Cooperative Learning Based on Word-Matching Game to Enhance Mastery of Arabic Vocabulary for Eighth-Grade MTs Students

Fauziyah Nurul Hanifah\textsuperscript{1}, Maman Abdurrahman\textsuperscript{2}, Tatang\textsuperscript{3}, Shofa Musthafa Khalid\textsuperscript{4}, Azra Adrina Langguly\textsuperscript{3}

\textsuperscript{1,2,3,4}Arabic Education Study Program Universitas Pendidikan Indonesia Bandung, Indonesia.\textsuperscript{3}Study Program of Islamic Sharia Al-Azhar Cairo, Egypt.

Correspondence Address: fauziynurnurulhanifah@upi.edu

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Abstract

The research addresses the necessity for developing and implementing more effective learning methods and media to enhance the mastery of Arabic vocabulary among school students. The research aims to apply and evaluate the effectiveness of cooperative learning through the word-matching game technique to enhance the mastery of Arabic vocabulary among grade VIII students. This research used a quantitative approach with a quasi-experimental design, specifically a non-equivalent control group design. The research sample consisted of two VIII classes in MTs Negeri 1 Bandung City, namely the control class (VIII B) and the experimental class (VIII E), each totaling 30 students. Data were collected through observations, interviews, and tests to measure the enhancement of Arabic vocabulary mastery. The results showed that cooperative learning with word-matching game technique significantly enhanced students' vocabulary mastery compared to the conventional method. The experimental class showed significant enhancement with a normalized gain score of 56.55\%, categorized as quite effective. In comparison, the control class only obtained a score of 30.50\%, which is classified as ineffective. The scientific contribution of this research is to provide empirical evidence regarding the effectiveness of game-based cooperative learning in enhancing Arabic vocabulary acquisition at the junior high school level. This research also enriches the literature on innovative learning methods in language education, especially Arabic. Future research suggests further studies exploring the application of this word-matching game technique at different educational levels and contexts and examining the long-term effects of using this technique. In addition, further research can consider other factors that can affect learning success, such as student motivation, parental involvement, and technological support in the learning process.

Keywords: Arabic Vocabulary Mastery, Cooperative Learning, Word-Matching Game

ملخص

يتناول البحث ضرورة تطوير وتطبيق أساليب ووسائل تعليمية أكثر فاعلية لتعزيز إتقان مفردات لدى طلبة المدارس، بهدف البحث إلى تطبيق وتفعيل فاعلية التعلم التعاوني من خلال تقنية لعبة مطابقة الكلمات لتعزيز إتقان مفردات لدى طلاب الصف الثامن. استخدم هذا البحث نهجاً كميًا بتصميم شهاب تجريبي، وتحديدًا تصميم مجموعة تجربة غير مكافئ. تألفت عينة البحث من فصولتين ثامنين في مدرسة تساناوية نيجيري 1 مدينة باندونغ، وهما فئة التحكم (الفصل التجريبى (الثالثين B)، والفصل التجريبى (الثامنين E)، يبلغ إجمالي كل منهما 30 طالباً. تم جمع البيانات من خلال الملاحظات والمقابلات والاختبارات لقياس إتقان المفردات. أظهرت النتائج أن التعلم التعاوني مع تقنية لعبة مطابقة الكلمات عزز بشكل كبير إتقان مفردات الطلاب مقارنة بالطريقة التقليدية. أظهرت الفئة التجريبية تحسناً كبيراً مع درجة ربح طبيعية تبلغ 0.55/5، مصنفة على أنها فعالة مثلى. وبالمقابل، حصلت فئة التحكم فقط على درجة 0.5/5، والتي يتم تصنيفها على أنها غير فعالة. تتمثل المسألة العلمية لهذا البحث في تقييم أدلة تجريبية فيما يتعلق بفعالية التعلم التعاوني القائم على الألعاب في تعزيز اكتساب المفردات على مستوى المدرسة الإعدادية. يجري هذا

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The research also discusses the challenges of learning Arabic, such as the lack of innovative teaching methods and the use of different levels of language. The study finds that the adoption of this technique can significantly increase the understanding of Arabic among the community, especially among school students. Many students think that learning Arabic is difficult. Starting from this assumption makes most students less motivated to learn Arabic. The main task of an Arabic teacher here is to eliminate this perception by implementing fun Arabic learning. This learning process occurs in a familiar, relaxed, and non-stressful atmosphere. This can be done through approaches in the learning process, methods used in the classroom, educational techniques, and media provided as supporting tools in the learning process.

Introduction

In the process of learning Arabic, there are several aspects of knowledge, such as speaking in Arabic (Mahārat al-Kalām), reading Arabic writing (Mahārat al-Qirā‘ah), listening to conversations in Arabic (Mahārat al-Istimā‘), and writing Arabic writing (Mahārat al-Kitābah). One of the main challenges in learning Arabic is vocabulary acquisition, which is an essential basis for developing all four skills. However, many students experience difficulties in mastering Arabic vocabulary, which ultimately affects their ability to master Arabic. Vocabulary mastery is a very important language skill in learning foreign languages, including Arabic, because language is inseparable from vocabulary.

