

**THESIS**  
**THE EFFECTIVENESS OF PELMANISM GAME USING COUPLE CARDS FOR**  
**SEVENTH GRADE STUDENT' VOCABULARY MASTERY**



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THESIS

THE EFFECTIVENESS OF PELMANISM GAME USING COUPLE CARDS  
FOR SEVENTH GRADE STUDENT' VOCABULARY MASTERY

*Submitted to Fullfil One of The Requirement for the Degree of English Language  
Teaching (S.Pd.) in the Department of English Language Education, Faculty of  
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2026

**APPROVAL SHEET**

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FOR SEVENTH GRADE STUDENT' VOCABULARY MASTERY**

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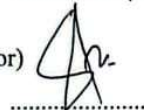
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Malang, June 19<sup>th</sup>, 2026

The Honorable,  
Dean of Education and Teacher Training Faculty  
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*Assalamu'alaikum Wr. Wb*

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## DECLARATION OF RESEARCHERSHIP

*Bismillahirrahmaanirrahiim*

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Vocabulary Mastery Declare that:

1. This thesis has never been submitted to any other tertiary education institution for any other academic degree.
2. This thesis is the sole work of the researcher and has not been written in collaboration with any other person, nor does it include, without due acknowledgment, the result of any other person.
3. Should it later be found that this thesis is product of plagiarism, I am willing to accept any legal consequences that may be imposed on me.

Malang, June 19<sup>th</sup> 2026  
The Researcher,

  
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NIM. 19180064

## **MOTTO**

*No matter what happened in your life, don't give up!*

## **DEDICATION**

I dedicate this thesis to Allah SWT, for His grace, taufiq and guidance who has always accompanied me on this journey. I also dedicate it to my parents, thank you for all the love, prayers and hard work that led me to complete this long journey. My sincere gratitude to my lecturers and supervisors, thank you for the guidance, patience and knowledge that has been given to me as a form of my academic journey. Finally, I dedicate this thesis to my friends, thank you for always supporting, accompanying and decorating my lecture periods.

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May Allah SWT reward all goodness with an abundance of mercy and blessings to all of them both in this world and in the hereafter. The researcher hopes that this thesis can be useful for readers, especially English teachers, students, and future researchers.

## LATIN-ARABIC TRANSLITERATE GUIDELINES

The Arabic-Latin transliterate in this thesis uses transliterate guidelines based on a joint decision of the Minister of Religion of the Republic of Indonesia and the Minister of Education and Culture of the Republic of Indonesia No. 158 of 1987 and No. 0543b/U/1987 which can be described as follows:

### A. Alphabet

|              |        |       |
|--------------|--------|-------|
| ا = A        | ز = Z  | ق = q |
| ب = B        | س = S  | ك = k |
| ت = T        | ش = Sy | ل = l |
| ث = Ts       | ص = Sh | م = m |
| ج = J        | ض = Dl | ن = n |
| ح = <u>H</u> | ط = Th | و = w |
| خ = Kh       | ظ = Zh | ه = h |
| د = D        | ع = ‘  | ء = ‘ |
| ذ = Dz       | غ = Gh | ي = y |
| ر = R        | ف = F  |       |

### B. Long Vowels

Long (a) vowel = â

Long (i) vowel = î

Long (u) vowel = û

### C. Diphthong Vowels

أَوْ = aw

أَيَّ = ay

أُو = û

إِي = î

## TABLE OF CONTENT

|                                             |       |
|---------------------------------------------|-------|
| APPROVAL SHEET .....                        | ii    |
| ADVISOR'S NOTE.....                         | iv    |
| DECLARATION .....                           | v     |
| MOTTO.....                                  | vii   |
| DEDICATION .....                            | viii  |
| ACKNOWLEDGEMENT .....                       | ix    |
| LATIN-ARABIC TRANSLITERATE GUIDELINES.....  | xi    |
| TABLE OF CONTENT .....                      | xii   |
| LIST OF TABLE.....                          | xvi   |
| LIST OF FIGURE.....                         | xvii  |
| ABSTRAK.....                                | xviii |
| ABSTRACT .....                              | xix   |
| الملخص .....                                | xx    |
| CHAPTER I.....                              | 1     |
| INTRODUCTION .....                          | 1     |
| 1.1 Background of the Study .....           | 1     |
| 1.2 Research Question .....                 | 5     |
| 1.3 Objective of the Study .....            | 6     |
| 1.4 Significance of the Study.....          | 6     |
| 1.5 Scope and Limitation of this Study..... | 6     |
| 1.6 Definitions of Key Terms .....          | 7     |
| CHAPTER II .....                            | 8     |
| LITERATURE REVIEW .....                     | 8     |
| 2.1 The Concept of Vocabulary .....         | 8     |

|                                                         |           |
|---------------------------------------------------------|-----------|
| 2.1.1 Kind of Vocabulary .....                          | 9         |
| 2.1.2 Vocabulary Mastery .....                          | 11        |
| 2.1.3 The Importance of Vocabulary .....                | 12        |
| 2.2 Pelmanism Game .....                                | 14        |
| <b>CHAPTER III.....</b>                                 | <b>18</b> |
| <b>METHODOLOGY .....</b>                                | <b>18</b> |
| 3.1 Research Design.....                                | 18        |
| 3.1.1 Pre-Test .....                                    | 19        |
| 3.1.2 Treatment.....                                    | 19        |
| 3.1.3 Post-Test.....                                    | 20        |
| 3.2 Research Sample .....                               | 20        |
| 3.3 Research Instrument.....                            | 21        |
| 3.3.1 Validity .....                                    | 21        |
| 3.3.2 Reliability .....                                 | 22        |
| 3.4 Data Collection .....                               | 23        |
| 3.5 Data Analysis .....                                 | 23        |
| 3.5.1 Normality Test.....                               | 24        |
| 3.5.2 Homogeneity Test.....                             | 24        |
| 3.5.3 Hypothesis Test.....                              | 25        |
| <b>CHAPTER IV .....</b>                                 | <b>26</b> |
| <b>FINDING AND DISCUSSION .....</b>                     | <b>26</b> |
| 4.1 Finding.....                                        | 26        |
| 4.1.1 Data Analysis of Pre-Test .....                   | 26        |
| 4.1.2 Data Analysis of Post-Test .....                  | 29        |
| 4.1.3 Students' Achievement in Vocabulary Mastery ..... | 32        |
| 4.1.4 Result of Validity Testing .....                  | 33        |
| 4.1.5 Result of Reliability Testing .....               | 33        |

|                                                                  |           |
|------------------------------------------------------------------|-----------|
| 4.1.6 Result of Normality Testing .....                          | 34        |
| 4.1.7 Result of Homogeneity Testing .....                        | 36        |
| 4.1.8 Result of T-test and Hypothesis Testing.....               | 36        |
| 4.2 Discussion .....                                             | 37        |
| <b>CHAPTER V .....</b>                                           | <b>40</b> |
| <b>CONCLUSION.....</b>                                           | <b>40</b> |
| 5.1 Conclusion.....                                              | 40        |
| 5.2 Suggestion .....                                             | 41        |
| 5.2.1 For English Teachers .....                                 | 41        |
| 5.2.2 For Students.....                                          | 41        |
| 5.2.3 For Future Researchers .....                               | 41        |
| <b>REFERENCES .....</b>                                          | <b>42</b> |
| <b>APPENDICES .....</b>                                          | <b>46</b> |
| <b>Appendix A : Pre-test and Post-test.....</b>                  | <b>46</b> |
| 1. Pre-test and Post-test .....                                  | 46        |
| 1. Validation Test.....                                          | 47        |
| 2. Student Answer Sheet .....                                    | 50        |
| <b>Appendix B : Teaching Media.....</b>                          | <b>51</b> |
| <b>Appendix C : Extended Table from Chapter 4 .....</b>          | <b>52</b> |
| 1. The Result of Pre-Test Experimental Class .....               | 52        |
| 2. The Result of Pre-test Control Class .....                    | 53        |
| 3. The Result of Post-test experimental Class .....              | 54        |
| 4. The Result of Post-test Control Class .....                   | 55        |
| 5. The Result of Pre-test and Post-test Experimental Class ..... | 56        |
| 6. The Result of Pre-test and Post-test Control Class .....      | 58        |
| 7. Result of Validity Testing .....                              | 59        |
| 8. Result of Reliability Testing .....                           | 62        |

