 0.05, then H0 is rejected and H1 is accepted, which means There is influence implementation model learning self directed learning to ability think critical.

**Table 3.** Results Test Wilcoxon Ability Think Critical Group Control

Test Statistics	
	posttest control - pretest control
Z	-2,601 <sup>b</sup>
Asymp . Sig. (2-tailed)	0.09

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Based on table said, the results of the Wilcoxon test for ability think critical children in groups control show that mark Zcount is -2.601 and the sig value is 0.09. This is show that sig value  $0.09 > 0.05$ , so can concluded that no there is difference significant in ability think critical children in groups control before and after treatment. Next, the Wilcoxon test on the group experiment used for see influence from the treatment given, namely application of the self-directed learning model, with compare and see difference between pretest and posttest data. The following is Wilcoxon test results for ability think critical of the group experiment:

**Table 4.** Results Test Wilcoxon Ability Think Critical Group Experiment

Test Statistics	
	Posttest_experiment-pretest_experiment
Z	-3,495 <sup>b</sup>
Asymp . Sig. (2-tailed)	,000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

As for mark Asymp Sig (2-tailed) obtained is  $0.000 < 0.05$ , then H0 is rejected and H1 is accepted. This means that There is influence implementation model learning self directed learning to improvement ability think critical child. This is show that there is difference significant in ability think critical child on group experiment before and after given treatment. In stimulate ability participant educate, required various strategies, models, methods, and approaches learning that can facilitate development child optimally. One of the method for reach this purpose is with apply model learning self directed learning. Self- directed learning is skills in which a person capable determine and choose the

desired goal achieved, planned the strategy to be implemented, trying solve problem, manage self myself, and evaluate thoughts and performance that have been done. (Pangabean et al., 2021). Self-directed learning , or independent learning, is a concept that emphasizes the active role of children in achieving learning goals according to their individual styles and abilities. Through this learning model, children are given the opportunity to carry out learning activities independently or with the help of others, driven by their own motivation in mastering a particular material or competency. The ultimate goal is to use the knowledge and skills acquired in solving problems faced, both in school and in real life. Self- directed learning Also can interpreted as process improvement knowledge, skills, achievements and development self. According to Kirman (Nyoman & Handayani, 2017) Self-directed learning is a process in which students are involved in identifying what needs to be learned and take control in finding and organizing answers.

According to Arjaya (Khothibulumam et al., 2021), "The Self Directed Learning (SDL) model is one of the learning models that involves the environment as a source of learning. In this model, the development of student potential can run well if students, who in this context can be adult learners, have full responsibility for their learning activities. Guglielmino (Sulasiwi et al., 2019) stated that SDL ( Self Directed Learning ) is an active process of searching for meaning, through a process of exploration, reflection, and new understanding. Self Directed Learning provides solutions in developing children's intelligence. This is one of the learning models applied by individuals for themselves. Results optimal learning can obtained when child can Study in accordance with its speed by myself. With Self Directed Learning, children given chance for arrange process study they alone through initiative, independence, organization self, exploration self, and freedom learning. This is a opportunity valuable as it should be utilized as good as possible since early.

Self-directed learning model can develop children's abilities, one of which is children's critical thinking skills. This is supported by Sadia's (2008) explanation, which states that Self-Directed Learning (SDL) is also known to always be related to increased curiosity, quality of understanding, critical thinking, retention, memory, and better decision making. According to Haris Mujiman (Sadia, 2008), the explanation of the self-directed learning model shows that children are actively involved in the learning process to master a competency, by building on the knowledge or competency that has been possessed so that children's creative and critical thinking abilities can develop well. Based on this, the self-directed learning model is able to stimulate children's critical thinking skills, as seen from the results of the treatment in this study which obtained a significance value of 0.000 in critical thinking skills.

Furthermore, if we look at the average posttest scores of the children, it appears that the average posttest scores of the experimental group are higher than the average posttest scores of the control group. ability think critical, average value of the group experiment reach 20.20 more tall than group posttest average score control that only reached 13.67. From the results the average value of this posttest, can concluded that there is difference influence between group given group treatment implementation model learning self directed learning with group that does not given treatment implementation model learning self directed learning in increase ability think critical child age 5-6 years.



Based on Exposure about model theories learning self directed learning and results of treatment implementation model learning self directed learning, can concluded that This research supports the theories that state that implementation model learning self directed learning can stimulate ability think critical child. With thus, the results study conclude that implementation model learning self directed learning influential to ability think critical child age 5-6 years at Al- Hanif Integrated Islamic PAUD Muta'awin.

