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Utilization of the Make a Match Cooperative Learning Model for Enhancing Student Learning Achievement

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Abstract

This research aims to investigate the implementation of the Make a Match type cooperative learning model as a strategy to enhance student learning outcomes. This method involves active interaction among students in matching relevant information or concepts, promoting teamwork, and increasing student engagement in the learning process. The research problem formulation is whether the Make A Match method can improve student learning outcomes. The objective of this research is to enhance student learning outcomes through the Make A Match method, with research subjects being students of class X MM at Maestro Vocational High School in Banjarmasin. The focus of the study is the learning outcomes of the students. The data collected are then analyzed using quantitative descriptive methods to determine the learning outcomes of the students. The success indicator of this research is seen in student learning outcomes achieving mastery > 75. The results of the first cycle showed a mastery level of 52%. In the second cycle, the mastery level reached 86%, indicating an improvement from the first cycle to the second cycle with a mastery increase of 33%. Therefore, it can be concluded that there is an improvement in student learning outcomes through the implementation of the Make A Match method. This research is expected to provide a comprehensive understanding of the contribution of the Make a Match type cooperative learning model in enhancing student academic achievement and to offer recommendations for further development in the field of education.

Keywords: Utilization, Model, Cooperative, Learning, Make A Match

INTRODUCTION

Education is a crucial aspect in shaping and developing the potential of individuals to meet the demands of an increasingly complex society and workforce. Improving student learning outcomes is a primary focus in efforts to enhance the quality of education.(Thistlethwaite, 2012) In facing these challenges, various approaches and learning models are continually explored to find effective methods in enhancing students' understanding and achievements. One learning model that has garnered attention in this context is the Cooperative Learning Model Type Make a Match.(Casey, 2014) This model emphasizes active interaction among students in matching relevant information or concepts. By promoting teamwork and increasing student engagement in the learning process, it is anticipated that this model can contribute positively to the improvement of student learning outcomes.(Casey & MacPhail, 2018)

Through the implementation of the Cooperative Learning Model Type Make a Match, this research aims to explore the extent to which this model can be an effective strategy in enhancing students' understanding and academic achievements.

By delving deeper into the potential and positive impacts of this model, it is expected that this research can provide valuable contributions to the development of teaching methods applicable in various educational contexts. Additionally, the findings from this research are anticipated to serve as a foundation for the formulation of policies and more effective instructional planning to achieve quality and sustainable educational goals.(Darnis & Lafont, 2015) Education plays a strategic role in shaping the future of a nation. Enhancing the quality of education is not only related to the delivery of information but also involves a learning process that can build social skills, teamwork, and problem-solving abilities. Therefore, the selection of the appropriate teaching model becomes crucial in achieving these goals.(Estriegana et al., 2019)

The Cooperative Learning Model Type Make a Match emerges as an intriguing alternative because it offers an approach that focuses on social interaction and collaborative learning. In this model, students are not only responsible for individual understanding but actively engage in assisting their peers. By matching information or concepts, students not only master the material but also hone critical and analytical thinking skills. Efforts to enhance student learning outcomes cannot be divorced from the dynamics of change in the field of education. The development of technology and globalization is altering how students learn and interact. Therefore, instructional models must be adaptive and responsive to these advancements. The Cooperative Learning Model Type Make a Match, with its dynamic characteristics, can make a significant contribution in preparing students to face the challenges of the 21st century.(Kudsk-Iversen et al., 2018)

Previous studies have indicated that the Cooperative Learning Model Type Make a Match has yielded positive results in enhancing students' academic achievements across various educational levels. However, further investigation is still needed to delve deeper into the potential and variables that influence the effectiveness of this model in specific contexts. Hence, this research serves as a constructive step in filling knowledge gaps and offering fresh perspectives on the implementation of the said instructional model. When addressing the improvement of student learning outcomes, it is crucial to consider the diversity in students' characteristics, learning styles, and individual levels of understanding. The Cooperative Learning Model Type Make a Match is expected to provide flexibility to accommodate these differences, creating an inclusive learning environment that supports all students.(Hall et al., 2013)

Additionally, the evaluation aspect also becomes a crucial factor in assessing the success of a learning model. In this context, this research will involve quantitative and qualitative data analysis to measure the impact of the Cooperative Learning Model Type Make a Match on students' learning outcomes. The collected data will provide insights into the effectiveness of this model and its potential for widespread application. It is also important to consider the involvement of teachers in implementing the instructional model. The role of teachers in guiding, supporting, and providing guidance significantly influences the success of the learning model.(O'Brien et al., 2017) Therefore, this research will also pay attention to the teachers' perspective regarding the challenges and successes in implementing the Cooperative Learning Model Type Make a Match. In the framework of understanding the concept of cooperative learning, it is crucial to detail how this

model can concretely influence the cognitive, affective, and psychomotor aspects of students. This discussion will open up space for a deeper understanding of the role of the Cooperative Learning Model Type Make a Match in enhancing students' learning outcomes across various dimensions.