|                                                          |    |
|----------------------------------------------------------|----|
| 9. Result of Normality Testing .....                     | 65 |
| 10. Result of Homogeinity Testing .....                  | 67 |
| 11. Gain Score Experimental Class and Control Class..... | 68 |
| Appendic D : Documentation .....                         | 69 |
| 1. During Activities .....                               | 69 |
| 2. Research Permit .....                                 | 71 |
| Appendic E : Consultation Sheet .....                    | 72 |
| Appendix F : Curriculum Vitae .....                      | 73 |
| Curriculum Vitae.....                                    | 73 |

## LIST OF TABLE

|                                                                                |           |
|--------------------------------------------------------------------------------|-----------|
| <b>Table 1 The Experimental Design .....</b>                                   | <b>18</b> |
| <b>Table 2 The Result of Pre-Test Experimental Class .....</b>                 | <b>52</b> |
| <b>Table 3 Descriptive Statistic of Pre-test Experimental Class.....</b>       | <b>26</b> |
| <b>Table 4 The Result of Pre-Test Control Class .....</b>                      | <b>53</b> |
| <b>Table 5 Descriptive Statistic of Pre-Test Control Class .....</b>           | <b>28</b> |
| <b>Table 6 The Result of Post-Test Experimental Class.....</b>                 | <b>54</b> |
| <b>Table 7 Descriptive Statistic of Post-Test Experimental Class .....</b>     | <b>30</b> |
| <b>Table 8 The Result of Post-Test Control Class.....</b>                      | <b>55</b> |
| <b>Table 9 Descriptive Statistic of Post-Test Control Class .....</b>          | <b>32</b> |
| <b>Table 10 The Result of Pre-Test and Post- Test Experimental Class .....</b> | <b>56</b> |
| <b>Table 11 The Result of Pre-Test and Post- Test Control Class .....</b>      | <b>58</b> |

## LIST OF FIGURE

|                                                            |    |
|------------------------------------------------------------|----|
| Figure 1 Collect Couple Cards Until You Have The Most..... | 16 |
| Figure 2 Match The Couple Cards .....                      | 16 |
| Figure 3 Cards Collected .....                             | 16 |
| Figure 4 Line Up According To Group.....                   | 16 |
| Figure 5 Post-test Experimental Class .....                | 30 |
| Figure 6 Post-test Control Class .....                     | 31 |
| Figure 7 Normality pretest Experimental.....               | 34 |
| Figure 8 Normality Pretest Control.....                    | 34 |
| Figure 9 Normality Posttest Experimental .....             | 35 |
| Figure 10 Normality Posttetst Control.....                 | 35 |
| Figure 11 Homogeneity Test .....                           | 36 |
| Figure 12 Homogeneity of Post-test.....                    | 36 |
| Figure 13 Homogeneity of Post-test.....                    | 36 |
| Figure 14 Homogeneity of Post-test.....                    | 36 |
| Figure 15 Result T-test.....                               | 37 |

## ABSTRAK

Romaita, Dwi. 2026. Keefektifan Permainan Pelmanisme Menggunakan Kartu Pasangan untuk Penguasaan Kosakata Siswa Kelas Tujuh. Skripsi. Jurusan Pendidikan Bahasa Inggris, Fakultas Ilmu Tarbiyah dan Keguruan, Universitas Islam Negeri Maulana Malik Ibrahim Malang. Pembimbing: Septia Dwi Jayanti, M.Pd.

**Kata Kunci :** Permainan Pelmanisme, kartu pasangan, penguasaan kosakata, penelitian kuasi-eksperimental, pembelajaran bahasa Inggris.

Penelitian ini bertujuan untuk menyelidiki keefektifan permainan Pelmanisme menggunakan kartu pasangan terhadap penguasaan kosakata siswa kelas tujuh SMP ABC Malang. Menggunakan pendekatan kuantitatif dengan desain kuasi-eksperimental. Penelitian ini mengumpulkan sejumlah 60 siswa kelas tujuh, dengan masing-masing kelas 30 siswa sebagai partisipan yang dibagi menjadi kelas eksperimen (VII F) dan kelas kontrol (VII H). Pengumpulan data melalui pra-uji dan pasca-uji yang terdiri dari beberapa pilihan ganda tentang kosakata. Analisis data menggunakan uji validitas dan reliabilitas, uji normalitas dan homogenitas, dan uji t sampel independen. Hasil penelitian ini menunjukkan nilai rata-rata kelas eksperimen 56,00 pada pra-uji menjadi 75,33 pada pasca-uji, sedangkan rata-rata kelas kontrol 46,00 menjadi 66,66. Namun, ditemukan tidak adanya pengaruh yang signifikan keefektifan permainan Pelmanisme menggunakan kartu pasangan terhadap penguasaan kosakata siswa karena pada pengujian hipotesis menunjukkan nilai signifikansi adalah 0,768 ( $>0,005$ ). Media pembelajaran tersebut tetap dapat digunakan untuk pembelajaran kosakata siswa, serta menciptakan suasana pembelajaran yang menyenangkan dan lebih interaktif meskipun tidak ditemukan pengaruh yang signifikan.

## ABSTRACT

Romaita, Dwi. 2026. The Effectiveness of Pelmanism Game Using Couple Cards for Seventh Grade Students' Vocabulary Mastery. Thesis. Department of English Education, Faculty of Tarbiyah and Teacher Training, Maulana Malik Ibrahim State Islamic University Malang. Supervisor: Septia Dwi Jayanti, M.Pd.

**Keywords:** Pelmanism Game, Couple Cards, Vocabulary Mastery, Quasi-Experimental Research, English Language Learning.

This study aims to investigate the effectiveness of the Pelmanism game using couple cards on the vocabulary mastery of seventh grade students of SMP ABC Malang. Using a quantitative approach with a quasi-experimental design. The study collected a total of 60 seventh-graders, with each class of 30 students as participants divided into experimental classes (VII F) and control classes (VII H). Data collection through pre-tests and post-tests consisting of multiple choices on vocabulary. Data analysis used validity and reliability tests, normality and homogeneity tests, and independent sample t-tests. The results of this study showed the average score of the experimental class from 56.00 in the pre-test to 75.33 in the post-test, while the average of the control class was 46.00 to 66.66. However, it was found that there was no significant influence on the effectiveness of the Pelmanism game using couple cards on students' vocabulary mastery because the hypothesis test showed a significance value of 0.768 ( $>0.005$ ). The learning media can still be used for learning students' vocabulary, as well as creating a fun and more interactive learning atmosphere even though no significant influence was found.

### الملخص

رومايتا، دوي. 2026. فعالية لعبة البيلمانية باستخدام البطاقات المزدوجة لإتقان مفردات طلاب الصف السابع. أطروحة. قسم التعليم الإنجليزي، كلية التربية وتدريب المعلمين، جامعة مولانا مالك إبراهيم الإسلامية، مالانغ. المشرفة: سبيتا دوي جاياتني، م.ب.

