



## Effect of Cooperative Learning Type of Make a Matcha with Qrbarcode Scanner (Mama Q Corner) Media on Cooperation Skills and Learning Results of Social Studies Students in Sixth Grade Elementary School

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### **Abstract**

The purpose study was to determine the effect of cooperative learning type make a match with the QR barcode scanner (MAMA Q CORNER) on cooperation skills and social studies learning outcomes of sixth grade elementary school students, the material to analyze the position and role of Indonesia in cooperation in the economic, political, social fields, culture, technology, and education within ASEAN. This study uses a quantitative descriptive approach. This type of research used a quasi-experimental pretest and posttest control group. The research subjects were 21 students in the experimental class at SD Negeri Bendo Bojonegoro, while the control class consisted of 19 students at SD Negeri Mojoranu Bojonegoro for the academic year 2021/2022. The research variables are cooperative learning model type make a match, qr barcode scanner, collaboration skills and student learning outcomes. The research instrument used was observation sheets, and learning outcomes tests. The analysis technique is normality test, homogeneity test of SPSS software. The results showed that the use of the make a match type of cooperative learning method with qr barcode scanner could improve collaboration skills in groups. The level of achievement of cooperation scores on average is 90% very satisfactory criteria, while the average increase in learning outcomes is 68% in the good category, with a significant Sig. (2-tailed) shows 0.018 less than 0.05 so it can be concluded that there is a difference in influence between the experimental class and the control class.

**Keywords:** *Cooperative Make a Match; QR Barcode Scanner; Cooperation Skills; Learning Outcomes*

### **Introduction**

In this 21st century learning, there have been many changes, especially the development of science and technology, with a very easy internet access system. The concept of 21st century learning is one of the digital transformations in the use of technology in the transformation of education which always puts the ethics, aesthetics and character of students first. The concept of digital learning can

encourage and develop students' abilities to communicate, collaborate and think logically, critically and creatively. An ability or skill that is expected in 21st century learning is known as 4C, including Communication, Collaboration, Critical Thinking, Creative Thinking, which later developed into 6C with the addition of Citizenship and Character Education (AR. Kennismi Afif, 2021: 285).

With these 21st century skills, students are expected to be able to communicate effectively both orally and in writing, be able to work together, synergize and adapt anywhere with anyone in a responsible and productive manner. Students are also expected to be able to think critically, reason logically, find the best alternative solutions in solving problems, and be able to develop and create new ideas that result in new discoveries. Students are also able to find their identity according to their behavior, thoughts and feelings which are based on morality and integrity. And last but not least, students have a sense and attitude of patriotism towards the nation and have a national identity.

Learning Social Sciences in elementary school seems tedious and boring. This is evident from the test results of class VI students, who did not meet the KKM, namely from the number of students 21, there were 9 students or 42.8% who scored below the KKM, while 12 students or 57.2% achieved the KKM score. The results of the interview on February 22, 2022 that social studies learning activities are still teacher-centered with the most practical lecture method, because of the large number of materials in social studies learning, so choosing the lecture method combined with a series of notes that must be memorized by these students is the most appropriate. The lecture method makes students lazy to read and think to find content and understand the learning material. The application of the lecture method also causes a lack of student activity in teaching and learning activities. The activities of students are less visible in the activities of gaining knowledge, only focusing on the results, not the process. Learning activities carried out by an educator only explain, students take notes and work on worksheets so that most students feel lazy and consider social studies learning difficult, because learning activities only listen to an educator's explanation without any feedback. Students are less responsive to questions given by an educator, and students are also still shy and afraid to express their opinions so that learning seems passive. Students are busy with their own activities, daydreaming, disturbing their classmates because learning in class is not interesting so there is no interest in learning. Educators, in this case a teacher, should be aware of the needs in the learning process that must be considered.

Teaching and learning activities require students to have social interactions with other students, with the teacher, therefore students need to be equipped with skills about social skills. The need for social skills in students so that they are more courageous in their opinions to solve the problems they face and obtain the best problem solving for the common good. Teamwork in groups that can develop social skills. Teaching good skills can equip and train students in social life.