Furthermore, this research can also provide recommendations for the development of cooperative learning models in the future. By identifying strengths and potential improvements, guidelines and directives can be formulated to guide teachers and policymakers in implementing the Cooperative Learning Model Type Make a Match. Thus, this research holds significant relevance in optimizing the learning process in the contemporary era. Improving student learning outcomes is not only the ultimate goal but also the initial step towards developing students' potential holistically, aligning with the changing and evolving demands of the times.

THEORETICAL STUDY

The implementation of the Cooperative Learning Model Type Make a Match as an upgrade for student learning outcomes is grounded in robust theoretical foundations. Rooted in constructivism, the model aligns with the philosophy that students actively construct knowledge through interaction, promoting hands-on activities and active learning.(Winskog et al., 2012) Social interdependence and teamwork principles emphasize collaborative efforts, fostering positive learning environments where students share responsibilities and achieve common goals. Make a Match stimulates cognitive development, encouraging critical thinking through activities that require matching and connecting information. Motivation and engagement are enhanced as the model captures students' interest with its interactive and game-like nature, making learning enjoyable.(Taylor et al., 2022) The theoretical underpinning includes formative assessment, ensuring continuous evaluation to inform teaching and learning processes dynamically. Acknowledging the pivotal role of teachers as facilitators, the model responds to contemporary educational needs by emphasizing collaboration, critical thinking, and active engagement, enhancing problem-solving skills. In conclusion, the Cooperative Learning Model Type Make a Match integrates constructivist principles and collaborative strategies, providing a powerful tool to upgrade student learning outcomes while addressing the evolving landscape of education.(Odongo & Talbert-Slagle, 2019)

Improving the quality of learning is inseparable from the teacher's role in choosing appropriate learning strategies to create a conducive learning environment, thereby enhancing students' problem-solving skills in learning, which ultimately impacts the improvement of educational quality.(Richmond et al., 2016) stated that learning is a process to assist learners in learning well, and therefore it needs to be designed seriously.

Several factors contribute to the low level of student engagement and learning outcomes, including: (1) the predominant use of lecture-based methods by teachers, neglecting innovative teaching models, leading to passive learning; (2) students are primarily engaged in listening, note-taking, and memorizing materials presented by the teacher. The lack of teacher understanding in selecting and implementing interactive learning models is evident in lesson plans, where teaching methods tend to be uniform

within a cluster. Lesson plans commonly rely on lecture and question-and-answer methods, resulting in less active student participation and frequent boredom during classes; (3) students' lack of enthusiasm in participating in learning activities, where limited opportunities are provided for them to express their opinions or evenly answer questions posed by the teacher; (4) insufficient opportunities for student collaboration in groups; and (5) teachers underutilizing instructional media, often relying on a single textbook during the teaching process. Consequently, the described teaching approaches fail to sufficiently engage students, impacting their overall learning outcomes(Berkling & Thomas, 2014)

A teacher is required to possess skills in designing learning models that enable students to actively participate both physically and mentally, fostering creativity to enhance student engagement with the presented material. Additionally, teachers must enhance their professional competence as guides and facilitators in the learning process, simultaneously acting as assessors of learning outcomes. This aligns with the Republic of Indonesia Law No. 14 of 2005 concerning Teachers and Lecturers, Article 10, paragraph (1), which states that "teacher competencies as referred to in Article 8 include pedagogical competence, personality competence, social competence, and professional competence obtained through professional education." This means that as a teacher, one must have the ability and competence in their field, mastering the content to be taught effectively.(Odongo & Talbert-Slagle, 2019)

Considering the demands of these issues, changes need to be made in the learning activities to make it more enjoyable for students. In this regard, the use of an innovative learning model is highly necessary so that students can construct their own knowledge. The implementation of an innovative learning model is expected to make students more active in the learning process.(Richmond et al., 2016) Students are anticipated to collaborate in groups, appreciate others' opinions, communicate effectively, and foster a sense of togetherness, reflecting the characteristics of humans as social beings.