**الكلمات المفتاحية:** لعبة بيلمانية، بطاقات زوجية، إتقان المفردات، البحث شبه التجريبي، تعلم اللغة الإنجليزية.

تهدف هذه الدراسة إلى دراسة فعالية لعبة البيلمانية باستخدام بطاقات زوجية على إتقان المفردات لطلاب الصف السابع في SMP ABC Malang. باستخدام نهج كمي مع تصميم شبه تجريبي. جمعت الدراسة ما مجموعه 60 طالبا في الصف السابع، حيث كان كل صف يضم 30 طالبا كمشاركين، مقسمين إلى فصول تجريبية (VII F) وصفوف التحكم (VII H). جمع البيانات من خلال اختبارات ما قبل وبعد الاختبارات التي تتضمن خيارات متعددة للمفردات. استخدم تحليل البيانات اختبارات الصلاحية والموثوقية، واختبارات الطبيعية والتجانس، واختبارات  $t$  المستقلة بالعينة. أظهرت نتائج هذه الدراسة زيادة في متوسط درجات الصف التجريبي من 56.00 في الاختبار التمهيدي إلى 75.33 في ما بعد الاختبار، بينما كان متوسط الصف الضابط 46.00 إلى 66.66. ومع ذلك، وجد أنه لم يكن هناك تأثير كبير على فعالية لعبة بيلمانية باستخدام بطاقات زوجية على إتقان الطلاب للمفردات لأن اختبار الفرضية أظهر قيمة دلالة 0.768 ( $>0.005$ ). لا يزال بإمكان وسائل التعلم استخدام مفردات الطلاب، بالإضافة إلى خلق جو تعليمي ممتع وتفاعلي رغم عدم وجود تأثير كبير.

## **CHAPTER I**

### **INTRODUCTION**

This chapter explains background of the study, research question, objective of the study, significance of the study, scope and limitation, and definitions of key terms.

#### **1.1 Background of the Study**

Vocabulary is a key point in language because it is the basic word used to produce a language of communication. Without mastery of vocabulary, people will have difficulty conveying their ideas so that communication between the two sides does not work well. Because of that, before trying to communicate with others, improving vocabulary is important. With mastery of vocabulary, the opinions and ideas to be conveyed can be well received by both parties. In addition, vocabulary is also the basic foundation for the four skills of reading, listening, writing and speaking in language learning. The basis that must be really mastered especially for EFL students who are studying English as a foreign language. However, in practice, EFL students often find it difficult to learn English vocabulary that is still unfamiliar.

Rohman (2017) stated that vocabulary is a collection of words that have a certain meaning and is the most important element in learning a language. Therefore, it is necessary to master vocabulary which is the basic key for students being able to know and understand information and express ideas or opinions in English. So that, the purpose and objectives can be conveyed appropriately. Vocabulary is the most basic element that students must master before learning a language (Anindyajati & Choiri, 2017). Vocabulary mastery

is not limited to students knowing or memorizing a vocabulary, students must also be able to know the meaning, spelling, pronunciation as well as, and use the vocabulary in the context of a sentence (Yulisa, 2011).

Vocabulary has an important role in language learning which contributes to the four language skills. Vocabulary functions to express meaning and support receptive skills (listening and reading) and productive skills (speaking and writing). Therefore, if students do not have good vocabulary mastery, then the learning process will be difficult to accept. Students find it difficult to understand material such as reading texts, understanding instructions, and others. For that reason, teaching vocabulary is a top priority in learning English which is supported by several other important components (Abrar et al., 2019).

Studying vocabulary as the main guideline in mastering the four English skills has also been explained in the Al- Qur'an. Allah S.W.T. said in Al-Baqarah verse 31

وَعَلَّمَ آدَمَ الْأَسْمَاءَ كُلَّهَا ثُمَّ عَرَضَهُمْ عَلَى الْمَلَائِكَةِ فَقَالَ أَنْبِئُونِي بِأَسْمَاءِ هَؤُلَاءِ إِنْ كُنْتُمْ صَادِقِينَ

The verse explains that Allah taught knowledge to Adam AS the name of all creatures. The goal is make him more special than the angels. Because science is the pinnacle of glory, everything in this world must have a name, so vocabulary is very important for learning languages.

Learning vocabulary considers to be difficult for students in Indonesia because these words are different from their mother tongue. Furthermore, the researcher also found several causes of difficulty for grade 7 SMPN ABC Malang students in learning vocabulary, including the lack of students' ability to spell and pronounce vocabulary correctly and the difficulty for students to

memorize new vocabulary. In other cases, when the teacher pointed at a student to mention vocabulary, his other friends would laugh at him when the student answered it wrong, which ultimately affected the student's self-confidence. Several factors cause this problem such as, different elementary school backgrounds, lack of motivation and not being serious about taking English lessons are big problems for teachers.

The selection of vocabulary learning method and media also needs to be considered. In order to make students are interested in learning vocabulary and do not feel bored with teaching and learning activities. This vocabulary learning can use exciting activities such as fun game. Sa'adah (2019) in teaching vocabulary, games can be used such as picture games, psychology games, magic tricks, cards and board games, sound games, word games, true/false games, memory games, game of question and answer and a game of guessing and speculation. One of the game that is interesting is pelmanism game.

Zia et al. (2016) conducted previous research entitled improving students' vocabulary through pelmanism game. Apart from increasing vocabulary, this pelmanism game also improves pronunciation and the meaning of the available words. This is proven by an increase in the average student score of 11.4 from 78.7 in the first cycle to 90.1 in the second cycle. Through this game, students are also more active and interested in learning vocabulary, this is proven in the observation sheets and research field notes.

Risnawati and Syafei (2017) conducted previous research entitled using pelmanism games to help students in remembering vocabulary at elementary school. The results showed that teachers could use pelmanism games to learn

vocabulary and help students remember vocabulary easily. The atmosphere of the classroom also raises the learning motivation of elementary school students is increasing. Students become less quickly bored and more focused while studying. This solution is a way that students like and accept without making it difficult for teachers.

Pelmanism is an easy-to-apply and effective language learning technique that supports students in practicing and improving their language skills. This is proven by Sa'adah (2019) research entitled the effectiveness of pelmanism games for vocabulary mastery of third grade students, which shows a difference in the average value of students' vocabulary mastery before being taught using pelmanism games, which obtained a score of 52.17.

Rahayu (2022) conducted a study entitled the use of pelmanisme games to improve vocabulary at SDIT Ya Bunayya Pujon- Malang, using CAR (Classroom Action Research) which was applied to 35 fourth-grade students from the 2019/2020 academic year. It was proven that there was an increase in student scores on the pre-test and post-test during cycle 2 which showed that the use of pelmanisme games could improve students' vocabulary mastery at SDIT Ya Bunayya Pujon Malang.

Pelmanism is a simple and effective way to practice language, enabling students to memorize, practice, repeat, and gradually learn new input in a fun way. Risnawati and Syafei (2017) stated that in the pelmanism game, students are asked to match one card with another matching pair. Researcher tried to use the pelmanism game as a solution for learning English vocabulary based on previous research.

In the previous study the subject of research was only at the level of elementary school students, but in the study by Zia et al. (2016) the subject of research was seventh grade students in one class. In this study, researcher also used seventh grade students as research subjects, but in 2 different classes. Seventh grade is a critical point for vocabulary mastery before moving on to more challenging levels in eighth and ninth grades. If vocabulary mastery is achieved in 7th grade, students have an easier understanding in the next level of English learning. One class were given treatment, while the other class is not for comparison. In addition, the researcher also used couple cards media to support the pelmanism game. Couple cards are a pair of cards that contain questions and answers. Cards containing questions filled with incomplete sentences and pictures, so students must look for the right answer on the answer card. The sentences used in pair cards are simple sentences that are commonly used in everyday activities. So that besides being able to remember vocabulary through pictures, spell and pronounce correctly, students are also able to master vocabulary in the context of sentences.