Social studies learning is not only rote, and trains students' memory. Social studies learning should develop abilities in knowledge, attitudes, and skills by students. Social studies learning is related to social skills, events, facts, concepts, and generalizations. Geography, history, sociology, and economics are social studies material. Based on these problems, humans need meaningful learning. An educator should develop their competence, be creative and innovative to utilize learning methods and media in learning activities. The ability of an educator in learning to determine learning resources, media and learning methods that can foster students' critical, creative thinking, communication and collaboration, honest,

In the learning teacher program, researchers try to play an active role by learning, teaching using these sophisticated scientific and technological abilities, even though they have to learn to hobble to master these abilities in order to welcome the learning of 21st century skills in this 4.0 industrial revolution era. With the educational goals to be achieved, namely critical thinking, creative, communication and collaboration, which are expected and must be possessed by students in the current

era so that they are relevant to the competency skills of the 21st century. It is innovative teaching that can develop students' reasoning and high-level thinking, not only memorization and memory are expected.

The fact in the field is that there are some educators who do learning without media and learning resources and learning methods that are less attractive. Learning activities are more effective if educators use appropriate strategies in interacting with their students, so that students are not bored in teaching and learning activities in the classroom. Social studies material is also less interesting for students, because the material is too broad and abstract for them, so that student achievement is not good. Student learning activities are minimal because learning is more focused on educators. Educators choose to apply this method, because it is easier to convey material without the need for practical tools and materials, only providing explanations of concepts in books. This learning method makes students not have the ability to do their own learning and understanding to find knowledge. The result of this fact is the low learning outcomes of students in social studies subjects.

While learning activities are expected to improve the skills of students for cooperation and get good learning achievement, so that learning objectives can be achieved. The above problems are also felt during teaching at SDN Bendo, Kapas District, Bojonegoro Regency, such as low learning achievement and in the learning process an educator does not use learning media as seen from the results of grade VI scores that do not meet the standard in the minimum completeness criteria (KKM) which is 75. If educators give direct questions to students, many students rarely answer, so students avoid answering by asking other friends to answer, if they have to answer then students' answers tend to be short answers, as long as they answer,

When students discuss in class, only 2 or 3 students participate in group discussions well, other group members are playing, some are joking with other friends and some are laying their heads on the table. Educators often remind to work together but students do not pay attention to the direction of the teacher. At the time of presentation of the results of the discussion, the students who dominated the most were students who did their group assignments, while students who were engrossed in activities outside of learning did not follow the discussion well.

From the results of observations, it can also be concluded that the ongoing learning process still focuses on the teacher as an educator and educators at the time of teaching have not utilized learning methods and media that can increase the enthusiasm of students in learning. The activities of students are just sitting, listening, and taking notes on the teacher's explanation so that it does not involve students in the process of teaching and learning activities. Student learning activities are less visible during the teaching and learning process. Students do not dare to ask questions, do not dare to express opinions, as well as when asked a question by an educator. Most students do not try to argue if there are questions. Another problem from the observations, students still do not have social skills, it is proven that the lack of social skills is in communicating which can be seen from the activities of students in asking questions, expressing opinions, lack of participation in collaboration, and sharing skills in working in groups.

Social studies learning as above does not find events and facts related to social problems from everyday human life, even though learning now uses scientific learning where students are required to think scientifically to face today's modern times to find events, facts, concepts and generalizations that students need for life in the future.

The cooperative skills of students are one of the factors in the success of learning. The low level of cooperation skills can affect the results obtained in learning. Efforts to improve learning outcomes by improving students' collaboration skills in learning. Collaboration can grow if in the given learning process there is interaction between members in the group to achieve common goals. An educator is expected to create learning situations that can make students work together in teams to obtain learning outcomes as desired. Applying a cooperative learning model that is fun for students and supported by

interesting learning media, is the right way for students to succeed in learning achievement. Interesting learning media today is the use of internet and android-based media, because there are interesting things and there is an element of excitement with the assumption that elementary school age students are more likely to learn while playing, thus triggering students to learn so that learning outcomes can increase.

One alternative learning improvement that must be done by an educator is the use of appropriate models according to the material and characteristics of students so that students have the enthusiasm and desire to learn, be creative in their work, critical in thinking, and achieve learning goals to the fullest. If the model applied by an educator is fun, then students feel at a loss if they do not follow the lesson. One way that an educator does is by applying the Make a Match type of cooperative learning model by using the QR Barcode Scanner (MAMA Q CORNER) media which improves skills in collaboration, and increases learning outcomes.