## CONCLUSION

Ability think critical child before and after treatment implementation model learning self directed learning show existence significant changes. Before given treatment, part big children own ability think critical still less, seen from the difficulty they in to put forward opinion about information new seen, identify difference various objects, and recognize because consequences. However, after given treatment with use implementation model learning self directed learning, ability think critical child experience improvement. Can concluded that there is influence implementation model learning self directed learning to ability think critical on child age 5-6 years at Al- Hanif Integrated Islamic PAUD Muta'awin. This means, the implementation model learning self directed learning can increase ability think critical child.

## BIBLIOGRAPHY

- Destrianti, V. (2021). Analysis of scientific approach towards critical thinking ability in children aged 5-6 years at state kindergarten of air hangat village, air hangat timur district, kerinci regency.
- Dinicahyani. (2022). Efforts to improve creativity and critical thinking skills of early childhood in nurussalam kindergarten, jambi city through loose parts game-based learning techniques postgraduate thesis state islamic university of sulthan thaha saifuddin jambi 2022.
- Fadlilah, W. (2018a). Self Directed Learning of Islamic Kidergarten Students in Improving Multiple Children's Intelligences. *PHENOMENON*, 10 (1), 41–54. <https://doi.org/10.21093/FJ.V10I1.1045>
- Fadlilah, W. (2018b). Self Directed Learning of Islamic Kidergarten Students in Improving Multiple Children's Intelligences | *PHENOMENON*. <https://journal.uinsi.ac.id/index.php/fenomena/article/view/1045>
- Fajar, N., Munawar , M., & Kusumaningtyas , N. (2020). Analysis Model Learning Inquiry For Stimulating Ability Thinking Critical Children Age 4-5 Year. *Journal Scientific The Charm of PAUD* , 7 (2), 62–73. <https://doi.org/10.24036/110847>
- Fitri, AW, & Amelia, D. (2024). The Influence of the Self Directed Learning Model on Ability Know Size In Children Aged 4-5 Years In Kindergarten Tunas Bhakti PGRI Sidomulyo | *Edusiana: Journal Educational Science*. <https://publikasi.abidan.org/index.php/edusiana/article/view/485>
- Halamury, M. f. (2022). *Textbook of Learning Theory in PAUD (Early Childhood Education) Learning* - Mercy F Halamury - Google Books.
- Huriah , T. (2018). *Student Center Learning Method: Application on Education Nursing*. 216. [https://books.google.com/books?hl=en&lr=&id=NcNoDwAAQBAJ&oi=fnd&pg=PA1&dq=nursing&ots=3fmNh\\_TIEO&sig=McXRengnaFIXFYpUt8TKEWoPaKo](https://books.google.com/books?hl=en&lr=&id=NcNoDwAAQBAJ&oi=fnd&pg=PA1&dq=nursing&ots=3fmNh_TIEO&sig=McXRengnaFIXFYpUt8TKEWoPaKo)
- Imamah , Z., & Muqowim , M. (2020). Development creativity and thinking critical on