## **1.2 Research Question**

Based on the background above, the researcher wants to investigate the problem that can be formulated as follows:

1. Is there any significant effect of the pelmanism game using couple cards media for seventh-grade students' vocabulary mastery?

### **1.3 Objective of the Study**

According to the research question, objective of the study is:

1. To know the significant effect of the pelmanism game using couple cards media for seventh-grade students' vocabulary mastery.

### **1.4 Significance of the Study**

In this study, the researcher hopes that the results of this study can be useful for students by using the Pelmanism game as an alternative to learning English vocabulary activities. Then English teacher, these findings can serve as a reference for using the pelmanism game method in learning English vocabulary. The last is other researcher to be a source of accurate information for their future study.

### **1.5 Scope and Limitation of this Study**

This study limits the range of observations on comparing 7th grader students of SMPN ABC Malang in F with H class. In F class consists of 30 students; 14 male students and 16 female students, while in H class consists of 30 students; 7 male students and 13 female students. The subjects was selected by researcher because the majority of students have a good understanding of the material based on their score from daily evaluation by the teacher and daily tests. SMPN ABC Malang was chosen because the school is favourite school that has many students and many achievements. In addition, this school also has English lesson for 160 minutes divided into two meetings in a week, it is assumed that the methods used can be implemented effectively. The data were collected in 2 meetings.

## **1.6 Definitions of Key Terms**

To avoid misunderstandings, the author provides definitions of key terms, as follow:

### **1. Vocabulary Mastery**

Vocabulary mastery is the large number of vocabulary that students know in writing and speech and are applied in an appropriate language. Vocabulary mastery in this study is plural and singular nouns for seventh-grade students.

### **2. Pelmanism Game**

Pelmanism is a memory game of finding matching pairs of cards developed by the Pelman institute in the UK in the 1890s that became popular in the first half of the 20th Century. This game is used two cards are turned over at a time of a set of cards facing down. The player who is able to manage in matching the most cards has the highest score. The vocabulary used in this pelmanism game are singular and plural nouns.

### **3. Couple Cards**

Couple cards are a pair of cards that contain questions and answers. Cards containing questions filled with incomplete sentences and pictures, so students must look for the right answer on the answer card. The sentences used in pair cards are simple sentences that are commonly used in everyday activities.

## **CHAPTER II**

### **LITERATURE REVIEW**

This chapter describes the concept of vocabulary, definition of vocabulary, kind of vocabulary, vocabulary mastery, the importance of vocabulary, pelmanism game, and couple cards.

#### **2.1 The Concept of Vocabulary**

Vocabulary is a collection of words to form a language that is easy to understand in communication. According to Alqahtani (2015) vocabulary is the total number of words used to express the speaker's ideas and meanings, while a person's vocabulary is the set of words that the speaker understands or is likely to use to compose new sentences. Iman (2016) stated that vocabulary is more complex than existing definitions. In fact, the reflection of a person's intelligence and level of education is seen from the wealth of vocabulary mastered. This is evidenced by the existence of various standard exams such as the SAT to test vocabulary as test questions.

The Oxford English Dictionary defines vocabulary as "all words understood and used in a language" or "a list of words and their meanings in a foreign language dictionary." As the smallest linguistic unit with complex forms and meanings, vocabulary functions to construct phrases and sentences to convey ideas, actions, and idioms in communication. In practice, the role of vocabulary is often considered more crucial than grammar. In line with Akdogan (2017) view, someone may still be able to communicate without an ideal mastery of grammar, but communication will be completely impossible without vocabulary. Therefore, vocabulary is the key to communication that

must be understood properly.

It can be concluded that, vocabulary is the smallest particle of language in the form of a set of words that can be understood and used to form new phrases and sentences that describe ideas, actions, idioms, etc. it is also a measure of intelligence and education of a person used in a wide variety of tests. Without the presence of vocabulary, a person cannot speak. It also has complex form and meanings.

### **2.1.1 Kind of Vocabulary**

Kind of vocabulary according to Nation (2001) based on its frequency, is divided into two types; high frequency vocabulary and low frequency vocabulary. First, high frequency vocabulary is words that are often used in speaking, reading, writing, and listening. These words are used in various conditions. Consisting of 2000 word families, 87% are written formal words and 95% informal spoken words. Second, low frequency vocabulary is a group of words that are rarely used in daily activities. This group consists of 100,000 words (Nation, 2001).

Hatch and Brown (1995) classify vocabulary into two types: receptive vocabulary and productive vocabulary. Receptive vocabulary refers to the ability to understand words through listening and reading, while productive vocabulary refers to the ability to use language by generating words through speaking and writing (Schmitt, 2010). Webb (2005) explains that receptive vocabulary consists of words that learners can recognize and understand, especially when they find them in reading texts and visual materials. Productive vocabulary is a receptive vocabulary supplemented by speech and

writing skills. Students can express ideas and opinions to others by using productive vocabulary. Indirectly, if students can master productive vocabulary, then students will master four English skills.

Montgomery (2007) in her book untitled *The Bridge of Vocabulary: Evidence Based Activities for Academic Success* mentioned there are four kinds of vocabulary, namely; listening vocabulary, speaking vocabulary, reading vocabulary, writing vocabulary. The first is listening vocabulary, since humans are still in the womb, they can detect sounds at 16 weeks of age. Then babies will also listen for hours while they are awake. By the time they reach adulthood, the average human has recognized and understood nearly 50,000 words. Children who are deaf cannot receive hearing vocabulary, they use a cueing model that relies on visuals. They also have fewer words than children who can receive auditory vocabulary. The second, speaking vocabulary is the words used for speaking are relatively limited to about 5,000 to 10,000 words. This is less than the listening vocabulary because it is easier to use.

The third is reading vocabulary. It is words that can be understood when a person reads a text. this type of vocabulary is the 2nd largest vocabulary if it can be understood and developed by the reader. The last is writing vocabulary. It is words can be taken to convey ideas and express ourselves through writing. Generally, humans will find it easier to explain themselves verbally with facial expressions and intonation. Then pour out ideas and find words to write. So the writing vocabulary is easier to spell.

### **2.1.2 Vocabulary Mastery**

Vocabulary mastery refers to an individual's ability to not only know the meaning of words but also use them effectively in reading, writing, listening, and speaking, including proper pronunciation. Syarifudin et al (2014) stated that vocabulary mastery plays an important role in English language learning, as it supports students in developing all language skills, not only speaking but also reading and writing. They also emphasize that vocabulary can be acquired naturally through daily life as well as through formal education. In general, vocabulary mastery is the comprehensive ability to understand words and their meanings, as well as to recognize, pronounce, and apply the right words appropriately in a variety of contexts. Without having mastery of vocabulary, students will have difficulty using English (Setiawan, 2010).

In learning English vocabulary, students still use the memorization method. Due to one of these factors, students' vocabulary mastery is still a problem. Whereas vocabulary needs to be understood and learned by students as the words used in their conversation and writing (Thornbury, 2002). It is also emphasized by Rahmasiah (2021) that the purpose of vocabulary mastery is to improve students' language skills. The more vocabulary students understand and master, the more proficient their language skills will be.