The reason why choosing the Make a Match type of cooperative learning model in finding a partner according to the specified time is one of the models in cooperative learning that involves active students in the learning process and has cooperative skills so they will be very impressed in their memory because students experience directly and train students to work in teams, which are assisted by the media QR Barcode Scanner which functions as a reader of question codes made based on IT, (MAMA Q CORNER) based on its advantages which can overcome the problem of the number of students who are not active and do not participate in the learning process at school. class so that the motivation of students in learning decreases and the learning outcomes obtained by students become low. Using the MAMA Q CORNER approach model will make students more active and foster a sense of togetherness, as well as confidence in carrying out classroom learning, so that the class becomes active and educators can become facilitators and motivators in learning with the help of QR Barcode Scanner media designed by educators which is used when applying the Make a Match type cooperative learning model in the classroom. so that the class becomes active and educators can become facilitators and motivators in learning with the help of QR Barcode Scanner media designed by educators that are used when implementing the Make a Match type cooperative learning model in the classroom. so that the class becomes active and educators can become facilitators and motivators in learning with the help of QR Barcode Scanner media designed by educators that are used when implementing the Make a Match type cooperative learning model in the classroom.

The advantages of the Make a Match type of learning model are that students are more active, experience the learning process firsthand, establish cooperation and an attitude of helping and togetherness, and also the learning process takes place in a pleasant atmosphere because of playing techniques, so interest and motivation students to learn and explore a material is increasing. Meanwhile, the disadvantages of this Make a Match type of learning model are that it requires a relatively long time, the class atmosphere becomes noisy, crowded and noisy. Besides that, there are other weaknesses that require more time, energy and the mind of an educator, namely having to prepare materials and tools in such a way that learning is more interesting. And always need the guidance of educators in every game technique,

To overcome the weakness of the Make a Match type, the research utilizes one of the media based on the Android QR Barcode Scanner. This alternative with media aims to help students understand the subject matter and improve critical thinking, creative, communication, and collaboration by working in teams to scan barcodes related to the subject matter being taught. The syntax of the Make a Match type group learning is group learning by matching or looking for pairs where students have a lot of difficulty in discussing problems, comparing answers, checking, and matching the concepts on the answer cards and question cards. If there are groups that have not been able to find partners or make mistakes it will take a long time to gather information and understand lessons and formulate conclusions. Through the QR Barcode Scanner media this can be overcome because with this media, students feel relaxed learning, without feeling able to match the concepts of the question and answer cards with enjoyment and work

together in teams, because with this kind of learning, students are trained to critical thinking, creative, communication, and collaboration that can lead to learning motivation, as well as teamwork skills because they use media in the form of games (games).

## Methods

The quantitative approach used in this research, which is an approach to test the theory by referring to the relationship between variables. While the data obtained using the instrument in the form of numbers, and numerical data processed through statistical methods (Cresswell, 2014:4). Certain data collection techniques that produce data in the form of numbers are used in this quantitative study. Measurement of variables and proper hypothesis testing are emphasized in the quantitative approach (Neuman, 2003: 187). The characteristics of the quantitative approach are: (1) objective fact-based measurement; (2) focus on variables; (3) researchers are objective.

The type of research used in this study is an experimental type of research, namely quasi-experimental research used in this type of research, which is a research procedure with a non-random sample selection process, and pre-formed natural groups such as class, organization, or family (Creswell, 2014: 168). The quasi-research technique is done by comparing objects to determine the influence and magnitude of the effect after certain treatment is held (Arikunto, 2013:77).

Nonequivalent design (pretest and posttest) control group design that will be used in the design of this study. The selection of the experimental group and the control group in this research design was done randomly (Sugiyono, 2016: 170). Creswell (2014:172) states that in non-equivalent control group design research, the experimental group, and control group, participated in the pretest and posttest, but only the experimental group received treatment. The quasi-experimental research design is the Pretest-Posttest Control Group Design as stated by Sugiyono (2016:170) as shown in the table below.

Table 1. *Pretest-Posttest Control Group Design*

O1	X	O2
O3	-	O4

Information:

O1 : pretest, to the experimental group.

O2 : posttest, to the experimental group.

O3 : pretest, against the control group.

O4 : posttest, against the control group.

X: a treatment of the experimental group using the MAMA Q CORNER model.

The researcher chooses the experimental class research design at SD Negeri Bendo with the consideration that many students at SD Negeri Bendo, Kapas District, in the previous study received scores below the minimum completeness criteria, lack of cohesiveness in collaboration in study groups and the level of material difficulty.