Interest in learning Arabic still needs to be increased among the community, especially school students. Many students think that learning Arabic is difficult. Starting from this assumption makes most students less motivated to learn Arabic. The main task of an Arabic teacher here is to eliminate this perception by implementing fun Arabic learning. This learning process occurs in a familiar, relaxed, and non-stressful atmosphere. This can be done through approaches in the learning process, methods used in the classroom, educational techniques, and media provided as supporting tools in the learning process.

5. Umi Hanifah, “Fun Arabic Learning through Songs Media,” Tanwir Arabiyyah: Arabic As Foreign Language Journal 1, no. 2 (2021): 73–82. DOI: https://doi.org/10.31869/alfi.v1i2.2873
One of the efforts to realize a comfortable and pleasant learning atmosphere is by applying games to learning. Many variations of learning models accompanied by language educational games can be used to learn Arabic, especially in learning Arabic vocabulary because Arabic vocabulary is the primary key for someone learning Arabic. The more Arabic vocabulary we have, the more likely we are to be skilled in Arabic. The amount of Arabic vocabulary students master greatly determines the level of success in mastering the subject matter as a whole. According to the findings of research conducted by Ahyar, there is a significant relationship between mastery of Arabic vocabulary and qawā'id with Arabic writing skills. This shows the importance of mastering Arabic vocabulary to learn and master Arabic language skills. The difficulties experienced by students in mastering Arabic vocabulary are often caused by monotonous and less varied learning, such as the lecture or drill method, where the teacher only mentions and repeats Arabic vocabulary without any interesting and interactive variations. As a result, students feel bored and easily forget the newly learned Arabic vocabulary. A teacher must be able to implement interesting and fun learning to overcome these problems.

Based on observations at MTs Negeri 1 Kota Bandung in March 2024, it was found that a teacher-centered approach still dominates the learning process of Arabic vocabulary. Students tend to be passive listeners and less actively involved in learning. The learning media is limited to books and blackboards, making learning monotonous. Some students look less focused during learning, and some chat and even play on cell phones. As a result, many students feel bored and have difficulty remembering the vocabulary taught. In interviews, students admitted that they often forget the vocabulary they have learned and only memorize it during exams. Therefore, an innovative and fun approach is needed to enhance students' mastery of Arabic vocabulary.

Reflecting on the above reality, using a game-based cooperative learning model to learn Arabic vocabulary can be an interesting solution. Cooperative learning is recognized as a great approach to teaching. Cooperative learning is a learning model in which students work in small groups to enhance students' mastery of Arabic vocabulary.

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12. Interview with Izkariema Aqeela Hasna (Student of Class VIII D at MTs Negeri 1 Bandung, Bandung), Wednesday, March 27, 2024, at 11.00 WIB.
motivate and help each other to optimally achieve learning objectives.\textsuperscript{16} In cooperative learning, there is positive interaction among group members and cooperation, and all group members are responsible for advancing their group.\textsuperscript{17} The application of game techniques in learning Arabic can encourage studentactiveness.\textsuperscript{18} One of the educational game techniques that has the potential to enhance students' mastery of Arabic vocabulary is a word-matching game. A word-matching game is often used in vocabulary learning, where students will guess and match words with their corresponding pairs of word meanings, synonyms, antonyms, or definitions through a fun and interactive activity.\textsuperscript{19} Cooperative learning based on word-matching games is motivated by the existence of learning strategies that provide opportunities for students to actively learn by changing the teacher-centered learning method to student-centered.

From the results of preliminary studies and discussions with one of the Arabic language teachers at MTs Negeri 1 Bandung City, a solution was found that is considered appropriate to enhance students' mastery of Arabic vocabulary, namely by applying a word-matching game-based cooperative learning model in learning Arabic vocabulary. This technique will use a game board and clue cards containing Arabic vocabulary and its meaning, where students work in groups to appropriately match the questions and answers on the game board. This technique certainly involves the active role of students in realizing fun learning.\textsuperscript{20} This research aims to implement and evaluate the effectiveness of cooperative learning based on word-matching games in enhancing the mastery of Arabic vocabulary of class VIII students at MTs Negeri 1 Bandung City. The novelty of this research lies in combining the cooperative learning with the word-matching game technique, which has not been widely explored in Arabic vocabulary learning, especially at the junior high school level.

