JTH

https://jthkkss.com/
eISSN 2805-4431
DOI: https://doi.org/10.53797/jthkkss.v2i1.9.2021

The Influence of The Make a Match Type Cooperative Learning Model on Understanding Science Concepts in Class Vi SDN 1 Mayonglor

Malasari, Risma Maula[1] & Fajrie, Nur[1*]

[1] Muria Kudus University, Jl. UMK North Ring, Gondangmanis, Bae, Kudus – 59327 Central Java, INDONESIA

*Corresponding author email: nur.fajrie@umk.ac.id

Available online 25 May 2021

Abstract: This research aims to analyze the effect of implementing the Make a Match type cooperative learning model assisted by solar eye card media in understanding science concepts for class VI students at SDN 1 Mayonglor. This research uses a quantitative experimental research design, namely one group pretest-posttest design. This design is a pre-experimental development by collecting data obtained from observations, concept understanding questionnaires and documentation. The location of this research will be carried out in class VI of SDN 1 Mayonglor. The sample in this study was 17 students using saturated sampling techniques. The results of this research show that the statistical score of the paired sample t test shows that there is a difference in the average pretest value of 53 while the average posttest value is 76 and the hypothesis test score of the Paired Sample T-Test with Sig. (2-tailed), namely 0.000 < 0.05, then Ho is rejected and Ha is accepted so that the make a match type cooperative learning model assisted by solar eye card media has an effect on the understanding of science concepts for class VI students at SDN 1 Mayonglor.

Keywords: Concept understanding, make a match type cooperative, solar eye card media

1. Introduction

Education at level base own role important in sustainability formation character and knowledge student for to level education furthermore. Learning at levels school base need done in a way well one of them is eye science lessons. According to Arianty (2020: 159) stated that Natural Sciences (Science) is eye mandatory lessons for level school base for now and learn more in about nature. Science subjects are not just learning knowledge like memorize just but science teaches liveliness student in think learn symptoms nature. Objective student study eye science lessons according to the National Education Standards Agency (BNSP), namely expected student buffer apply understanding a definite science concept can give benefit in life daily. Therefore, that's one Science eye lesson that have concepts learning natural related universe with life humans (Kemendikbud, 2022).

Subjects Science at elementary school level is best held through interesting activity attention student in help understanding science concept. Understanding draft very related with eye science lessons. According to Nurwulan et al. (2023: 433) stated that understanding concept is capable abilities collected students so they can understand connection between draft so that can apply to solving problem. That matter similar with opinion women et al. (2021: 3) stated that understanding draft is ability student in express return material learning in more languages easy understand and can implement it returns. Based on the opinions of the researchers above so can conclude that understanding concepts is required competencies owned student for understand a number draft material taught and repeated return to in more shape easy understandable.

Understanding concepts own indicator in achieving it. As for indicator understanding of concepts according to Anderson, L., and Krathwohl (in Arianty et al., 2020: 160-161) stated that understanding of concepts can categorized as become seven cognitive processes which include: (1) Interpreting is change information in form other. (2) Giving an example (exemplifying) is giving example from something still a concept general. (3) Classifying is entered something to category certain. (4) Summarizing is making a statement that can represent the whole information. (5) Attractive

*Corresponding author: nur.fajrie@umk.ac.id

conclusion (inferring) is finding pattern from various example or fact. (6) Comparing known differences and similarities between two objects. (7) Explaining (explaining) constructing a cause-and-effect model in something system.

Based on explanation above show how importance understanding deep science concepts activity study teach to achieve it results satisfying learning. Science education is possibly become where the students are in matter Study For self yourself and nature around in life daily. One of causes of the science learning process at this level school base still Not yet maximum is because there are more teachers Like convey their knowledge in a way theory or knowledge just with method lecture. Besides that, lack of preparation plan learning to use appropriate learning models with needs in class.