It can be concluded that students' vocabulary mastery is not just about memorizing words and their meanings. Instead, it involves all language skills, including reading, writing, listening, and speaking. It also requires learners to understand the meaning of words, pronounce them correctly, and use them

appropriately in everyday communication. Therefore, vocabulary mastery can be seen as a comprehensive ability that supports the effective use of language in a variety of contexts. Vocabulary mastery needs to be continuously improved so that students' language skills can also develop more effectively.

### **2.1.3 The Importance of Vocabulary**

Dakhi and Fitria (2019) revealed that the importance of vocabulary is based on 4 reasons. First is vocabulary as the basis for communication. Vocabulary is the basic key in communicating and conveying ideas. Jamalipour and Farahani (2015) reinforce this opinion. They argue that vocabulary is recognized as the main communication tool used to express ideas and opinions and express human feelings. According to the linguistic perspective, when compared to other aspects of language, vocabulary seems more important and necessary. Sullivan and Alba (2010) also say, "Without grammar, little can be conveyed; without vocabulary, nothing can be conveyed." Principles of communication such as the maxims of quantity, quality, relevance and manner as standards to measure the size and depth of vocabulary in communication (Grice, 1975). The maxim of quantity is obtained when the words are precise and informative. The quality maxim is obtained when the speaker conveys information with actual words. In contrast, the maxim of relevance adheres to the appropriateness of the vocabulary that has been given. For the last one, the maxim of manner is obtained when the words are short, concise, clear and organized.

Second, vocabulary as a representation of social reality. It is explained that there are four main reasons why language is considered a means of interaction, with communication with others being the most common and important reason. Richards and Rodgers (2001) puts forward these reasons, namely (1) language is a way to express meaning; (2) language allows for interaction and communication; (3) its functional and communicative usefulness is illustrated by the structure of language; (4) in addition to grammar and structure, the main units of language also pay attention to functional and communicative meaning. Can and Kitle (2008) also expressed a similar opinion regarding reality and symbols. Reality can be accepted only through symbols, which are the vocabulary in language. Usually, the choice of words used is based on one's social background and feelings. In this way, the number of diction words used to communicate daily is influenced by one's experience. For example, children will tend to have difficulty expressing their feelings due to the limited diction of words they have compared to adults due to lack of experience. Another example is that a political person will tend to associate their diction with political issues and social problems. In fact, vocabulary is also capable of changing people's thinking which affects their attitudes and actions.

Third is vocabulary as an emotion booster. Human logic assumes that emotions are physical types that have no relationship with the words used to name them. Words are only considered as linguistic symbols to label emotions. However, psychologists argue that the fundamental element contained in emotions is language that is based on the perception and

experience of human emotions (Lindquist et al., 2015). This ultimately shows that word choice in communication helps humans to express emotions contextually in any situation and condition so that the emotion can be well received by the listener.

Fourth is vocabulary as an academic ability predictor. Vocabulary is closely related to the existence of scientific findings. This can be seen from the widespread spread of Science and technology formed by using academic discourse and structured academic discourse made of words that have been assembled in a structured manner. Linguists believe that to know the characteristics and categories of academic discourse, the words used are academic and specific. In addition, the use of vocabulary can also determine the extent of one's understanding (Dakhi & Fitria, 2019). For example, students' vocabulary mastery affects their ability and cumulative grade point average (GPA) according to Roche and Harrington (2013) findings. Similarly, vocabulary mastery affects other language skills.

## **2.2 Pelmanism Game**

Based on the Oxford dictionary, the linguistic definition of pelmanism is a system used for memory training designed by the Pelman Institute for the Scientific Development of Mind, Memory, and Personality in London in the 1920s. The game focused on memorizing cards or other objects deliberately placed in front of players. In the book entitled *Reading Faces: And Learning about Human Emotions* by Barbara Maines in 2003 mentioned that the pelmanism game is an original game that is an early version of the game of choosing a partner by L.H. Dawson in a note to the British edition of Hoyle's

Game Modernized (London: George Routledge & Sons, Ltd).

In his notes, Dawson (1920) wrote:

"Pelmanism is a very simple game and, as its name implies, a great exercise for the memory.... We may add that the Pelman Institute for the Scientific Development of the Memory of the Mind is in no way responsible for this game and, so far as we are aware, its rules have never appeared in printed form".

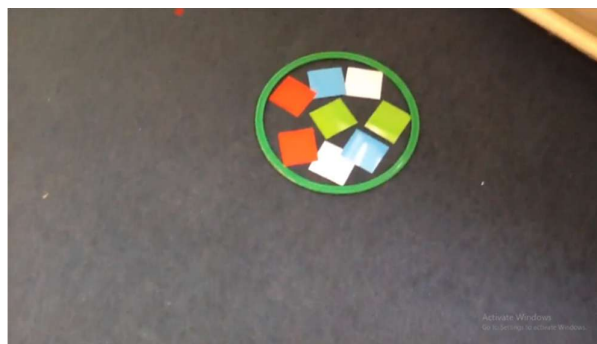
Pelmanism game is a card game that trains students to recall grammar, vocabulary, and their relationships. In this game, students are also trained to learn to understand words and match them with pictures and pronounce them correctly. Students also become more focused and motivated to learn. It can be concluded that, pelmanism game is a card game used to remember material by matching couple cards carried out by a group of people divided into several groups.

Barbara (2003) in her book also explains how to play the game of pelmanism. The game begins by laying the cards face down in rows or in concentric circles. Players in this game can consist of two or more people. The first player will turn over two cards face up, if the cards are in pairs then the player can keep the pair of cards. Then continued by the second player, if the second player cannot find a pair of cards when turning over the cards, then the cards will be returned to their original place and continue to the next player. But if a second player finds a card that has been turned over by the previous player and finds the pair, then the pair can be kept. The game continues until the player who has the most number of paired cards wins.

*Figure 4 Line Up According To Group*



*Figure 3 Cards Collected*



*Figure 2 Match The Couple Cards*



*Figure 1 Collect Couple Cards Until You Have The Most*



### **2.3 Couple Cards**

According to the Oxford Dictionary, a card is a thin, rigid, rectangular piece of paper or cardboard used to obtain cash or credit, pay telephone bills, gain access to a room or building, and may also contain a person's personal information that can be recognized by a machine. Couple cards are learning media in the form of cards containing question cards and answer cards that complement each other. In the question card there are questions and pictures. This game aims at making students more active and focused on learning (Zulaikha, 2014).

Couple cards are designed to facilitate students' understanding of definitions and basic concepts as well as increase students' enthusiasm and activity. Because the use of couple cards is usually through games, so learning activities become fun. This media is the right choice for reinforcement of previously learned material to prepare students for the upcoming test (Hidayat, 2018).

Imamah and Prihatin (2021) argued that the existence of couple cards is utilized as a medium to help students remember and repeat information that has been obtained during learning. With the increase in students' long-term memory, student learning outcomes will improve. It means students' ability to absorb and remember material is higher. The use of effective media with the easier and more interesting the media used, one of which is couple cards, students will easily accept and remember the material so that learning objectives will be achieved.

## CHAPTER III

### METHODOLOGY

This chapter presents research design, research sample, research instrument, data collection, and data analysis.