This research focuses not only on enhancing vocabulary mastery but also on enhancing students' learning motivation. This research uses a quasi-experimental design by comparing the effectiveness of cooperative learning based on word-matching games with conventional methods. Some previous studies have shown that cooperative learning based on educational game techniques can enhance students' vocabulary acquisition and learning motivation. From previous research, Ismail et al. found that cooperative learning based on the domikara game (Arabic Vocabulary Dominoes) can be applied as an alternative solution in enhancing the mastery of Arabic vocabulary of 8th-grade students of MTs Negeri 4 Seleman.\textsuperscript{21} Suantini et al.'s research shows that the application of cooperative learning models with Wheel of Fortune game techniques can enhance the


\textsuperscript{18} Mohamad Yahya Ashari and Rifatul Mahfudhoh, “The Strategy of Arabic Learning for Inclusion Students in Islamic Primary School of Islamiyah Wauthoniyyah Jombang,” Mantiq Tayr: Journal of Arabic Language 1, no. 2 (2021): 83–100. DOI: https://doi.org/10.25217/mantiqtayr.v1i2.1567


\textsuperscript{20} Nur Lailatus Sa’adah, “The Effectiveness of Words Matching Game on Students’ Vocabulary at The Seventh Grade of MTs NU Miftahul Mu’arif Kaliungan,” (Thesis, Institut Agama Islam Negeri Kudus, 2023). https://repository.iankudus.ac.id/id/eprint/10019

\textsuperscript{21} Ahmad Ismail, Nurul Huda, and Fathul Diana Izzah, “Pembelajaran Kooperatif Berbasis Permainan Domikara (Domino Kosakata Babasa Arab) untuk Meningkatkan Penguasaan Mufradat Siswa Kelas VIII MTs Negeri 4 Sleman,” Edulab: Majalah Ilmiah Laboratorium Pendidikan 5, no. 2 (2021): 197–220. DOI: https://doi.org/10.14421/edulab.2020.52-07

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mastery of Japanese vocabulary of students in class XI IBBU SMA Negeri 1 Busungbiu. Students feel the benefits of applying cooperative learning models with Wheel of Fortune game techniques in learning Japanese vocabulary, learning becomes fun and vocabulary mastery becomes better.\textsuperscript{22}

Speaking of the effectiveness of the cooperative learning model, the author tries to provide an overview of how the learning model has a good effect on the learning process based on several research results. One is Fajriyani's research, which concluded that the cooperative learning model with Flipchart media type Course Review Horay is effective enough to increase students' motivation to learn Arabic.\textsuperscript{23} Furthermore, Asiyah's research showed an effect of the Teams Games Tournament cooperative learning model using the Giant Board Game on Arabic learning outcomes for class VIII students at Al-Ghurabaa Junior High School Jakarta.\textsuperscript{24}

In reviewing the effectiveness of the matching game technique, Mayekti and Bestari's research on the effect of matching games on learning speaking skills shows that matching games can be an effective strategy for teaching speaking skills. It can help students to practice speaking skills quickly and effectively.\textsuperscript{25} Then, the research of Yuliarsih et al. Regarding teaching reading comprehension at MTs Matsaratul Huda Pamekasan using matching games, the results show that matching games positively affect students' ability to read English text skills.\textsuperscript{26} Furthermore, Fuadi et al.'s research, in their article on the use of nahwu matching games in teaching isim isyarab, the results of his research show that this game has cognitive advantages that help students remember the material and this game runs well and is interesting, as evidenced by the positive response from students.\textsuperscript{27} In reviewing the effectiveness of word-matching game techniques in enhancing vocabulary mastery, Rachmahwati's research results show that the use of word-matching games is effective in enhancing students' mastery of English vocabulary.\textsuperscript{28} Maulana's research results also show that using word-matching game techniques in the learning process can enhance mastery of Japanese vocabulary.\textsuperscript{29}

Based on the literature review above, the position of this research is different from that of previous studies. This research combines cooperative learning with a matching game technique. This approach has yet to be explored in the context of Arabic vocabulary learning in junior high school. This research focuses explicitly on Arabic vocabulary acquisition, an essential foundation for

\textsuperscript{22} Ni Putu Suantini, Gede Satya Hermawan, and I Wayan Sadyana, “Penerapan Kooperatif Teknik Permainan Roda Kebertarungan (Wheel of Fortune) untuk Meningkatkan Penguasaan Kosakata Bahasa Jepang,” Jurnal Pendidikan Bahasa Jepang Undiksha 2, no. 2 (2016): 1-10. DOI: https://doi.org/10.23887/jpbj.v2i2.7852


\textsuperscript{24} Siti Syara Asiyah, “Pengaruh Model Pembelajaran Kooperatif Teams Games Tournament dengan Media Giant Board Game Terhadap Hasil Belajar Bahasa Arab (Penelitian Eksperimen di Kelas 8 SMP Al-Ghurabaa Jakarta),” (Skripsi, Universitas Negeri Jakarta, 2023). http://repository.unijakarta.ac.id/id/eprint/42703


\textsuperscript{27} Abdul Hazif Nur Fuadi et al., “Penerapan Permainan Nahwu Matching dalam Pembelajaran Isim Isyarab,” Al Mi’yar: Jurnal Ilmiah Pembelajaran Bahasa Arab dan Kebahasaaraban 7, no. 1 (2024): 501. DOI: https://doi.org/10.35931/am.v7i1.2452