The study began by conducting a pretest in two groups to determine the initial conditions of the research subjects. Furthermore, given special treatment in the experimental group, using a cooperative learning model of Make a Match type assisted by a QR Barcode Scanner (MAMA Q CORNER) while the control group continued to use the lecture method with memorization techniques. The final stage is done by giving a posttest to the control group, as well as the experimental group. Giving pretest, and posttest, done online using the Google Forms application. The online method of data collection is carried out in accordance with government policies as an effort to prevent the spread of COVID-19. Learning activities are carried out semi-offline with limited face-to-face meetings and online without reducing student learning activities.

The material to be taught is carried out online with the Google Meet application. The google meet application facilitates active communication between students and educators. The google meet application allows educators to provide explanations in the form of slides and face to face directly, students also easily ask questions, express opinions and discuss via the screen. During the learning process, the researcher conducted observations on the collaboration skills of students. To measure the level of success in the learning process, educators form groups of 4 students, then explain the instructions and group assignments, then give a card, namely questions and answers to each group., to scan the barcode on the question card and answer card.

The research data were analyzed statistically through test techniques. Hypothesis testing uses a significance level of 5%. Before the t-test analysis was carried out, the assumptions were first tested, namely normality and homogeneity tests. The normality test used the Kolmogorof Smirnov formula and the homogeneity test used the one way ANOVA formula. Analysis of hypothesis testing in this study using independent sample t-test.

### **Result and Discussion**

Before being used for research, the instruments used were validated by expert validators. The results of the validation by the validator are presented below:

Table 2. Results of Research Instrument Validation by Expert Validators

No.	Validated instruments	Score			Predicate
		V1	V2	Average	
1.	Learning Syllabus	90.6	92.0	91.3	Very valid
2.	Learning Tool Plan	90	95	92.5	Very valid
3.	Teaching materials	90	88	89	Valid
4.	Computer Based Learning Media	91.7	89.4	90.5	Valid
5.	Student Worksheet (LKPD)	87.1	95.2	91.1	Very Valid
6.	Observation of Cooperation Skills	90	95	92.5	Very Valid
7.	Study Results Test Sheet	86	86	86	Valid

Description: V1 = Expert Validator 1; V2 = Expert Validator 2

Based on the table above, it can be stated that all research instruments assessed by expert validators in their fields are declared eligible to be used as instruments to collect research data. SPSS is one of the programs used to test the normality of data distribution. According to the opinion (Prayitno, 2014), that the test criteria if the significant value is 0.05 then the data is said to be normally distributed.

Furthermore, before testing the hypothesis, a normality test was carried out. Here is presented the results of the normality test of learning outcomes data are as follows

Table 3. Normality test of learning outcomes observation

Class	Test	Statistics	df	Sig.
<b>Experiment Class</b>	pretest	945	19	3.23
	posttest	821	19	0.02
<b>Control Class</b>	pretest	837	19	0.04
	posttest	684	19	0.00

From the results of the Kolmogorov Smirnov and Saphiro Wilk test, the normality of the experimental pretest class data, the normal distribution is above 0.05 (0.323), while the control pretest, control posttest and experimental posttest are not normally distributed because they are below 0.05 (0.04;0.02;0.00).

Sundayana (2014) explains that the homogeneity test is useful for the similarity or homogeneity of several data population variants. Test the homogeneity of learning outcomes data using the SPSS software application. The results of the homogeneity test are described in the following table.

Table 4. Results of the Validity Test of Learning Outcomes

Variable	Test	Levene Statistics	Df1	Df2	Sig.	Data Variants
Learning outcomes	pretest	2377	1	38	0.131	Homogeneous
	posttest	156	1	38	0.695	Homogeneous

The results of the homogeneity test between the experimental and control classes were homogeneous because they were above/greater than 0.05 (0.131;0.695). The homogeneity test used Levene's test with the help of SPSS, with significant results criteria above 0.05. The results of this test are said to be homogeneous because they are in accordance with the criteria.

Students' cooperation skills can be observed before treatment and during treatment with the aim of knowing the level of success. There are three indicators used in the assessment of cooperation skills. Cooperation skills are said to be complete, if the average obtained by students is at least 75 according to the criteria for the minimum school completeness criteria, and reaches the classical value of 75%. The following results of the data analysis of Cooperation Skills Observation can be shown in the table below.