Condition understanding draft Natural Sciences (Science) at level There is an elementary school (SD). Diverse level understanding learners. For example, there are a number of participants educating those who already succeed reach level understanding, while others may face obstacle when accept science concept. Understanding The concept of science in elementary school is influenced by various factors causes, incl method teaching, resources power available learning, and engagement student in the learning process. Science learning is necessary to use method teaching from a certain teacher innovative and inclusive so that capable give experience learn and help for understand optimal science concepts (ODN Jannah et al., 2023). Statement the supported by Wijanarko (2017: 52-53) who said that at the level Elementary school better using model or more strategy varied or not monotonous in order to optimize excitement Study student. Election methods, strategies, and approaches need studied in detail to determine a suitable learning model to eye appropriate science lessons with needs in class.

But in reality, when in the field of science learning at the level Elementary School (SD) still Not yet can reach objective expected learning. That matters because many problems were found in the field. Frequent problems occurred at SD Negeri 1 Mayonglor is an activity process study teaches science only there is a number of active students for ask to the teacher regarding material that is not yet available understood. Part big participant educate Not yet brave submit question because still there is a feeling of no believe self and doubt. Besides that, participant educate still seen passive in activity study in class. They just sit while listening to the explanation from the teacher. After it finishes explaining material, the teacher will ask to participant educate related existing material explained earlier. Participant educate seen hesitant moment answer question from the teacher, only there is a number of participants the student answered with loud and brave. If given question practice by the teacher, only a number of participants learn what you can answer with correct. Based on description the problem above shows that lots of students who don't have deep desires learn to eye science lessons. Besides that, they are lazy to submit questions to the teacher moment there is material Natural Sciences (Science) is difficult to understand. Even apart from they when learning to feel bored towards the learning model applied by the teacher. This causes students not enough to participate in a way active in learning so that often seen boring or boring. Based on the problems above and based on a number of sources, researchers try applying a learning model to overcome problem the. The model intended and used is "Cooperative Make a Match type."

According to Rusman (2018: 223) states the learning model cooperative the make a match type is a learning model that can increase Work The same between friend for look for compatibility between questions and answers related correct and appropriate concept with existing agreement decided previously. Learning model cooperative is system Study through cooperation between fellow friend through formation relative groups small or A little its members are around 4-6 people. Teachers in the learning model This only role as facilitator and create atmosphere active learning. There is a learning model cooperative. This can expand communication between fellow students for practice student in matter study work the same with good. Besides that, teaches that man is creature social meaning each other dependency with others and needs help others in undergo life. According to Tom V. Savage (in Rusman, 2018: 203) stated that "cooperative learning" in prioritize form Work The same in one group so can concluded that in matter this participant educates at level base very enjoy the world of play with her friend.

As for steps learning to make a match according to (Rusman, 2018: 223) is as follows: (1) The teacher prepares a number of cards that has been designed with interesting, card This containing a number of draft or appropriate topic desired material made in the make a match model where card the form card questions and cards answer. (2) After that the teacher distributes card the. Every student gets one card and then thinks about answering our question from the card he was holding. (3) Students look for partner card suitable answer with card the matter he holds. (4) Students who can match the card before the limit time will give points. (5) After one round, the card shakes again so that each student gets different cards from before and done in a way over and over again until all students get chance. (6) Interesting teacher conclusion from what's been learned at the meeting day This. Learning model cooperative make a match type can awaken curiosity and work the same between participant educate as well as capable create pleasant conditions. In matter this is what the teacher can do apply the learning model cooperative the expected make a match type can be influential to understanding science concept, so learning will more interesting, character active students will channel with well, then study for work together, interact fellow friends, and study think fast in accordance with time that has been agreed.

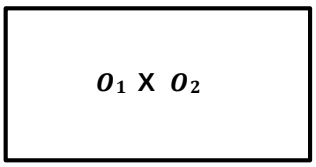
On occasion This researcher carries out something study regarding learning model's cooperative considered make a match type appropriate for applied to the eye's science lessons in particular material solar system. Formulation problem in study This is influence of learning models cooperative type make a match against understanding science concept for class VI SDN 1 Mayonglor? Objective study this is for now influence of learning models cooperative type make a match against understanding science concept for class VI SDN 1 Mayonglor.