One suitable learning model that aligns with these characteristics is the cooperative learning model called make a match. This learning model is an active learning approach emphasizing group collaboration, mutual assistance, problem-solving, and the integration of opinions to achieve optimal success, both at the group and individual levels (Berkling & Thomas, 2014). According to jansen the advantage of this model is that "students find partners while learning about a concept or topic in a fun atmosphere." Teachers play a more facilitating role, not only imparting knowledge but also building knowledge in the minds of students, making them active, creative, and intelligent.(Weggelaar-Jansen et al., 2015)

The cooperative learning model type make a match "encourages students to find partners while learning about a concept or topic in an enjoyable atmosphere"(Chrystall, 2014). According to Huda in (Velasco Moreno, 2023), the make a match cooperative learning model involves students in reviewing the material covered in the lesson and checking or assessing students' understanding of the subject matter by providing each student with a quiz containing questions and answers. The advantages of the make a match cooperative learning model include: 1) Creating an active and enjoyable learning atmosphere. 2) Making the delivered learning material more engaging for students. 3) Generating a sense of joy during the learning process. 4) Dynamic collaboration among students is realized. 5) The emergence of equal

mutual cooperation dynamics among all students. The excellence of this model lies in students seeking partners while learning about a concept or topic in an enjoyable atmosphere(Usher, 2019)

The make a match cooperative learning model is significantly different from the conventional learning model commonly applied by teachers in schools. This difference is evident in the syntax and methods used in the learning process. Conventional learning models tend to involve active participation from the teacher, where the teacher transfers knowledge to students without considering students' mental states (Sembiring et al., 2020). This condition results in students being passive in the classroom and tends to quickly feel bored. In contrast, the make a match cooperative learning model provides students with the opportunity to actively engage in learning activities through the game of finding partners.

Numerous research findings have explored the effectiveness of the make a match cooperative learning model. For instance, Alhamwi (Elsarnagawy & Alhamwi, 2011) discovered that the make a match cooperative learning model significantly influences students' learning outcomes. Johnson D.W, Roger T, and Stanne Mary Beth (2000) found that cooperative learning models can impact students' academic achievement. Ebrahim Ali's research (2012) concluded that cooperative learning significantly influences students' achievements. Alabekee E. C., Samuel A., et al. (2015) revealed that cooperative learning allows learners to receive positive feedback and enhances students' academic performance. There are many more research findings supporting the efficacy of cooperative learning models.(Vasileva-Stojanovska et al., 2014)

The make a match cooperative learning model can be more optimal when combined with instructional media during its implementation. One suitable medium is audio-visual media. The make a match cooperative learning model assisted by audio-visual media enables students to collaborate with their partners, sharing information collectively. In this learning approach, students are trained to develop teamwork to solve the material problems provided by the teacher. Additionally, the presence of audio-visual media (video) broadens the variety of students' learning resources. Audio-visual media is a tool that simultaneously presents visual and auditory elements when communicating messages or information (Wati, 2016). According to Anderson, audio-visual media is an electronic image sequence accompanied by audio elements, often delivered through video tapes. Barbara explains that audio-visual media is a way of producing and delivering content using mechanical and electronic equipment to present audio-visual messages. True to its name, audio-visual media is a combination or blend of audio and visual elements. Utilizing this medium can be more complete and optimal to support learning activities and deliver instructional material to learners. Moreover, within certain limits, this media can replace the role of the teacher. In this context, the teacher does not always play the role of a material presenter; instead, as the material presentation can be substituted by media, the teacher's role can shift to that of a learning facilitator, making it easier for learners.

Anderson states several objectives of using audio-visual media in learning, including cognitive goals such as (a) developing cognitive partnerships that involve the ability to recognize and respond to motion and coordination stimuli, (b) displaying a series of still images without sound as photo and film media frames, (c) teaching knowledge about specific laws and principles. Furthermore, audio-visual media can be

used to show examples and demonstrate attitudes or actions in a performance, especially those involving student interaction. For affective goals, audio-visual media is an excellent tool for delivering information in the affective dimension, utilizing effects and techniques to influence attitudes and emotions. In terms of psychomotor goals, audio-visual media is suitable for demonstrating motor skills by showing examples of movements, whether in slow motion or fast motion.