Table 5. Results of Observation Data Analysis of Cooperation Skills

Class	Test	Teamwork Skills Component Score (%)			Average
		Participate	Share	Responsibility	
Experiment	Observation 1	66	66	66	66
	Observation 2	100	100	100	100

Based on the results of the observation data analysis of students' cooperation skills before giving treatment and after giving treatment there was an increase, this shows that the Make a Match type cooperative learning model with QR Barcode Scanner media has an effect on students' cooperation skills.

The data from the analysis of student learning outcomes was obtained from the pretest and posttest activities. Learning outcomes data from the pretest were collected before learning with a cooperative model of make a match type assisted by qr barcone scanner in the experimental class and conventional learning with memorization techniques in the control class. Meanwhile, the analysis data of the students' posttest results were collected after the treatment activity with a cooperative model of make a match type assisted by a qr barcode scanner and conventional learning of memorization techniques in the control class.

Students who get a score of 75 and based on the minimum completeness criteria (KKM) are declared complete in learning outcomes. Analysis of learning outcomes can be described in the following table.

Table 6. Results of Data Analysis of Student Learning Outcomes

Class	Test	Percentage%	
		Complete	Not Completed
Experiment	pretest	38	62
	posttest	100	-
Control	pretest	58	42
	posttest	79	21

In this study using statistical analysis techniques, namely by comparing the distribution of data from two different groups, the experimental class and the control class. Based on the results of data

analysis, the hypothesis test in this study used an independent sample t-test, because the samples were different.

The results of hypothesis testing on student learning outcomes were carried out in the pretest and posttest activities of the experimental class and control class. From the data obtained that the data is not normally distributed and the number of students is less than 30, then the data analysis uses the Mann Whitney non-parametric difference test. In the pretest, the Mann Whitney test was carried out with the aim of measuring the similarity between the experimental class and the control class before treatment. While in the posttest, the Mann Whitney test was carried out with the aim of knowing the difference in the effect between the experimental class and the control class after the treatment was given. The results of hypothesis testing based on pre-test and post-test data on student learning outcomes are as follows.

Table 7. Results of Pretest Hypothesis Testing Learning Outcomes with Mann Whitney

#### Ranks

	Class	N	Mean Rank	Sum of Ranks
pretest	1.00 experiment	21	17.45	366.50
	2.00 control	19	22.97	413.50
	Total	39		

#### Test Statistics

	pretest
Mann-Whitney U	135,500
Wilcoxon W	366,500
Z	-1.542
asympt. Sig. (2-tailed)	.123
Exact Sig. [2*(1-tailed Sig.)]	.133b

Table 8. Results of Hypothesis Testing Posttest Learning Outcomes with Mann Whitney

#### Ranks

	class	N	Mean Rank	Sum of Ranks
posttest	1.00 experiment	21	24.60	516.50
	2.00 control	19	15.97	303.50
	Total	40		

#### Test Statistics

	posttest
Mann-Whitney U	113,500
Wilcoxon W	303,500
Z	-2.364
asympt. Sig. (2-tailed)	.018
Exact Sig. [2*(1-tailed Sig.)]	.019b

a. Grouping Variable: class

b. Not corrected for ties.

The analysis of the Mann Whitney test results in tables 4.16 and 4.17 shows that the post-test results are significant sig. (2 -tailed) with a result of 0.018 which means the number is less than 0.05, so it can be concluded that there is a significant difference between the experimental class and the control class and  $H_a$  is accepted.

Based on the results of the analysis, it can be concluded that the use of the Make a Match type cooperative learning model with QR Barcode Scanner media has a significant effect on the learning outcomes of sixth grade elementary school students.

One of the objectives of this study was to determine the effect of the Make a Match type cooperative learning model with QR Barcode Scanner media on cooperation skills and learning outcomes of sixth grade elementary school students. Cooperation skills are skills that must be possessed by students in teams, so that a job or burden becomes lighter. Teaching cooperation skills to students, can equip students in social life. Indicators of cooperation skills include skills to participate, share and be responsible.

Learning with the Make a Match type cooperative model with the QR Barcode Scanner media can affect the level of cooperation skills of students in group learning, as seen from the results obtained with scores above 75%.

The implementation of this type of learning model has many advantages as developed by Loma Curran in 1994 (Huda, 2011:135) that group learning by playing looking for pairs is very fun and memorable for students so that they can increase the value of collaboration skills by collaborating in determining the right partner.