2. Literature Review

According to study previously carried out by Melly Arianty et al. (2020) with title "The Influence of Learning Models Cooperative Type Make a Match against Understanding Class V School Science Concept Basic" results research show that from reliability obtained mark of 0.9108. Test result hypothesis using SPPS version 22, with level significant between Learning models Cooperative Make a Match with type understanding science concept. This matter obtained t count = 3.725 > t table 1.771 with sig = 0.001 < 0.05 and n = 30 indicates that hypothesis accepted. From the results study This can concluded that there is influence of learning models cooperative Make a Match type against understanding science concept. As well as study Afifah Nuralifiya laili et al. (2023) with title "The Influence of Learning Models Cooperative Type Make a Match against Understanding Science Concept for Class V Elementary School" shows that from results testing hypothesis show mark significant (2-tailed) of 0.000 and t table which is 0.05 then sig value. (2-tailed) ≤ t table or 0.000 ≤ 0.05. It means There is the influence of the make a match learning model assisted by diorama media on understanding student science material Class IV of SD Negeri 10 Muara Padang.

3. Methodology

Approach used in study This is quantitative namely research data form numbers and analyzed use statistics. Study quantitative there is method experiment is one of the methods used in for do test look for influence treatment towards others within controlled conditions. Steps in study necessary experiments emphasized are, (1) Existence significant problems for researched. (2) Election enough subject for shared in group experiments and groups control. (3) Manufacturing or instrument development. (4) Election design study. (5) Execution procedure data collection. (6) Doing data analysis. (7) Formulate conclusion (Laili et al., 2023). Type design study experimental use is pre- experimental. Design pre- experimental used is One pretest- posttest group (one group pretest-posttest). According to Sugiyono (2018) design model in form of one group pretest-posttest carried out on one group just without group comparison. Following this is one group pretest-posttest design.



O_1 = pretest action (before given treatment)

O_2 = posttest action (after given treatment)

X = treatment given

Fig. 1: One group pretest-posttest design model

The steps will be done in study This are, (1) Phase giving questionnaire initial (pre-test). At stage this a pre-test was carried out in the form of questionnaire understanding draft student before given learning media. If preliminary test results No give research result can next to stage next. (2) Phase giving treatment. Give treatment in class experiment in the form of a make a match learning model in the learning process for results understanding student in Study. (3) Phase giving action final (posttest). After that a posttest was carried out in class experiment form questionnaire in a way individual. Questionnaire this expected experience enhancement from results pretest questionnaire beforehand so that you can know is there is or or not influence use of the make a match learning model understanding draft student in science learning.

Population is all over the object to be researched. Population study this is all over There are 110 students at SD Negeri 1 Mayonglor, sample is part from population taken in a way representative or represent population. Sample study This is all over student class 6 of SD Negeri 1 Mayonglor, totaling 17 students (Sari et al., 2023). Data analysis techniques used in study this is statistics descriptive with carry out prerequisite tests that is data normality. According to Setyawan (2021) said that testing normality data distribution is one method purposeful normality for know what research data was obtained normally distributed. Criteria testing: data has spread normal distribution if number resulting significance bigger from 0.05 and in anything else the data is normally distributed. Analysis furthermore is with paired t test. According to Syafriani (2023) paired to test one method test used for study effectiveness treatment, marked exists the difference between the average before and the average after given treatment. The hypothesis studies this test how much big influence from the learning model cooperative the Make a Match type is limited understanding draft student class VI. Data said own influence if mark significance <0.05 then Ha is accepted, and Ho is rejected.

Hypothesis Study as following: (1) Ha : There is influence of learning models' cooperative type of make match assisted by card media eye sun to understanding draft learn science from students' class VI of SD Negeri 1 Mayonglor. (2) Ho: No there is influence of learning model's cooperative make a match type assisted by card media solar system used to understanding draft learn science from students' class VI of SD Negeri 1 Mayonglor.

4. Results

Evaluation understanding draft students' eyes science lessons using pretest and posttest results. The pretest aims for determine level understanding beginning students. Whereas the purpose of the posttest is for now can or whether there is a learning model or not cooperative type make a match with the help of card media eye sun can give influence understanding concept student in eye science lessons.