\textsuperscript{28} Risya Julia Rachmawati, “The Effectiveness of Using Word Matching Games on Students’ Vocabulary (A Quasi-Experimental Study at the Eighth Grade of MTIN 1 South Tangerang in Academic Year 2019/2020),” (Skripsi, FITK UIN Syarif Hidayatullah Jakarta, 2019). http://repository.unijakarta.ac.id/dspace.handle/123456789/49602

\textsuperscript{29} Fatha Maulana, “Penggunaan Teknik Permainan Mencocokkan Kata dan Gambar untuk Meningkatkan Penguasaan Kosakata Bahasa Jepang,” (Skripsi, Universitas Negeri Jakarta, 2021). http://repository.unijakarta.ac.id/id/eprint/19499
developing other language skills. The research used a quasi-experimental design with control and experimental groups to evaluate its effectiveness in enhancing students' Arabic vocabulary acquisition. The literature review shows that this research makes practical and theoretical contributions to language education. This research offers a learning model that can be widely implemented to enhance Arabic vocabulary acquisition. Theoretically, this research adds to the literature regarding the effectiveness of game-based cooperative learning. The focus of this research is to find out whether cooperative learning based on word-matching games can significantly change the level of students' Arabic vocabulary mastery. The research questions were: Can cooperative learning based on word-matching games enhance students' mastery of Arabic vocabulary in class VIII MTs Negeri 1 Bandung City? The hypothesis tested is that using a cooperative learning model based on a word-matching game will significantly enhance students' mastery of Arabic vocabulary compared to the conventional method.

Thus, this research is expected to help students of grade VIII MTs Negeri 1 Kota Bandung enhance their mastery of Arabic vocabulary from the material taught, make students more active in learning, and eliminate the perception that learning Arabic vocabulary is boring and saturating. This research is also expected to make a new contribution to Arabic vocabulary learning and become a reference for educational practitioners who want to design learning strategies that are more optimal and fun. Implementing a cooperative learning model based on a word-matching game is expected to create a more interactive learning atmosphere and motivate students to be more active in learning Arabic, especially in learning Arabic vocabulary, so that the learning objectives of Arabic can be achieved more effectively.

**Method**

This research uses quantitative quasi-experimental research. Quasi-experimental research tests and proves hypotheses about the presence or absence of the effect of treatment compared to other treatments by controlling the variables by existing conditions. The reason the researchers used the quasi-experimental research method is first because the research sample was taken through a purposive sampling technique, namely the selection of samples not randomly and has a purpose, and second because this research aims to find out the effect of cooperative learning through word-matching games with Arabic vocabulary learning in experimental and control classes.

The type of research design used in this research is a pre-test, post-test, non-equivalent control group design. This design requires two sample groups: the control and experimental groups. The control group is not given any treatment and uses conventional methods, while the experimental group is given treatment through cooperative learning based on a word-matching game. Both classes will be given a test before the learning begins and another after the treatment on Arabic vocabulary learning is completed. This type of design is the most commonly used design in educational research.

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This research aims to understand the differences that occur before and after treatment. This research assesses students' mastery of Arabic vocabulary before and after using cooperative learning based on word-matching games. The research design used in this research is as follows:

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Treatment</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>O₁</td>
<td>X₁</td>
<td>O₂</td>
</tr>
<tr>
<td>Control</td>
<td>O₃</td>
<td>X₂</td>
<td>O₄</td>
</tr>
</tbody>
</table>

Description:
- O₁: Experimental group pre-test
- O₂: Post-test of the experimental group
- X₁: Arabic vocabulary learning using word-matching game technique
- X₂: Arabic vocabulary learning using a conventional technique
- O₃: Control group pre-test
- O₄: Post-test of control group

Based on Table 1, it is found that this research used an experimental design with two groups: the experimental group and the control group. The experimental group received Arabic vocabulary learning treatment using a word-matching game technique, while the control group used a conventional learning technique. The research results were measured through pre-test and post-test in both groups to compare their effectiveness on students' Arabic vocabulary mastery. The population in this research were VIII grade students of MTs Negeri 1 Bandung City in the academic year 2023/2024. The samples were selected using a purposive sampling technique, namely class VIII E as the experimental class and class VIII B as the control class, each with 30 students. Furthermore, the data collection methods used in this research include observation, interviews, and tests. The instrument used in this research was an Arabic vocabulary mastery test made in the form of Google Forms. This test consisted of 20 multiple-choice items tested for validity and reliability in class VIII D of the 20 items, 16 were declared valid and reliable.

In analyzing the data, researchers used the Paired Sample Test to compare differences in the results before and after the test of each group. The stages of the analysis carried out are as follows: (1) Calculating the average value of the pre-test and post-test (2) Performing a normality test with the Shapiro-Wilk method (3) After conducting a normality test, then conducting a data homogeneity test (4) After obtaining normal and homogeneous distribution data, then calculate the t-test for hypothesis testing. With testing standards, if the t-count > t-table value, then Ho is rejected, and Ha is accepted, which means there is a significant difference. But if, on the contrary, the value of t-count < t-table, then Ho is accepted, and Ha is rejected, meaning there is no significant difference.