Given the definitions and objectives of audio-visual media in learning, it aligns seamlessly with the implementation of the make a match cooperative learning model. The hypothesis is that the make a match cooperative learning model aided by audio-visual media can enhance the quality of the learning process and outcomes. The next step is to address and prove this hypothesis, requiring methodological research such as action research (applied research) or experimental research to validate its effectiveness.

METHODS

This research is a field study where the researcher describes a form of learning to improve students' learning outcomes using the Make A Match method in Islamic Education subjects. The data collected in this study are descriptive, involving descriptions of students' learning activities using a quantitative approach within the type of classroom action research.

This research utilizes a quantitative approach as it involves numerical data, starting from the data collection, interpretation of the data, to the presentation of the results. Sandelowski and described deductively based on general theories. Subsequently, through observations to test the validity of the theory, conclusions are drawn. Then, it is elaborated descriptively because the results will be directed towards describing the obtained data and answering the formulated questions.(Sandelowski, 2000)

The research location is at SMK Maestro Banjarmasin, with the research subjects being 15 students from class X at SMK MM Maestro Banjarmasin, consisting of 6 males and 9 females. The required data for this study were obtained through observations of the learning process using the Make A Match method, observations of student and teacher activities, pre-tests and post-tests to measure students' learning outcomes, and documentation. To determine the effectiveness of a method in the learning activities, data analysis is essential. This research employs a quantitative descriptive analysis technique, a method used to describe the obtained data to find relationships between two or more variables with the aim of understanding the learning outcomes achieved by students. Additionally, it aims to obtain student responses to the learning activities and student activities during the learning process. To analyze the success rate or percentage of student success after each teaching-learning cycle, an evaluation in the form of a written post-test is given at the end of each cycle. This analysis is calculated using a simple formula:

1. To assess the results of the post-test at the end of each learning session, the average value of the final post-test is calculated using the formula.
2. For the completeness of learning outcomes, to calculate the percentage of learning completeness, the formula is used as follows:

$$Average = \frac{Total\ Value}{Overall\ Data}$$

$$P = \frac{f}{N} \ x\ 100$$

Note:

f = The frequency being sought is its frequency
N = *Number of Class* (The total frequency/number of individuals)
P = The percentage figure

This research covers cycles I and II. In each cycle, the process is carried out according to the intended goals. Each cycle consists of 3 meetings, with each meeting lasting 45 minutes, and after completing each cycle, a post-test is conducted to assess students' understanding of the concepts of Islamic Education (PAI) and Moral Education. The material involves understanding the content of Surah al-Isra'/17:32 and Surah an-Nur/24:2, as well as relevant Hadith regarding the prohibition of free mixing and acts of adultery that have been studied. Additionally, a reflection session is conducted by the researcher, who is also an observing teacher, to discuss encountered issues during the learning activities in that cycle. Subsequently, the reflections are used as materials for improvement in the next cycle.

There are four stages undergone in each cycle. The action research cycle begins with planning (Planning), observing and evaluating the action results (Observation and Evaluation), reflecting (Reflecting), and so on. The stages of the action research cycle can be seen in the following diagram:"

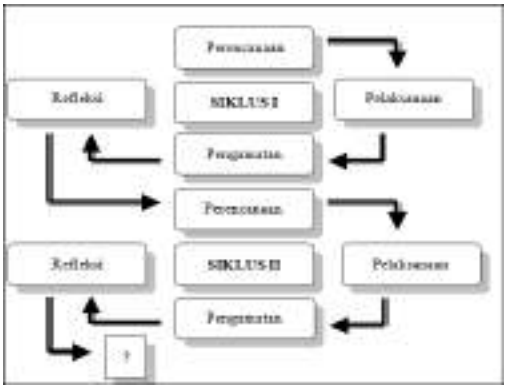

Figure 1: Flow of Classroom Action Research Model by Kemmis & Mc.Taggart

As for the explanation of the above flow:

1. Planning/initial planning, the researcher formulates the problem, objectives, and develops an action plan, including research instruments and teaching materials
2. Implementation/action involves activities carried out by the researcher to build students' understanding of concepts and observe the results or impacts of the application of the Make A Match learning method.
3. Observation, observing every action conducted, including: student and teacher activities, teacher-student interactions. In this stage, data are collected by measuring the activities of teachers and students using pre-designed instruments.
4. Reflection From the implementation of actions and observations that have been carried out, information about the application of the Make A Match method will be obtained, whether it has proceeded according to the intended goals or not. Then, the results are analyzed and evaluated to refine the reflection actions in the preparation of the next cycle.