4.1 Capabilities Understanding Science concept.

Following summary of result data evaluation understanding science concepts in class VI that can be seen in table 1.

Table 1: Assessment Results Test Ability Understanding Science concept

No.	Intervals	Pretest		Posttest	
		F	%	F	%
1.	80 - 100	-	-	4	24%
2.	60 - 79	4	24%	13	76%
3.	40 – 59	13	76%	-	-
4.	20 - 39	-	-	-	-
Amount		17	100%	17	100%
Complete > 60		2	12 %	17	100%
No Completed < 60		15	88 %	-	-
Highest		70		90	
Lowest		40		63	
Average		53		76	

In table 1, it is obtained pretest and posttest results from results evaluation test ability understanding draft ipa student class VI which shows that pretest results showed 88% of children No complete with an average of 53.00. Temporary after given treatment using a learning model cooperative the make a match type is assisted by card media solar system results test understanding students' science concepts obtained an average of 76.00 with 100% of children complete in test.

4.2 Data normality

Using the initial and final data normality test, a prerequisite test was carried out prior data analysis t-test based data analysis. The following are results testing normality of the data is possible seen in table 2.

Table 2: Test Results Data Normality

	Kolmogorov-Smirnov [a]			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
before giving treatment	,094	17	,200 *	,965	17	,727
after giving treatment	,147	17	,200 *	,979	17	,945

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Using the initial and final data normality test, a prerequisite test was carried out prior data analysis t-test based data analysis. The normality test aim for now is mark test understanding science concepts obtained at the beginning learning (*pretest*) and final learning (*posttest*) is normally distributed. Using method *One Sample Shapiro-Wilk* and *the SPSS for Windows version program* 15.0, testing This done. Asymp value obtained from initial data normality test results. Pretest data from results mark test understanding students' science concepts normally distributed if *Sig (2-tailed)* bigger of 0.05 or 0.727. Temporarily, obtained mark Asymp from final data normality test results. *Sig (2-tailed)* bigger or the same with mark significance of 0.05 or 0.945 indicates that the posttest data results score test students science concepts distribute normal.

4.3 Paired T Test

The results of the pretest and posttest data will be analyzed with the T test using SPSS 15 application for know what the learning model cooperative type is *make a match* supported by card media solar system used influence understanding draft science student class VI at SD Negeri 1 Mayonglor. Hypothesis statistics study This is: (1) Ha : There is influence of learning models' cooperative type of make match assisted by card media solar system to understanding draft leam science from students' class VI of SD Negeri 1 Mayonglor. (2) Ho: No there is influence of learning model's cooperative

make a match type assisted by card media solar system to understanding draft learn science from students' class VI of SD Negeri 1 Mayonglor.

T test calculation, Ha is accepted if mark count bigger from t table or mark significance smaller from 0.05. Conversely, Ho is accepted, and Ha is rejected If calculated t value smaller from t table or bigger from 0.05. The calculation results *Paired Sample T-Test* using SPSS 15 you can be seen in table 3.

Table 3 *Paired Sample Test*

	mean	Std. Deviation	t	df	Sig. (2-tailed)
Pre-post test	-22.000	4.093	-22.896	16	0.000

Based on Table 2, results from hypothesis testing *Paired Sample T-Test* use SPSS 15 application which shows mark *Sig.(2-tailed)* namely 0.000 < 0.05, then Ho is rejected, and Ha is accepted. So, you can with drawn conclusion that exists the influence of learning models cooperative type *make a match* assisted by card media solar system used to understanding students' science concepts class V of SD Negeri 1 Mayonglor.

5. Discussion

The results of existing research done show exists influence use of learning models cooperative type *make a match* assisted by card media solar system used to understanding science concept. This matter proven with difference the average pretest score is 53 and the average posttest score is 76. The posttest average is clearly taller than the pretest average on the results test understanding science concept. With use help SPSS 15 application, hypothesis testing *Paired Sample T-Test* produce mark *Sig*. (2-*tailed)* is 0.000, meaning <0.05 which shows that Ha is accepted, and Ho is rejected. This matter show that learning model cooperative type *make a match* assisted by card media solar system used influential to understanding students science concepts class VI of SD Negeri 1 Mayonglor (Nurwulan et al., 2023).