This research activity aims to determine the effect of learning with the Make a Match type cooperative learning model with QR Barcode Scanner media on Social Studies Learning Outcomes for class VI SD. The analysis of the results showed that there was a greater influence on the experimental class using the Make a Match type learning model with QR Barcode Scanner media obtained from the results of the posttest average score of 69% in the good category.

Based on the results of data analysis showed that the increase in the results of the pretest and posttest scores with the help of the SPSS Mann Whitney test, increased the average value of 68% in the good category, after receiving the make a match type learning model treatment with qr barcode scanner media. According to the graphic data above, the value of students also experienced various increases in accordance with research conducted by Royani, Peni. 2020 in the title The Effect of the Cooperative Integrated Reading and Composition (CIRC) Cooperative Learning Model Assisted by Mind Mapping Techniques to Improve Social Skills and Social Studies Learning Outcomes for Grade V Elementary Schools. The research was conducted before the treatment, the students obtained scores below the specified school criteria. Students are also still not motivated in learning so that the results cannot be maximized.

The implementation of the make a match type of cooperative learning model is very fun for students, because without any element of compulsion, they are invited to learn while playing in understanding and finding concepts and matching the right pair with a predetermined time limit. With fun learning, which was originally tedious and boring social studies material because it was full of rote methods, now it becomes more interesting for students.

The use of android-based media also triggers the enthusiasm of students in learning, they are engrossed in scanning barcode codes then understanding and instilling the concepts in the barcode and then looking for answers or expected pairs of cards. Barcode scans are also time-limited, so students are trained to be disciplined in managing time.

## Conclusion

Based on the description above and the results of the analysis that has been carried out, it can be concluded that: 1) There is an effect of the Make a Match type cooperative model with the help of QR Barcode Scanner media on the cooperation skills of sixth grade elementary school students from the results of observations that the average score of 90% with very satisfactory criteria. 2) There is an effect of the Make a Match type cooperative model with the help of QR Barcode Scanner media on the social studies learning outcomes of sixth grade elementary school students, an average 68% increase in learning outcomes in the good category, and with a significant Sig. (2-tailed) shows 0.018 less than 0.05 so it can be concluded that there is a difference in influence between the experimental class and the control class.

## References

- Aliputri, D. H. (2018). Penerapan Model Pembelajaran Kooperatif Tipe Make A Match Berbantuan Kartu Bergambar Untuk Meningkatkan Hasil Belajar Siswa. *Jurnal Bidang Pendidikan Dasar*, 2(1A), 70-77. <https://doi.org/10.21067/jbpd.v2i1A.2351>.
- Anggarawati, I. G. A. A., Kristiantari, M. R., & Asri, I. G. A. S. (2014). Pengaruh Make a Match Berbantuan Media Kartu Gambar Terhadap Hasil Belajar IPS SD. *Mimbar PGSD Undiksha*, 2(1). <https://doi.org/10.23887/jjgsd.v2i1.2146>.
- Anggraeni, A. A. A., Verylana, P., & Fatkhur, I. F. R. (2019). Pengaruh Model Pembelajaran Kooperatif Tipe Make A Match terhadap Motivasi dan Hasil Belajar Matematika. *International Journal of Elementary Education*, 3(2), 218–225. <https://doi.org/10.23887/ijee.v3i2.18552>.
- Afif, K., Sunismi., & Alifiani. (2021). Pengembangan Bahan Ajar Interaktif Bermuatan 6C (Critical Thinking, Creative Thinking, Collaboration, Communication, Character, Dan Citizenship) Pada Materi Pola Bilangan Kelas VIII. *Jurnal Penelitian, Pendidikan, dan Pembelajaran*, 16(1), 284-293.
- Astika, N., & Nyoman, N. A. (2012). Efektivitas Model Pembelajaran Kooperatif Tipe Make A-Match Terhadap Hasil Belajar Siswa. *Jurnal Penelitian Pembelajaran Fisika*, 3(2), 110-117. <https://doi.org/10.26877/jp2f.v3i2/SEPTEMBER.346>.
- Dewi, K. M., Putra, I. M., & Manuaba, I. B. S. (2013). Pengaruh Model Pembelajaran Kooperatif Tipe Make a Match berbantuan Media Grafis terhadap Hasil Belajar IPS Siswa Kelas V SDN 18 Pemecutan. *MIMBAR PGSD Undiksha*, 1(1). <https://doi.org/10.23887/jjgsd.v1i1.1556>.
- Dewantari, K., Mustaji, M., & Fatirul, A. N. (2021). Pengaruh Model Pembelajaran Daring dan Luring serta Kemampuan Awal Terhadap Hasil Belajar Siswa pada Mata Pelajaran TIK SMP. *JUPI: Jurnal Ilmiah Penelitian dan Pembelajaran Informatika*, 6(2), 219-228. <https://doi.org/10.29100/jupi.v6i2.1975.g1023>.
- Fadhilah, N., Mustaji, M., & Jannah, M. . (2021). Pengaruh Media Roda Putar Terhadap Kemampuan Mengenal Pola Dan Motorik Halus Anak Usia Dini. *Cetta: Jurnal Ilmu Pendidikan*, 4(3), 644–658. <https://doi.org/10.37329/cetta.v4i3.1479>.
- Fadhilah, N., Mustaji, M., & Jannah, M. (2021). Pengaruh Media Roda Putar Terhadap Kemampuan Mengenal Pola Dan Motorik Halus Anak Usia Dini. *Cetta: Jurnal Ilmu Pendidikan*, 4(3), 644-658.
- Faridah, S., Mustaji, M., & Subroto, W. T. (2019). Pengaruh Contextual Teaching and Learning Terhadap Aktivitas Dan Hasil Belajar Siswa Pada Mata Pelajaran IPS Kelas IV Sekolah Dasar. *Jurnal Review Pendidikan Dasar: Jurnal Kajian Pendidikan Dan Hasil Penelitian*, 5(3), 1092-1099. <https://doi.org/10.26740/jrpd.v5n3.p1092-1099>.