The research is divided into two cycles, namely cycles 1 and 2, where each cycle is subjected to the same treatment (the same sequence of activities) and covers one sub-topic that concludes with a post-test at the end of each cycle. The division into two cycles is intended to improve the teaching system that has been implemented.

RESEARCH RESULTS AND DISCUSSION

The Cooperative Learning Model Type Make a Match stands out as an innovative strategy in enhancing student learning outcomes. The success of a learning model in achieving desired educational goals heavily relies on the applied methods. In this context, this instructional model emphasizes active interaction and collaboration among students, creating a dynamic learning environment.(Patwari et al., 2017) The flexibility of the Cooperative Learning Model Type Make a Match emerges as a crucial advantage. In the era of technological development and educational transformation, this model demonstrates its ability to adapt to the dynamics of the times. Through technology integration, such as the utilization of digital resources, this model can provide a learning experience that aligns with the demands of the contemporary era.(Citraro et al., 2020)

The importance of the teacher's role in the success of implementing this learning model is highlighted. Teachers not only serve as learning facilitators but also as guides who understand the needs and characteristics of students. Teacher support and involvement in implementing the Cooperative Learning Model Type Make a Match are crucial factors in creating an effective learning experience.(Riccio & Bloch, 2019) This research also emphasizes the contribution of this learning model to the development of students' social and cognitive skills. The activity of matching information in this model not only strengthens the understanding of concepts but also stimulates critical, analytical, and communication skills.(Alhamwi et al., 2010) Thus, this learning model has a broader positive impact on shaping students' character.(Ocak et al., 2017)

The impact evaluation of the Cooperative Learning Model Type Make a Match on students' learning outcomes, through quantitative and qualitative data analysis, proves the effectiveness of this model. The research findings provide a basis for formulating recommendations for further development, including further integration of technology and adjustments to accommodate student diversity.(Uziak

et al., 2018) The significance of this research goes beyond just improving students' learning outcomes; it also contributes to our understanding of the potential of the Cooperative Learning Model Type Make a Match as an effective tool in achieving educational goals. The practical implications can guide curriculum development and learning strategies at higher education levels. Thus, this learning model plays a crucial role in addressing educational challenges in the contemporary era.(Sari et al., 2018)

The results of the learning research in cycle I, for the implementation of the Make a Match method in improving the learning outcomes of students in class X MM SMK Maestro Banjarmasin, are not yet complete, and the percentage has not reached the maximum limit. Some factors causing this include:

1. The students' learning outcomes indicate that the classical completeness of students is only 53%. This means that only 53% of students who participated in cycle I have completed their learning, so the completeness of learning outcomes in cycle I has not been achieved, and the next cycle must be conducted.
2. The students still cannot fully comprehend the concept of the Make A Match method, so they often feel confused.
3. The students do not remember the material they have learned, so the learning is limited to the notes they obtained.
4. The students do not use the given time effectively, resulting in them acquiring fewer points.

The students have not been actively seeking their respective card matches

Data analysis

The results of the learning research in cycle I, for the implementation of the Make a Match method in improving the learning outcomes of students in class X MM SMK Maestro Banjarmasin, are not yet complete, and the percentage has not reached the maximum limit. Some factors causing this include:

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3. The students do not remember the material they have learned, so the learning is limited to the notes they obtained.
4. The students do not use the given time effectively, resulting in them acquiring fewer points.
5. The students have not been actively seeking their respective card matches

Table 1 Analysis of Learning Outcomes in Cycle I

NO	Learning Outcomes	Pretest	Post Test
1	Average value	54	70
2	Lowest score	20	40
3	The highest score	80	90
4	Number of Students who Passed	4	8
5	Completion Percentage	26%	53%

The results of the learning research in cycle 2, for the implementation of the Make a Match method in improving the learning outcomes of students in class X MM SMK Maestro Banjarmasin, have revealed the following facts:

1. The students' learning outcomes indicate that the classical completeness of students is already 86%. This means that only 14% of students who participated in cycle II have not completed their learning, so the completeness of learning outcomes in cycle II is considered sufficient as it is above the Minimum Mastery Criteria
2. Students can fully understand the concept of the Make A Match method, so they no longer feel confused.
3. Students have focused their learning on memory, not just limited to the notes they obtain.
4. Students can use the time given well so that they get lots of points.
5. Students are actively looking for their respective pairs of cards correctly.