- child age early through method learning STEAM based and loose part. *Yinyang : Journal Islamic Studies Gender and Children*, 15 (2), 263–278. <https://doi.org/10.24090/YINYANG.V15I2.3917>
- Khadijah & Armanila. (2017). EARLY CHILDREN'S PLAY AND GAMES.
- Khothibulumam, AA, Nurfauzi , F., Permata , HN, Zahra , LA, Sakan , M., Handoko , NS, Alifa , R., Informatics, <sup>1</sup> engineering, Dan, S., Uin , T., Gunung , S., & Bandung, D. (2021a). Improving Children's Self -Directed Learning in Villages The courtyard Through the Home Program Smart. *PROCEEDINGS OF UIN SUNAN GUNUNG DJATI BANDUNG*,1(87),12–20. <https://proceedings.uinsgd.ac.id/index.php/proceedings/article/view/1113>
- Khothibulumam, AA, Nurfauzi, F., Permata, HN, Zahra, LA, Sakan, M., Handoko, NS, Alifa, R., Informatics, <sup>1</sup> engineering, Dan, S., Uin, T., Gunung, S., & Bandung, D. (2021b). Improving Children's Self Directed Learning in the Village The courtyard Through the Home Program Smart. *PROCEEDINGS OF UIN SUNAN GUNUNG DJATI BANDUNG* , 1 (87), 12–20. <https://proceedings.uinsgd.ac.id/index.php/proceedings/article/view/1113>
- Marlina , R., Miranda, D., Marmawi , & Maulidi , A. (2019). Effect of Students' Self-Directed Learning to Self-Care in Organs of Human Body Lesson on Daily Life. 3, 387–395. <https://doi.org/10.31004/obsession.v3i2.201>
- Maulany, LE, Neviyarni, & Nirwana, H. (2022). Learning Theory Popular (Project Based Learning, Quantum Learning, Self -Directed Learning, Contextual Learning): Arrays. *Eductum : Journal Literacy Education* , 1 (2), 254–264. <https://doi.org/10.56480/EDUCTUM.V1I2.747>
- Maya, SA (2019). Implementation Method Self Directed Learning in Subjects Faith Class VIII Morals at MTs NU Raudlatut Tholibin Sidomulyo Jekulo Holy Year 2018/2019 Lessons.
- Noperman, F. (2022). LEARNING INNOVATION: From creative ideas in the head to innovative practices in ... - Ferry Noperman.
- Nyoman, N., & Handayani, L. (2017). THE EFFECT OF SELF-DIRECTED LERNING MODEL ON STUDENTS' INDEPENDENCE AND SCIENCE LEARNING ACHIEVEMENT OF GRADE VIII SMP N 3 SINGARAJA. *Journal Scientific Education And Learning*, 1 (1). <https://doi.org/10.23887/JIPP.V1I1.11957>
- Octavia, S. A. (2020). Models Learning - Google Books. [https://www.google.co.id/books/edition/\\_/ptjuDwAAQBAJ?hl=id&gbpv=1&pg=PP1&dq=learning+model](https://www.google.co.id/books/edition/_/ptjuDwAAQBAJ?hl=id&gbpv=1&pg=PP1&dq=learning+model)
- Pangabean, S., Lisnasari, S.F., Puspitasari, I., Basuki, L., Fuadi, A., & Firmansyah, H. (2021). Student Center Learning and Teacher Center Learning Systems. *Indonesian Science Media*, 1–239. <https://ejournal.upi.edu/index.php/jpis/article/view/3669>
- Reswari, A. (2021). EFFECTIVENESS OF STEAM-BASED LEARNING ON CRITICAL THINKING ABILITIES (HOTS) OF 5-6 YEAR OLD CHILDREN. *JCE (Journal of Childhood Education)*, 5 (1), 1–10. <https://doi.org/10.30736/JCE.V5I1.490>
- Sari, N., Suryani, D., Evasufi Widi Fajari, L., & Yustika Rini, R. (2023). Communication With Approach HOT In Education Early Childhood In 21st Century. *DWIJA CENDEKIA: Pedagogical Research Journal*, 7 (2). <https://doi.org/10.20961/JDC.V7I2.76438>
- Siddin, Hamzah, ISW (2021). COGNITIVE LEARNING MODEL FOR STUDENTS' CRITICAL THINKING SKILLS. 30.
- Subakti, et al. (2022). Early Childhood Education.
- Sukardi. (2018). Research Methodology Education: Competence and Practice (Edition)Revision) - Prof. HM Sukardi, M.Ed., M.Sc., Ph.D. - Google Books.

- [https://books.google.co.id/books?id=gJo\\_EAAAQBAJ&printsec=frontcover&hl=id&source=gbs\\_ge\\_summary\\_r&cad=0#v=onepage&q&f=false](https://books.google.co.id/books?id=gJo_EAAAQBAJ&printsec=frontcover&hl=id&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false)
- Sukardi, HM (2021). *Methodology study education: Competence and practice* [Educational research methodology: Competence and practice]. 318.
- Sulasiwi, IF, Handayanto, SK, & Wartono, W. (2019). Exploration high school students' self-directed learning (SDL) skills: a descriptive research study. *Momentum: Physics Education Journal*, 3 (1), 42–52. <https://doi.org/10.21067/MPEJ.V3I1.3345>
- Susanto Ahmad. (2018). Education Early Childhood In. *AL-TARBIYAH: EDUCATIONAL JOURNAL (The Educational Journal)*, 3 (2), 31–40. [https://books.google.com/books/about/Pendidikan\\_Anak\\_Usia\\_Dini.html?hl=en&id=O0xWEAAAQBAJ](https://books.google.com/books/about/Pendidikan_Anak_Usia_Dini.html?hl=en&id=O0xWEAAAQBAJ)
- Ward Creswell, J. (2018). *Research design: qualitative, quantitative, and mixed methods approaches*. SAGE Publications, Inc. (US), 3–23. [https://books.google.com/books/about/Research\\_Design.html?hl=en&id=s4ViswEACAAJ](https://books.google.com/books/about/Research_Design.html?hl=en&id=s4ViswEACAAJ)
- Yılmaz, S., Çiğ, O., & Yılmaz-Bolat, E. (2020). The Impact of A Short-Term Nature-Based Education Program On Young Children's Biophilic Tendencies. 19 (3), 1729–1739. <https://doi.org/10.17051/ilkonline.2020.734968>
- Yunita, H., Meilanie, SM, & Fahrurrozi. (2019). Improving Ability Think Critical through Approach Scientific. *Journal Obsession: Journal of Early Childhood Education*, 3 (2), 425–432. <https://doi.org/10.31004/OBSESI.V3I2.228>