#### 3.1 Research Design

This study uses a quantitative research method. Sugiyono (2014) defines quantitative research as a method that involves a specific population or sample, the use of research instruments for data collection, and statistical techniques to analyze data to test the hypotheses formulated in the research. This study applied a quasi-experimental design, which was used to test the cause-and-effect relationship between independent and dependent variables. In this design, independent variables are expected to influence changes in dependent variables (Rogers & Revesz, 2019). Researcher used non-randomized pretest and posttest. The subjects of this study were divided into two groups, namely the experimental group which received treatment using the Pelmanism game method and couple card media, while the other group as the control group received treatment using conventional methods or lectures. The following is a table of this research design:

***Table 1 The Experimental Design***

| GROUP        | PRE-TEST | TREATMENT | POST-TEST |
|--------------|----------|-----------|-----------|
| Experimental | O1       | X1        | O2        |
| Control      | O1       | X2        | O2        |

Where:

O<sub>1</sub> : Pre-Test

X1 : Treatment of Experimental group (using Pelmanism game method

and couple cards media)

X2 : Treatment of control group (using Lecture method)

O<sub>2</sub> : Post-Test

(Gay, 2006)

### **3.1.1 Pre-Test**

At this stage, the students in the experimental class and the students in the control class had the same test as a preliminary measure of their vocabulary mastery.

### **3.1.2 Treatment**

The researcher applied the treatment for 2 sessions, each session lasted 80 minutes. For the experimental group, the steps that were taken in the form of; first, the teacher prepares the material according to the competencies to be achieved. Then, the teacher divides the students into groups. After that, the students start the game by reading the question on the question card and looking for the answer by finding the correct answer card. Students who manage to find a pair of matching cards correctly, keep the card, while students who do the opposite, the card is returned to its original place with a closed state, followed by the next player. After playing, the teacher and the students check the pairs again. The group that has collected the most pairs wins. The score was announced by the teacher. The last step is teacher and students draw conclusions about today's learning and closing.

For the control group, the procedure is carried out as follows: first, the teacher explains the learning material according to the competencies to be achieved. Then, students are given the opportunity to ask questions about

parts of the material that they don't understand. After that, students are divided into groups and asked to complete assignments in worksheets (LKS) in pairs with classmates. After the assignment is completed, the teacher and students discuss and correct the correct answers together. The teacher then announces the grades. Finally, before closing the lesson, both the teacher and the student review the material that has been studied during the session.

### **3.1.3 Post-Test**

After the treatment was completed, the experimental and control class students were given the same test. The post-test was used to measure the students' vocabulary mastery after using Pelmanism game method with couple cards media and lecture method.

## **3.2 Research Sample**

The researcher uses non-probability sampling techniques, namely purposive sampling, which refers to a non-probability sampling technique in which the sample is selected because it has the characteristics needed for the study. This population of this study consisted of seventh grade students from SMPN ABC Malang. From them, the students of class VII F and VII H of SMPN ABC Malang are chosen as the research sample. Class VII F consisted of 16 male and 14 female students who were taught with the pelmanism game method and using couple card media. While class VII H consisted of 23 female students and 7 male students who were taught with the lecture method. Based on the recommendation of the English teacher, the students in VII F and VII H showed good enthusiasm and understanding based on their score from daily evaluation by the teacher and daily tests.

### **3.3 Research Instrument**

Research instruments are data collection, measurement, and data analysis tools used to address problems in subjects or samples researcher observed (Kurniawan, 2021). The instruments used in this study are the pre-test and post-test. Students were given 10 multiple choice questions. The score for each correct answer is 10 points per question, so the total score for all correct answers is 100 points. Class VII F and VII H received the same questions in pre-test and post-test. The pretest was given at the first session, while the posttest was given after the treatment. The questions that were given include singular, plural, uncountable and countable nouns to test the students' vocabulary mastery before and after using the pelmanism game and couple cards. The researcher used the same pretest and posttest questions to compare the students' vocabulary mastery before and after the treatment.

#### **3.3.1 Validity**

According to Sitinjak and Sugiarto (2006), the validity test is a test used to determine the degree of accuracy of a measuring instrument capable of measuring what should be measured. A test that is able to provide precise and accurate measurement results that are relevant to the purpose of the test can be said to have high validity. Conversely, tests that produce results that are irrelevant to the purpose of the test are said to have low validity. The validity test is multiple choice item with the analysis; objective, score is true-false data, with a value of 1 for the correct answer and 0 for the incorrect answer, uses the biserial correlation coefficient (analyzing the relationship between 2 variables), with the formula :

$$r_{bis(i)} = \frac{\bar{X}_i - \bar{X}_t}{S_t} \sqrt{\frac{P_i}{q_i}}$$

Where :

$r_{bis(i)}$  : biserial correlation coefficient of item score (i)

$\bar{X}_i$  : Average total score of respondents who answered correctly on item (i)

$$\bar{X}_i : \frac{\text{Total Correct Answer Score}}{\text{Number of Respondents who answered correctly}}$$

$\bar{X}_t$  : Average total score of all respondents

$$\bar{X}_t : \frac{\sum \text{Total Score}}{N}$$

$S_t$  : Standard deviation of the total score

If  $r_{count} < r_{table}$ ,  $H_0$  is accepted, meaning "the item is invalid"

If  $r_{count} > r_{table}$ ,  $H_0$  is rejected, meaning "item is valid".

### 3.3.2 Reliability

Reliability means dependability and capability, so it is a reliable basic measurement used to make a decision (Purnomo, 2018). These basic measurements have different formulas. Because researcher use multiple-choice questions, the formula used to determine reliability is :

$$r_{11} = \left( \frac{n}{n-1} \right) \left( \frac{s^2 - \sum pq}{s^2} \right)$$

with

$S^2$  = Total variant

$$S^2 = \frac{\sum x^2 - \frac{(\sum x)^2}{N}}{N}$$

Description :

$\sum x^2$  : Sum of squared total scores

$(\sum x)^2$  : The square of the total score

$N$  : Number of participants

$r_{II}$  : Reliability of the instrument

$n$  : Number of question items

$p$  : proportion of subjects who scored 1

$q$  : proportion of subjects who scored 0.

(Djemari,2002) The criteria are :

$0,7 \leq r_{II} \leq 1$  : Reliable

$0,3 \leq r_{II} \leq 0,7$  : Reliable with question items

$r_{II} < 0,3$  : Unreliable and the item is replaced or discarded.

If  $r_{count} > r_{table}$  : The tested test is “reliable”.

### 3.4 Data Collection

Data collection is the critical stage of research in which valid data are collected from the variables under study, and the facts are transformed into data for processing and analysis to answer research questions and achieve research goals (Djaali, 2020). Researcher uses data collection techniques in the form of tests. Tests are systematic procedures that have been structured into tasks that are answered or responded to in the form of written, oral, and actions. In this case, researcher use intelligence tests in the form of pre-tests and post-tests that are answered in writing.

### 3.5 Data Analysis

Data analysis is the process of finding useful information to solve problems by processing the data received. The process that must be performed in data analysis is to group data according to its criteria, clean data, transform

data, and find important information from the data. Data is presented in the form of graphs or charts after successful processing. This research used quantitative data from student pre-test and post-test scores using Excel software.

### 3.5.1 Normality Test

The normality test aims to determine whether the data studied come from a normally distributed population or not performed on the pre-test value, post-test value, and gain value of the experimental and control class. By using the following formula Lilliefors test (significant level  $\alpha$  0.05).

The gain value is calculated to determine the increase in pre-test and post-test values using the formula:

$$\text{Gain Value} = \text{Post-test} - \text{Pre-test}$$

The normality test has two criteria, which are ;

1. If  $L_{\text{table}} > L_{\text{observe}}$ , data distribution is normal
2. If  $L_{\text{table}} < L_{\text{observe}}$ , data distribution is not normal.