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55 Sugiyono, Metode Penelitian Pendidikan Kuantitatif Kualitatif dan R&D, (Bandung: Alfabeta, 2013), hlm. 79.
5) The gain test was conducted to get an overall picture of increased students’ mastery of Arabic vocabulary before and after treatment. The increase was calculated using the formula developed by Hake, namely, Normalized Gain (g) = post-test score - pre-test score: ideal score (max) - pre-test score.\(^{38}\)

Result and Discussion

This research raised the variables, namely the independent variable word-matching game, and the dependent variable, namely students’ mastery of Arabic vocabulary. Researchers used the average students’ end-of-semester assessment (PAS) results in Arabic subjects as initial data. Then, a multiple choice test was given through Google Forms to obtain the results of students’ Arabic vocabulary skills. This test is packaged in the form of pre-test and post-test exams. This research obtained data from pre-test and post-test tests conducted in the experimental class, class VIII E, and the control class, class VIII B. The two classes were selected for the pre-test and post-test tests in this design. In this design, the two classes were chosen with specific considerations. First, the number of students is the same. Second, the average value of the student’s midterm exam is almost the same.\(^{39}\) Class VIII E was chosen as the experimental class because the pre-test results showed that the scores obtained were smaller than those of the control class.

The pre-test results showed that class VIII E got an average score of 60 on the test, and class VIII B got an average score of 61. The researcher used the pre-test results as a reference and then used conventional methods to treat the experimental class by applying word-matching game-based cooperative learning and the control class.\(^{40}\) The researcher prepared the media in 4 game boards containing 28 vocabulary words or 14 pairs of questions and answers. Each game board will be attached with 14 clue cards that students will match. Furthermore, the experimental class followed two treatment sessions with cooperative learning based on a word-matching game. Each treatment session involved dividing small groups, giving instructions, implementing the matching game for 15-20 minutes, and evaluating the Arabic teacher.\(^{41}\) The steps of applying word-matching game in learning Arabic vocabulary are described in Figure 1:

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\(^{38}\) Rostina Sundayana, *Statistika Penelitian Pendidikan*, (Bandung: Alfabeta, 2016), hlm. 162.


**Media Preparation:** The teacher prepares a sturdy, rectangular, preboard game board containing 28 vocabulary cards about professions (المهنة) in Arabic and their translations in Indonesian. Some cards are used as clue cards and attached to the game board.

**Group Distribution:** Students were divided into four groups, each consisting of 7-8 students. Each group chooses a leader to take the board and game cards from the teacher.

**Game Implementation:** Each group matches the Arabic vocabulary cards with their translations on the game board.

Each group makes sure the words match in terms of meaning and spelling. Groups earn points for each correct pair of words, with extra points for difficult words.

**Winner Determination:** The game ends when all the words on the game board have been matched. The group with the most points and the fastest is declared the winner.

**Evaluation:** The teacher discusses the game and the learning that has been done with the students.

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Based on Figure 1, the word-matching game technique consists of several important stages, from media preparation, group division, and game implementation to determine the winner to evaluation. These stages are designed to ensure students not only understand Arabic vocabulary but are also able to apply it correctly through active interaction within the group. After the treatment, a post-test was administered to both classes to evaluate the students’ final ability after receiving the treatment. This research discusses an innovative learning approach to enhance Arabic vocabulary proficiency among MTs Negeri 1 Bandung City eighth-grade students. The material focus used in this research is the theme of المهنة (profession), with Arabic vocabulary that includes verbs and nouns related to work. While applying the word-matching game, the researcher observed that students were more excited and enthusiastic about learning compared to the conventional method used before. This technique involves the role of students, which turns out to be effective in

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increasing engagement, learning outcomes, and students’ interest in learning Arabic, especially in learning Arabic vocabulary. From interviews with several students during the treatment process, the researcher’s observation shows that students find memorizing nouns easier than memorizing verbs.\textsuperscript{44} This can be seen from their quick response in matching the questions and answers of Arabic nouns, which tend to be faster than Arabic verbs. After the game was over, the teacher evaluated the results of the game and identified some Arabic vocabulary that the students found quite difficult, such as يطفئي (to extinguish), سائق الحافلة (bus driver), عامل الاهتمام (janitor), ينظّم (to organize), and يعالج (to treat).\textsuperscript{45} Nonetheless, each group of students completed the game well, showing that this technique was effective in helping them master the given Arabic vocabulary. This is in line with the research of Rahmawati et al. entitled "Improving Students' Vocabulary Mastery by Using Word-Matching Technique of The Seventh Grade SMP TD Pardede Foundation," which proves that the word-matching game technique can enhance the English vocabulary of seventh-grade students of SMP TD Pardede Foundation.\textsuperscript{46}

**Statistical Test Analysis of Word-Matching Game Technique**

The pre-test and post-test scores of the control and experimental classes were obtained based on the student data collected. Then, descriptive analysis was carried out on each variable. Descriptive analysis using the help of the SPSS version 25.0 program with the results in Table 2 below:

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Test Experiment</td>
<td>30</td>
<td>30</td>
<td>100</td>
<td>60.37</td>
<td>16.238</td>
</tr>
<tr>
<td>Post-Test Experiment</td>
<td>30</td>
<td>48</td>
<td>100</td>
<td>81.27</td>
<td>14.295</td>
</tr>
<tr>
<td>Pre-Test Control</td>
<td>30</td>
<td>30</td>
<td>100</td>
<td>61.33</td>
<td>15.953</td>
</tr>
<tr>
<td>Post-Test Control</td>
<td>30</td>
<td>42</td>
<td>100</td>
<td>72.23</td>
<td>14.552</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on Table 2, it was found that the most minor pre-test score in the experimental group was 30, and the largest score was 100, with an average of 60.37. In the control group, the minor pre-test score was 30, and the largest score was 100, averaging 61.33. For the post-test, the most minor score in the experimental group was 48, and the largest score was 100, with an average increase of 81.27. In the control group, the smallest value of the post-test was 42, and the largest value was 100, with an average increase of 72.23.

From the descriptive data, the average pre-test value in both groups is relatively the same, around 60-61. However, after the treatment, the average post-test score in the experimental group increased more significantly compared to the control group. This shows that the word-matching

\textsuperscript{44} Interview with Hilmi Hakim (Student of Class VIII E Experiment Class at MTs Negeri 1 Bandung, Bandung), Wednesday, May 15, 2024, at 13.30 WIB.

\textsuperscript{45} Interview with Gun Gun Gumilar (Arabic Language Teacher at MTs Negeri 1 Bandung, Bandung), Wednesday, May 15, 2024, at 15.00 WIB.

game technique is more effective in enhancing the mastery of Arabic vocabulary than the conventional method. The next step is to conduct a prerequisite data analysis test, the first of which is the normality test.\(^{47}\)

Researchers conducted a normality test using the Shapiro-Wilk method to determine whether the data followed a normal distribution. The Shapiro-Wilk test is a technique or formula for measuring data distribution developed by Shapiro and Wilk. This method is effective and valid for testing normality with small sample data, namely, less than or equal to 50 samples.\(^{48}\) The data is not normally distributed if the significance level is <0.05. The data is normally distributed if the significance level is > 0.05. For more details, the research results are shown in Table 3.

<table>
<thead>
<tr>
<th>Normality Test</th>
<th>Group</th>
<th>Shapiro-Wilk Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Test</td>
<td>Students in Grade VIII of E Class</td>
<td>.963</td>
<td>30</td>
<td>.369</td>
</tr>
<tr>
<td></td>
<td>Students in Grade VIII of B Class</td>
<td>.965</td>
<td>30</td>
<td>.418</td>
</tr>
<tr>
<td>Post-Test</td>
<td>Students in Grade VIII of E Class</td>
<td>.941</td>
<td>30</td>
<td>.097</td>
</tr>
<tr>
<td></td>
<td>Students in Grade VIII of B Class</td>
<td>.957</td>
<td>30</td>
<td>.255</td>
</tr>
</tbody>
</table>

Based on Table 3, it was found that the pre-test normality test using Shapiro Wilk and SPSS 25 showed a significance value for students in class VIII E (experimental class) of 0.369. The significance value in the pre-test for students in class VIII B (control class) was 0.418. These significance values are greater than 0.05, indicating that the pre-test data distribution in both classes is normal.\(^{49}\) The significance value for the post-test normality test for students in class VIII E (experimental class) was 0.097. The significance value on the post-test for class VIII B (control class) students was 0.255. Both of these significance values are also greater than 0.05, so it can be concluded that the distribution of post-test data in the experimental class and control class is also normal.

Thus, based on the results of the pre-test and post-test normality tests obtained, both pre-test and post-test data in both groups showed normal distribution, therefore fulfilling the prerequisites for further data analysis. Furthermore, a homogeneity test was conducted to assess the similarity of variances between the two groups, experimental and control. To accept or reject the hypothesis, the homogeneity test results were compared with the value of 0.05 (sig > 0.05) Leven's statistic.\(^{50}\) For more details, the homogeneity test results are shown in Table 4.

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\(^{50}\) Rektor Sianturi, “Uji Homogenitas Sebagai Syarat Pengujian Analisis,” Jurnal Pendidikan, Sains Sosial, dan Agama 8, no. 1 (2022): 386–97. DOI: [https://doi.org/10.53565/pssa.v8i1.507](https://doi.org/10.53565/pssa.v8i1.507)
Table 4. Homogeneity Test