Learning model cooperative type *Make a Match* is one of the learning models that can be done increase activity study student. Atmosphere Study can make student Study more active and fun, developing attitude cooperation and can increase results Study. Where is one advantages of the cooperative model type *Make a Match* that is student look for partner between card questions and cards appropriate answer with topic learning. Student can Study while play so this model own connection tightly with characteristics student elementary school that is student can study while play (Maulida et al., 2020).

Findings study this in line with study Melly Arianty et al. (2020) who explain that taught students with a learning model cooperative type *Make a Match* better than taught students with a learning model conventional so that influence understanding students science concepts in a way significant. A similar thing stated by Afifah Nuralifiya laili et al. (2023) which is based on findings his research concludes that use of learning model's cooperative makes a match type has an impact on understanding student science concept. This matter showed with t test results show that mark significant (2-tailed) of 0.000 and t table which is 0.05 then sig value. (2-tailed) ≤ t table or 0.000 ≤ 0.05, then H_o is rejected and Ha is accepted. It means There is the influence of the make a match learning model on understanding science concept.

Based on t test results hypothesis and research previously show that student own understanding more science concepts good after using a learning model cooperative type *Make a Match* with card media help eye sun compared to before using a learning model cooperative with card media help eye Sun. This matter because of the learning model cooperative type *Make a Match* can help student in understand material about solar system. Besides that, students expected role active intertwine work the same in the learning process and take responsibility answer to member group other. One member group responsible answer for teach less members understand with material that is not clear, but they will each other help. According to Arianty (2020) model learning cooperative type *Make a Match* demand student for active study, work the same in groups, and share his knowledge to friend his peers.

According to theory developed by Rusman (2018), learning model cooperative type *Make a Match* is a learning model that can increase work the same between friend for look for compatibility between questions and answers in accordance material the lesson with existing agreement decided previously. Learning model cooperative is system study through work the same between fellow friend through formation relative groups small or A little its members are around 4-6 people. Make a match learning aims for develop attitude responsible answer each other respect, and also increase trust self-student in finish something problem. Learning this is also demanding student for more active in learning compared to with teachers so teachers only role as facilitator and observer. Atmosphere moment learning besides It's also fun to try nature democratic, where student given freedom for convey his opinion or ask If some have n't understandable (Rusman, 2018).

Learning model cooperative type *Make A Match* potential increase a sense of responsibility answer student for discuss with fellow member the rest of the group to find it the most appropriate answer (Arianty et al., 2020). Learning model cooperative type *Make a Match* started with every student competing to represent his team with member team

against for look for card the answer in accordance card about what he received. After that, students return to groups and take turns with other members as a representative of the group to find the right answer. All members of the group will feel for find card answer in accordance card the matter card he holds. After all member group find card the answer. They will do discussion group for convincing is card questions and cards answer from each member Already Correct.

The process of implementing the cooperative model type *Make a Match* naturally with card media solar system to help student more understand content science. According to Rosimasnita (2021) claim that card media solar system used as tool For channel message from source to receiver through five senses. Cards consist of card questions and card answers. Card question Can shaped supporting questions and images the question. Whereas card answer can shape answer from questions and the image that represents it answer the. With thereby can concluded that use of learning models cooperative type *Make a Match* influential to understanding students' science concepts class VI of SD Negeri 1 Mayonglor.

6. Conclusion

Based on results research and data analysis shows that student class VI of SD Negeri 1 Mayonglor more capable understand science concept if learning model is used cooperative type assisted Make *a Match* with use of card media solar system. This matter determined with sample t-test pairs that show that *pretest* average score is 53, whereas The average *posttest* score is 76. From the results test understanding science concepts appear to be average *posttest* taller from *the pretest* average. Furthermore, done testing t-test hypothesis ie *paired t* test obtained at level significance of 0.05 indicates that mark significance is 0,000. Because sig value (2-tailed) < 0.05, namely sig = 0.000 < 0.05, meaning Ho is rejected and Ha is accepted. So that can say that hypothesis in study this says it that There is influence of learning models cooperative type make a match against understanding draft learn science from students Class VI of SD Negeri 1 Mayonglor was accepted because already tested the truth.