Table 2 Analysis of Learning Outcomes in Cycle II

NO	Learning Outcomes	Test I	Test II
1	Average value	70	82
2	Lowest score	40	40
3	The highest score	90	100
4	Number of Students who Passed	8	13
5	Completion Percentage	53%	86%

The data above shows that the percentage of completeness and the average score has reached the Minimum Mastery Criteria (KKM), and the success indicators in learning. In fact, there are some students whose scores are already at a satisfactory level. Based on the results above, the Cooperative Learning Model Type Make A Match has advantages compared to classical learning. The impact of active, enjoyable, and engaging learning can improve students' learning outcomes compared to classical learning. Students are not merely passive; instead, they actively engage throughout the learning process.

This is in line with the opinions of experts stating that the implementation of the Make A Match learning method, where students collaborate in answering questions by matching cards in their hands, makes the learning process more engaging. It appears that most students are more enthusiastic about participating in the learning process, and the students' activeness is evident when they actively search for their respective card matches.

According to Chanprasitchai, the role of the method as a teaching strategy and a tool to achieve goals is highly influential because the method serves as an

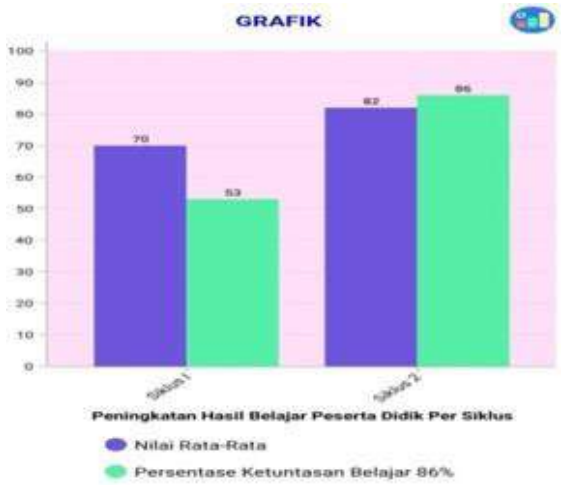
extrinsic motivation tool, a teaching strategy, and a tool to achieve goals. The Make A Match method involves students actively playing a role in finding solutions to a problem through collaboration, thinking, and discussion. The Make A Match learning method demands the students' mental and physical engagement. Mental activities carried out in the Make A Match learning model can make learning meaningful and enjoyable, making it easier for students to remember(Chanprasitchai & Khlaisang, 2016)

This is supported by the opinion of Walsh, who states that the Make A Match method.

1. Can enhance students' learning activities both cognitively and physically.
2. Because there is an element of play, this method is fun.
3. Increase students' understanding of the material being studied and can increase learning motivation.
4. Effective as a means of training students' courage to appear in presentations.
5. Effectively trains students' discipline to learn to value time for studying (Walsh, 2018).

The improvement in students' learning outcomes in each cycle can be seen in the following graph:

Graph 1 Improvement of Student Learning Outcomes Per Cycle



CONCLUSIONS

Based on the previous discussion, the author concludes that the Cooperative Learning Model Type Make a Match has significant potential in improving students' academic achievements. By emphasizing active interaction among students and teamwork, this model not only reinforces conceptual understanding but also develops collaborative skills crucial in an increasingly complex society. The importance of involving teachers in the implementation of this model emerges as a key success factor. The teacher's role in guiding, supporting, and providing guidance significantly contributes to the effectiveness of the Cooperative Learning Model Type Make a Match. Therefore, there is a need for further attention to training and support for teachers in implementing this learning approach

Furthermore, Islamic Education (PAI) and Character Education (Budi Pekerti) are essential subjects to be taught in schools. Consequently, some students face difficulties in these subjects. Therefore, to improve students' learning outcomes, guidance from teachers is necessary. A suitable method for providing guidance to students struggling to comprehend the material is the Make A Match learning method. Thus, active, enjoyable, and collaborative learning with others, along with the use of the Make A Match learning method, can be considered an alternative. The implementation of the Make A Match method in Islamic Education and Character Education facilitates teachers in achieving the desired learning goals and optimizing/fulfilling students' learning outcomes. This is evident from the classical learning completeness percentage in Cycle I at 53%, in Cycle II at 86%. The average scores of the students also experienced a significant increase, reaching 70 in Cycle I and rising to 82 in Cycle II. This means that the researcher's set target, namely achieving a classical learning completeness standard of ≥ 80% and an individual average score of ≥ 75, has been accomplished.

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