<table>
<thead>
<tr>
<th>Result</th>
<th>Levene Statistic</th>
<th>Df1</th>
<th>Df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on Mean</td>
<td>.012</td>
<td>1</td>
<td>58</td>
<td>.912</td>
</tr>
<tr>
<td>Based on Median</td>
<td>.018</td>
<td>1</td>
<td>58</td>
<td>.894</td>
</tr>
<tr>
<td>Based on the Median and with adjusted df</td>
<td>.018</td>
<td>1</td>
<td>56.584</td>
<td>.894</td>
</tr>
<tr>
<td>Based on trimmed mean</td>
<td>.012</td>
<td>1</td>
<td>58</td>
<td>.914</td>
</tr>
</tbody>
</table>

Based on Table 4, it is found that the results of the homogeneity test show the value of Sig. Based on the average for the post-test variables of the experimental and control groups is 0.912, which is greater than 0.05. This shows that the data variance in both groups is homogeneous. Then, one of the requirements of the T-test has been fulfilled. The results of this homogeneity test fulfill one of the prerequisites for conducting the T-test. After it is known that the data from the control and experimental groups are normally distributed and homogeneous, the next step is to conduct a T-test. The T-test is used to determine whether there is a difference in the post-test results of students from the experimental group and the post-test results from the control group. This analysis was carried out with the help of SPSS 25 using the paired sample test with a significance level of <0.05. The following is the hypothesis formulation:

Hₐ : There is a significant difference between before and after the application of cooperative learning based on word-matching games on Arabic vocabulary mastery of class VIII students of MTs Negeri 1 Bandung City.

H₀ : There is no difference before and after the application of cooperative learning based on word-matching games on students' mastery of Arabic vocabulary in class VIII MTs Negeri 1 Bandung City.

With testing standards, if the Sig. (2-tailed) <0.05, then there is a significant difference between the pre-test and post-test learning outcomes. Conversely, if the Sig. (2-tailed) > 0.05, then there is no significant difference between the pre-test and post-test learning outcomes displayed in Table 5 below:

Table 5. Paired Samples Test

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Std. Deviation Mean</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimantal Class</td>
<td>Pre-Test -20.900</td>
<td>11.189</td>
<td>-25.078 -16.722</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Post-Test 2.043</td>
<td></td>
<td>10.23</td>
<td>29</td>
</tr>
</tbody>
</table>

---

Hanifah, et.al : Cooperative Learning Based on Word-Matching Game to Enhance Mastery...

<table>
<thead>
<tr>
<th>Control Class</th>
<th>Pre-Test</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-10.900</td>
<td>9.721</td>
</tr>
<tr>
<td></td>
<td>1.775</td>
<td>-14.530</td>
</tr>
<tr>
<td></td>
<td>-7.270</td>
<td>-6.141</td>
</tr>
<tr>
<td></td>
<td>29.000</td>
<td>29.000</td>
</tr>
</tbody>
</table>

Based on Table 5, it is found that the significance value (2-tailed) between the pre-test and post-test in both groups is 0.000 <0.05. This shows a significant difference before and after using the word-matching game technique in students' mastery of Arabic vocabulary.

**Enhancement Arabic Vocabulary Mastery Through Word-Matching Game**

The data used came from the post-test results in the experimental and control classes. This research used the N-Gain Score test to evaluate the significance of the word-matching game technique, assisted by SPSS 25 software. The following are the results of the interpretation of the N-Gain index defined by Hake in Table 6:

**Table 6. Interpretation Categories of N-Gain Effectiveness**

<table>
<thead>
<tr>
<th>Percentage (%)</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;40</td>
<td>Ineffective</td>
</tr>
<tr>
<td>40-55</td>
<td>Less Effective</td>
</tr>
<tr>
<td>56-75</td>
<td>Moderately</td>
</tr>
<tr>
<td>&gt;76</td>
<td>Effective</td>
</tr>
</tbody>
</table>


Based on Table 6, there are several categories of interpretation of N-Gain effectiveness based on the percentage increase. N-Gain is a method used to evaluate how effectively an intervention or treatment enhances student learning outcomes. The N-Gain percentage is calculated from the change in pre-test to post-test scores. The treatment method is considered ineffective if the N-Gain percentage is less than 40%. That is, there needs to be more emphasis in student learning outcomes after applying the method. The method is less effective if the N-Gain percentage is between 40% and 55%. This indicates an increase in student learning outcomes, but the increase is insignificant. The method is considered moderately effective if the N-Gain percentage is between 56% and 75%. This means there is a significant increase in student learning outcomes, but there is still room for enhancement. The method is highly effective if the N-Gain percentage is more than 76%. This indicates a significant enhancement in student learning outcomes after applying the method. The results of the N-Gain test with the help of SPSS 25 software are shown in Table 7 below:

---


Table 7. Description of Averages for the Normalized N-Gain Tests

<table>
<thead>
<tr>
<th>Normalized Gain Test</th>
<th>Gain</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Kategori</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Class</td>
<td>56.5535</td>
<td>10.34</td>
<td>100.00</td>
<td>Moderately Effective</td>
</tr>
<tr>
<td>Control Class</td>
<td>30.5046</td>
<td>-17.65</td>
<td>100.00</td>
<td>Ineffective</td>
</tr>
</tbody>
</table>