Reference

Arianty , M., Suparman , T., Ds, YN, Buana , U., & Karawang , P. (2020). The Influence of Learning Models Cooperative Type Make a Match against Understanding Elementary School Class V Science Concept . *IJPSE: Indonesian Journal of Primary School Education* , *1* (1), 159–167. https://doi.org/10.36805/ijpse.v1i1.60

Nurwulan , DA, Ardianti , SD, & Fajrie , N. (2023). The Influence of the Teams Games Tournament Model Assisted by Ethno-Puzzle Media on Understanding Science Concepts for Class V Students. *As- Sabiqun* , *5* (2), 431–440. https://doi.org/10.36088/assabiqun.v5i2.2941

Palimbong , SM, Pompeng , ODY, & Widia, W. (2022). Influence application letter announcement electronic (e - spt) tax period increase value (VAT) against obedience must tax. *Accountable* , *19* (2), 475–481. https://doi.org/10.30872/jakt.v19i2.11169

Annisa , V., Fajrie , N., & Ahsin , MN (2021). Application of the Problem Based Learning Model Assisted by Illustrative Image Card Media For Increase Understanding Draft Class IV Elementary School Students. *WASIS: Journal Educational Sciences* , *2* (1), 1–8. https://doi.org/10.24176/wasis.v2i1.4951

Ministry of Education and Culture . (2022). Knowledge Knowledge Nature and Social (IPAS) SD-SMA. *Freedom to Teach*. https://guru.kemdikbud.go.id/kurikulum/reFER-penerapan/capaian-pembelajaran/sd-sma/ilmu-knowledge-alam-dan-social-ipas/

ODN Jannah, N. Fajrie , & D. Kurniati . (2023). Ability Understanding Draft Ipa Use Application of the Probing-Prompting Learning Model Using Game Media Marbles. *PENDASI Indonesian Journal of Basic Education* , *7* (2), 251–262. https://doi.org/10.23887/jurnal_pendas.v7i2.2435

Sahid Raharjo . (2021). *Analysis of research data experiment*. 87–88.

Viera Valencia, L. F., & Garcia Giraldo, D. (2019). Practical Instructions for Normality & Homogeneity of Data Using SPSS. In Angewandte Chemie International Edition, 6(11), 951–952. (Vol. 2).

Wijanarko, Y. (2017). Make a match learning model . *Garden Scholars Journal* , *01* (01), 52–59.

Yusri, A. Z. and D. (2020). Research Methodology. Journal of Educational Sciences, 7(2), 809–820.

Laili, AN, Rohana , & Dedy, A. (2023). The influence of the make a match learning model assisted by diorama media on understanding material ipa student Class IV of SD Negeri 10 Muara field. *Pendas: Journal Elementary Education Science* , *8* (3), 2548–6950.

Sari, J., Feniareny , F., Hermansah , B., & Prasrihamni , M. (2023). Influence of Concrete Media To Understanding Draft Student In Science Learning in Elementary Schools. *Journal Education and Learning Innovation Elementary School* , *7* (1), 15. https://doi.org/10.24036/jippsd.v7i1.120317

Rosimasnit , R. (2021). Use of Card Media In Increase Skills Read Beginning Student. *PAJAR JOURNAL (Education and Teaching)* , *5* (1), 188–193. https://doi.org/10.33578/pjr.v5i1.8265

Maulida, IS, Rahayu, DW, Hidayat, MT, & Kasiyun, S. (2020). Analysis The Influence of Learning Models Cooperative Type of Make a Match on Learning Outcomes Students in Learning Ips Sd. *School Education Journal Pgsd Fip Unimed*, *10* (1), 82. https://doi.org/10.24114/sejpgsd.v10i1.18133

Sumini, S. (2022). Increasing Student Activities and Learning Outcomes Through Make a Match Type Cooperative Learning at Sdn 001 Kempas Jaya. Primary: Journal of Elementary School Teacher Education, 11(4), 1258. https://doi.org/10.33578/jpfkip.v11i4.9076