### 3.5.2 Homogeneity Test

Homogeneity test is carried out after the test of normality, which is aimed at determining the similarity of two conditions or populations. The significance level is  $\alpha = 0.05$ , with  $db1 = (N1 - 1)$  and  $db2 = (N2 - 1)$ .

$$F = \frac{\text{The biggest varians}}{\text{The smallest varians}}$$

Terms homogeneous :

If significance level (Sig)  $> 0.05$ , data is homogeneous

If significance level (Sig)  $< 0.05$ , data is not homogeneous

If  $F_{\text{count}} \leq F_{\text{table}}$ ,  $H_0$  is accepted (homogeneous) and  $H_a$  rejected.

If  $F_{\text{count}} \geq F_{\text{table}}$ ,  $H_0$  is rejected (not homogeneous) and  $H_a$  accepted.

### 3.5.3 Hypothesis Test

This research uses t-test analysis.

#### 1. T-test

The type of t-test used was an Independent Samples T-test (Two-Sample T-Test). This test is used to determine if there is a significant difference between the average score of the experimental class and the control class. The t-test is performed after the data meets the assumptions of normality and homogeneity (Isnawan et al., 2020).

According to Biostatistic (2019) The T-test criteria are as follows:

- a. If the t significance value  $\leq 0,05$ ,  $H_0$  “rejected” or  $H_a$  “accepted”. It means there is a significant effect of pelmanism game using couple cards on students’ vocabulary mastery.
- b. If the t significance value  $\geq 0,05$ ,  $H_0$  “accepted” or  $H_a$  “rejected”. It means there is no significant effect of pelmanism game using couple cards on students’ vocabulary mastery.

## CHAPTER IV

### FINDING AND DISCUSSION

This chapter presents the data analysis, normality and homogeneity testing, hypothesis testing and discussion.

#### 4.1 Finding

The researcher described the results that included the analysis of experimental class data and the control class.

##### 4.1.1 Data Analysis of Pre-Test

On Wednesday, May 28, 2025, class VII F (16 girls and 14 boys) and class VII H (23 girls and 7 boys) at SMPN ABC Malang took part in a pre-test session. The average score from this pre-test is then used by researcher to assign research groups. Class VII F was chosen as an experimental class that applied a game of pairing card pelmanism, while class VII H functioned as a control class without special treatment. The complete data of the results of this initial test has been summarized in Appendix C Number 1.

Based on the pre-test of the experimental class, *Table 1* shows that the highest student score is 100, while the lowest student score is 10. The researcher also present the data in the form of graphs using Microsoft Excel.

Referring to the histogram graph above, the distribution of students' pre-test scores (sorted from lowest to highest) ranges from 10 to 100. The number of students in each score category varies, namely 10 (2 students), 20 (5 students), 30 (1 student), 40 (6 students), 50 (1 student), 60 (3 students), 70 (3 students), 80 (1 student), 90 (3 students), and 100 (5 students). The distribution showed that students' vocabulary mastery levels varied before the

treatment was given. Descriptive statistics of pre-test scores are presented below:

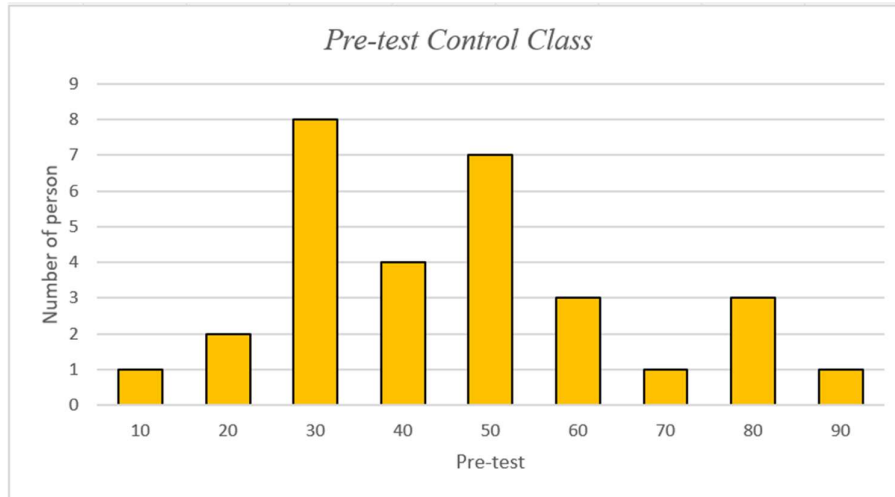
***Table 3 Descriptive Statistic of Pre-test Experimental Class***

| <i>Pre-Test Experimental Class</i> |          |
|------------------------------------|----------|
|                                    |          |
| Mean                               | 56       |
| Standard Error                     | 5,603775 |
| Median                             | 55       |
| Mode                               | 40       |
| Standard Deviation                 | 30,69314 |
| Sample Variance                    | 942,069  |
| Kurtosis                           | -1,35843 |
| Skewness                           | 0,122356 |
| Range                              | 90       |
| Minimum                            | 10       |
| Maximum                            | 100      |
| Sum                                | 1680     |
| Count                              | 30       |
| Mean                               | 56       |

From the table above, it can be seen that the maximum value is 100, and the minimum value is 10. So that from a total of 30 students, the mean pre-test score was 56, and the median score was 55. The standard deviation value was 30.69. This shows that student grades vary across classes. These descriptive statistics provide an overview of the student's vocabulary mastery before the treatment is given.

Based on Pre-Test of Control Class, presented in appendix C number 2 shows that the highest student score is 50, while the lowest student score is

10. The researches also shows the data in the form of graphs using microsoft excel.



The table shows that one student scored 10, two students scored 20, eight students scored 30, four students scored 40, seven students scored 50, three students scored 60, one student scored 70, three students scored 80, and one student scored 90. The highest pre-test score in the control class was 90, while the lowest score was 10. These scores are presented from lowest to highest. The distribution showed that students' vocabulary mastery levels varied before the treatment was given. Descriptive statistics of the pre-test scores of the control class are presented below.

**Table 5 Descriptive Statistic of Pre-Test Control Class**

| <i>Pre- Test Control Class</i> |          |
|--------------------------------|----------|
|                                |          |
| Mean                           | 46       |
| Standard Error                 | 3,638871 |
| Median                         | 45       |
| Mode                           | 30       |
| Standard Deviation             | 19,93092 |

|                 |          |
|-----------------|----------|
| Sample Variance | 397,2414 |
| Kurtosis        | -0,2919  |
| Skewness        | 0,514052 |
| Range           | 80       |
| Minimum         | 10       |
| Maximum         | 90       |
| Sum             | 1380     |
| Count           | 30       |

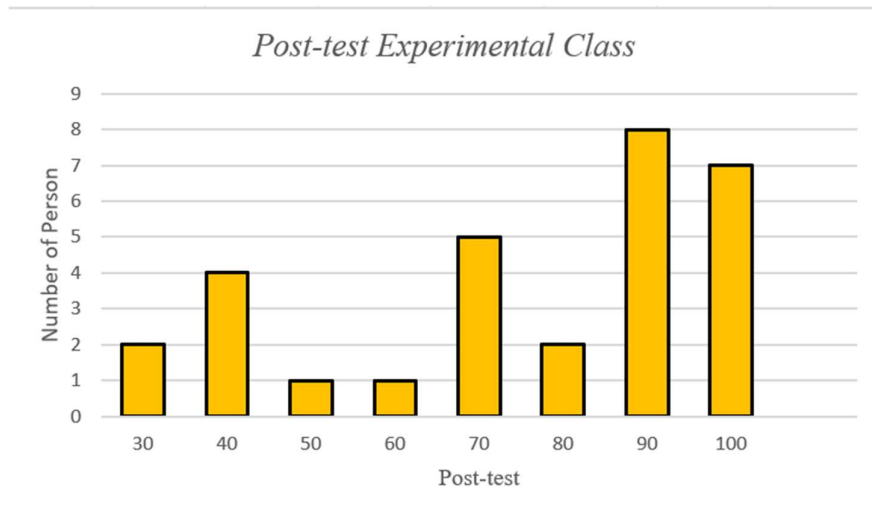
From the table above, it has been explained that the mean is 46, the median is 45, and the standard deviation is 19.93. From the 30 students who had taken the pre-test, the lowest score was 10 and the highest score was 90. These descriptive statistics show that students have varying levels of vocabulary mastery before the treatment is given. After conducting a pre-test assessment in the experimental and control classes, the next step taken by the author is to treat using pelmanism games with couple cards. After treatment, a post-test assessment was carried out in both classes. Therefore, the difference in pre-test and post-test results after the treatment is carried out can be seen.