- Febriana, A. (2011). Penerapan Model Pembelajaran Kooperatif Tipe Make a Match Untuk Meningkatkan Kualitas Pembelajaran IPS Siswa Kelas V SDN Kalibanteng Kidul 01 Kota Semarang (Application of Cooperative Learning Model Type Make a Match to Enhance Quality of Learning Social. *Jurnal Kreatif: Jurnal Kependidikan Dasar*, 1(2). <https://doi.org/10.15294/kreatif.v1i2.1678>.
- Fitriah, L., Roesminingsih, M. V., & Suhanadji, S. (2021). Developing Comic Media About Human Interaction With The Environment To Improve Critical Thinking Skills. *Jurnal Pajar (Pendidikan dan Pengajaran)*, 5(5), 1415-1433. <https://doi.org/10.33578/pjr.v5i5.8485>.
- Gading, I. K., & Kharisma, K. D. (2017). Pengaruh Model Pembelajaran Kooperatif Tipe Make a Match Berbantuan Media Audio Visual Terhadap Hasil Belajar IPS Sekolah Dasar. *International Journal of Elementary Education*, 1(2), 153-160. <https://doi.org/10.23887/ijee.v1i2.11608>.
- Hanafia, A., Wiryanto, W., Ekawati, R., & Hendratno, H. (2021). Penerapan Permainan Tradisional Congklak Untuk Meningkatkan Hasil Belajar dan Kepercayaan Diri Siswa. *Jurnal Education and Development*, 9(4), 354-361. <https://doi.org/10.37081/ed.v9i4.3093>.
- Herry, H. (2018). *Aplikasi Info Halal Pada Kosmetik Menggunakan Barcode Scanner Untuk Smartphone Dengan Metode Prototyping Berbasis Android*. Disertasi. Jakarta: Universitas Bhayangkara.
- Maharani, O. D. T., & Kristin, F. (2017). Peningkatan Keaktifan dan Hasil Belajar IPS Melalui Model Pembelajaran Kooperatif Tipe Make A Match. *Wacana Akademika: Majalah Ilmiah Kependidikan*, 1(1). <https://doi.org/10.30738/wa.v1i1.998>.
- Linawati., Mustaji., & Subroto, W. (2021). Efektivitas Kelas Virtual Pada Siswa Sekolah Dasar: Literature Review. *Pionir: Jurnal Pendidikan*, 10(2), 59-66. <https://doi.org/10.22373/pjp.v10i2.10292>.
- Nanik, N. (2013). Meningkatkan Kemampuan Kognitif Anak Dalam Mengenal Lambang Bilangan Melalui Media Bola Berwarna Pada Kelompok A TK Kartika IV-53 Desa Kudubanjar Kecamatan Kudu Jombang. *Paud Teratai*, 2(3), 1-8.
- Ningrum, M. F. C. P., Slameto, M. P., & Widyanti, E. (2018). Upaya Meningkatkan Keterampilan Kerjasama Siswa Pada Bidang Studi IPA Melalui Penerapan Model Group Investigation Bagi Siswa Kelas 5 SDN Kumpulrejo 2. *E-Jurnal Wahana Kreatifitas Pendidik*, 1(3), 7-13.
- Ningtyas, E. S., & Wuryani, E. (2017). Penerapan Model Pembelajaran Kooperatif (Cooperative Learning) Tipe Makea Match Berbantuan Media Komik Interaktif Untuk Meningkatkan Aktivitas Belajar Dan Hasil Belajar IPS. *Jurnal Pendidikan Surya Edukasi*, 3(1), 66-74.
- Rochaniningsih, N. S., & Masruri, M. S. (2015). Penggunaan Metode Jigsaw Dengan Bantuan Media Untuk Meningkatkan Keterampilan Kerja Sama Dan Hasil Belajar IPS. *Harmoni Sosial: Jurnal Pendidikan IPS*, 2(1), 42-54. <https://doi.org/10.21831/hsjpi.v2i1.4602>.
- Royani, P., Roesminingsih, M. V., & Yani, M. T. (2020). Pengaruh Model Pembelajaran Kooperatif Tipe Cooperative Integrated Reading and Composition (CIRC) Berbantu Teknik Mind Mapping untuk Meningkatkan Keterampilan Sosial dan Hasil Belajar IPS Kelas V Sekolah Dasar. *Jurnal Education and Development*, 8(2), 567-572.
- Sakiyah, S., Mustaji, M., & Yani, M. T. (2021). Pengembangan Mobile Learning dengan Pendekatan Saintifik untuk Meningkatkan Kemandirian dan Hasil Belajar IPS di Kelas IV SD. *PENDIPA Journal of Science Education*, 6(1), 193–200. <https://doi.org/10.33369/pendipa.6.1.193-200>.