Based on Table 7, it was found that the average value of N-Gain in the experimental class (VIII E) was 56.5535 or 56.5%, with a minimum value of 10.34% and a maximum of 100%. Based on the effectiveness category in Table 6, the average N-Gain value is included in the “Moderately Effective” category. Meanwhile, the average value of N-Gain in the control class (VIII B) was 30.5046 or 30.5% with a minimum value of -17.65% and a maximum of 100%. Based on the effectiveness category in Table 6, the average value of N-Gain in the control class is included in the “Not Effective” category. Thus, it is concluded that cooperative learning based on word-matching game applied in the experimental class is effective enough to enhance the mastery of Arabic vocabulary in Arabic language subject (Profession). This result shows that cooperative learning based on word-matching games enhances students' mastery of Arabic vocabulary more effectively than the conventional method.

This research's results align with the findings obtained by several previous studies. For example, research by Rachmawati, who used the word-matching game technique, reported increased students' mastery of English vocabulary and motivation in learning vocabulary. In addition, research by Ismail et al., which examined cooperative learning in enhancing Arabic vocabulary mastery, showed that the use of game techniques in learning can increase student motivation and participation. The results showed significant enhancement in Arabic vocabulary acquisition after the application of educational games, which is similar to the findings in this research. Some of these research results support that word-matching games effectively enhance students' mastery of Arabic vocabulary.

The benefits of the word-matching game technique in Arabic language learning show its effectiveness in enhancing students' mastery of Arabic vocabulary. However, along with these successes, some weaknesses may arise. First, some students may be less active in group participation during the game, which may reduce collaboration and hinder the learning process. Therefore, additional motivational strategies are needed to encourage active participation from all students. Secondly, students' seriousness and thoroughness in matching vocabulary cards must be enhanced to ensure accuracy in the learning process. Teachers can provide additional directions or...
clarify the game rules to enhance students' accuracy. Third, the game atmosphere needs to be organized in such a way that it is more orderly and structured so that students can focus more on learning. This aligns with Muhimmah's research, which also reveals shortcomings or weaknesses of this word-matching game technique. The disadvantage of applying the word-matching game technique is that it is difficult for the teacher to control when students are playing. By identifying and overcoming these weaknesses, this technique can be more effective in providing meaningful learning experiences for students.

Teachers can apply several suggestions to enhance learning effectiveness based on the word-matching game process. First, teachers are advised to create an interesting and dynamic game atmosphere to increase students' learning motivation. Second, it is necessary to emphasize that students should pay attention to accuracy in matching vocabulary cards to ensure learning success. Lastly, teachers must build students' confidence and encourage them to have a strong will in mastering Arabic vocabulary. This aligns with Azizah et al.'s statement in their research that teachers liven up the game atmosphere. By implementing these suggestions, learning using word-matching games is expected to be more effective and enhance students' mastery of Arabic vocabulary.

The practical implications of this research are quite clear. Teachers in schools/madrasas can adopt word-matching games as an alternative learning technique to enhance students' mastery of Arabic vocabulary. Teachers can customize and develop the game material according to the difficulty level and students' needs. This research has several limitations that need to be considered. First, the research sample limited to grade VIII students in one school may not represent the wider population. Therefore, generalization of the results of this research needs to be done with caution. Secondly, this research only measured the mastery of Arabic vocabulary through a test administered through Google form, so it did not evaluate the reading, speaking, listening, and writing skills in Arabic. Thirdly, the relatively short duration of the research may not be enough to see the long-term effects of this learning technique. Fourth, this research did not control external factors such as learning environment and family support, which may affect the results. This aligns with Rachmawati et al.'s statement that external factors affect students' difficulties in mastering Arabic vocabulary. Further research involving a larger sample, longer duration, and external factors control is needed to overcome these limitations and strengthen the research findings.

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Closing

This research confirms that word-matching games can significantly enhance the mastery of Arabic vocabulary of VIII grade students at MTs Negeri 1 Bandung City. This finding provides a concrete answer to the research question regarding word-matching game-based cooperative learning as an alternative learning technique to enhance students' mastery of Arabic vocabulary.

Based on the research results, the implementation procedure has proven that the learning process uses a cooperative learning based on a word-matching game. In addition, there is a significant difference between the experimental and control classes in Arabic vocabulary mastery, which shows the success of this technique in enhancing students' understanding. This is shown by the average post-test score of the experimental class students of 81.27 and the control class of 72.23. The T-test analysis shows that the significant value (2-tailed) is 0.000 <0.05, which means that the alternative hypothesis (Ha) is accepted, indicating a significant difference between the mastery of Arabic vocabulary of experimental class students and control class students. It can be concluded that cooperative learning based on word-matching games can be applied as an alternative solution to enhance students' mastery of Arabic vocabulary, especially in class VIII at MTs Negeri 1 Bandung City and in other schools/madrasas. The capital of mastery of Arabic vocabulary is expected to facilitate students mastering the four Arabic language skills, namely reading, speaking, listening, and writing skills, as has been revealed in previous studies.

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