- Salam, R., Zunaira, Z., & Niswaty, R. (2016). Meningkatkan Hasil Belajar Membuat Dokumen melalui Penggunaan Model Pembelajaran Kooperatif Tipe Make a Match (Mencari Pasangan). *Jurnal Office*, 2(2), 173-180.
- Septaningsih, S., Yulina, H., & Sudirman, A. (2018). Pengaruh Model Pembelajaran Kooperatif Tipe Picture and Picture Terhadap Hasil Belajar. *Pedagogi: Jurnal Pendidikan Dasar*, 6(12), 1-13.
- Suhanadji., & Roesminingsih, M. V. (2018). *Pendidikan IPS berbasis Kontekstual*. Surabaya: Unesa Press.
- Suparta, D. G., Lasmawan, M. P. P. I. W., & Marhaeni, M. P. A. N. (2015). Pengaruh model Pembelajaran Kooperatif Teknik Make a Match terhadap Motivasi Belajar dan Hasil Belajar IPS. *E-Journal Program Pascasarjana Universitas Pendidikan Ganesha*, 5, 1-12.
- Wibowo, K. P., & Marzuki, M. (2015). Penerapan Model Make a Match Berbantuan Media untuk Meningkatkan Motivasi dan Hasil Belajar IPS. *Harmoni Sosial: Jurnal Pendidikan IPS*, 2(2), 158-169. <https://doi.org/10.21831/hsjpi.v2i2.7667>.
- Wijanarko, Y. (2017). Model Pembelajaran Make A Match Untuk Pembelajaran IPA yang Menyenangkan. *Taman Cendekia: Jurnal Pendidikan Ke-SD-an*, 1(1), 52-59. <https://doi.org/10.30738/tc.v1i1.1579>.
- Zakiah, I., & Kusmanto, H. (2017). Pengaruh Penerapan Model Pembelajaran Kooperatif Tipe Make a Match Terhadap Kreativitas Siswa Dalam Pembelajaran Matematika. *Eduma: Mathematics Education Learning and Teaching*, 6(1), 32-42. <https://doi.org/10.24235/eduma.v6i1.1660>.
- Zakiah, I. R., Prasetyo, K. H., & Astutiningtyas, E. L. (2019). Meningkatkan Aktivitas dan Hasil Belajar Melalui Pembelajaran Kooperatif Tipe Make a Match. *ABSIS: Mathematics Education Journal*, 1(2), 41-48.

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