#### 4.1.2 Data Analysis of Post-Test

After being treated in the form of a pair card pelmanism game, students took the *post-test* on June 12 and 13, 2025. This evaluation session was held on a different day from the treatment schedule using the same question items as in the *pre-test*. Details of the results of the experimental class and the control class for this final test can be checked in Appendix C.

Table 6 in appendix c number 3 shows that the post-test score of the experimental class obtained the lowest score of 30 and the highest score was 100. The researcher also presented the data into a graph chart as follows.

Figure 5 Post-test Experimental Class



Referring to the graph above, the post-test score in the experimental class ranges from 30 as the lowest score to 100 as the highest score. The distribution of student scores is as follows: 30 (2 students), 40 (4 students), 50 (1 student), 60 (1 student), 70 (5 students), 80 (2 students), 90 (8 students), and 100 (7 students). The distribution indicates variation in student performance after treatment. The descriptive statistics of the post-test scores are presented below:

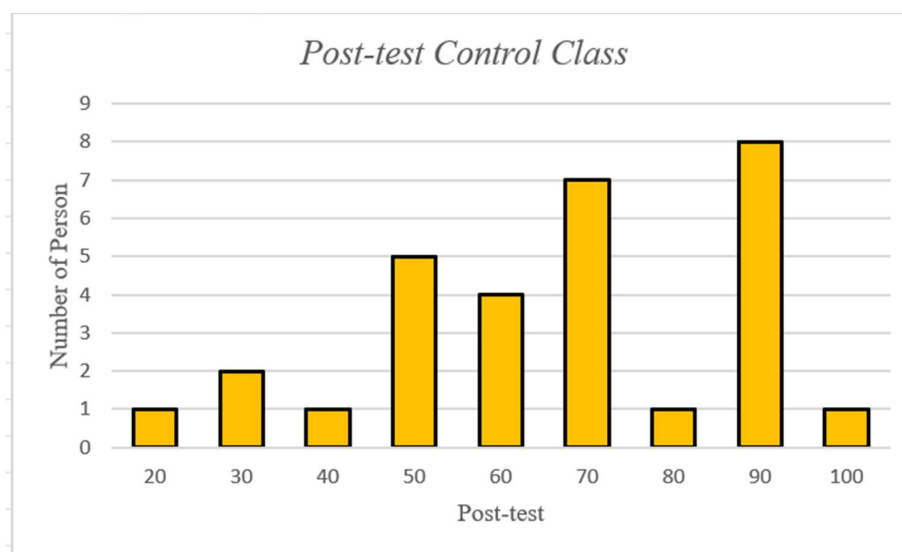
Table 7 Descriptive Statistic of Post-Test Experimental Class

| <i>Post- Test Experimental Class</i> |          |
|--------------------------------------|----------|
| Mean                                 | 75,33333 |
| Standard Error                       | 4,308061 |
| Median                               | 85       |
| Mode                                 | 90       |
| Standard Deviation                   | 23,59622 |
| Sample Variance                      | 556,7816 |
| Kurtosis                             | -0,85853 |
| Skewness                             | -0,71119 |
| Range                                | 70       |
| Minimum                              | 30       |
| Maximum                              | 100      |
| Sum                                  | 2260     |

|       |    |
|-------|----|
| Count | 30 |
|-------|----|

In table 7 starts with a mean value of 75.33, the median value is 85, the standard deviation is 23.59. The experimental post-test was attended by 30 students, with a minimum score of 30, and a maximum score of 100. These descriptive statistics show that the students obtained higher post-test scores after the treatment. In addition, the standard deviation indicates a variation in students' post-test scores. In the table 8 in appendix c number 4, it is known that the lowest post-test score of the control class is 20 and the highest score is 100. The researcher also presented the data in the graph below.

*Figure 6 Post-test Control Class*



The diagram above illustrates the distribution of the post-test scores of the control class at each score level, namely 20 (1 student), 30 (2 students), 40 (1 student), 50 (5 students), 60 (4 students), 70 (7 students), 80 (1 student), 90 (8 students), and 100 (1 student). The distribution shows that students achieve varying levels of vocabulary mastery after the learning process. Descriptive statistics of the control class post-test scores are presented below:

**Table 9 Descriptive Statistic of Post-Test Control Class**  
*Post- Test Control Class*

| <i>Post- Test Control Class</i> |          |
|---------------------------------|----------|
|                                 |          |
| Mean                            | 66,66667 |
| Standard Error                  | 3,845682 |
| Median                          | 70       |
| Mode                            | 90       |
| Standard Deviation              | 21,06367 |
| Sample Variance                 | 443,6782 |
| Kurtosis                        | -0,55844 |
| Skewness                        | -0,40412 |
| Range                           | 80       |
| Minimum                         | 20       |
| Maximum                         | 100      |
| Sum                             | 2000     |
| Count                           | 30       |

In table 9 starts with a mean value of 66,66, the median value 70, the standard deviation is 21,06. The control class was attended by 30 students, with a minimum score of 20, and a maximum score of 100. These descriptive statistics show that students' scores varied within the control class after the learning process. In addition, the average post-test score was higher than the average pre-test score.

#### **4.1.3 Students' Achievement in Vocabulary Mastery**

After administering the pre-test and the treatment using the Pelmanism Game with couple cards, the researcher obtained the students' post-test scores. A comparison of the pre-test and post-test scores is presented in the following table (see Appendix C).

Based on Table 10 (see Appendix C, Number 5), the average pre-test score is 56, while the post-test average score is 75.33. These results indicate that the average post-test score was higher than the average pre-test score.

From the table 11 that presented in appendix c number 6 of pre-test and post-test results, it is known that the average pre-test is 46, and the average post-test is 66.66. It can be concluded that the average post-test was higher than the average pre-test score.

#### **4.1.4 Result of Validity Testing**

The validity test of the item was carried out by lecturers and teachers. The researcher tested 35 questions to 59 students of grades VII G and VII D who were not included in the experimental class or the control class. The validity test was carried out on 27 May 2025 and 28 May 2025. Microsoft Excel was used by the researcher by using a formula to determine the number of *r*'s in each question, and obtained the following results that can be seen in appendix c number 7.

From the results of the validity test, the validity determination is determined by comparing the value of *r count* with the *r table* (0.252). If the question has  $r\ count > 0.252$ , then the question is declared valid. Of the 35 questions tested, there were 22 valid questions including questions number 1, 8, 10, 13, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 30, 31, 32, 33, 34, 35. After being tested using Microsoft Excel, it was found that 13 invalid questions were number 2, 3, 4, 5, 6, 7, 9, 11, 12, 14, 15, 27, 29.

#### **4.1.5 Result of Reliability Testing**

After conducting a validity test on each item, the researcher conducts a reliability test to test the consistency of the instrument in providing the same results on the same object. The data from the reliability test using Microsoft Excel, is presented in appendix c number 8.

The results of the reliability test used the KR-20 formula and showed a number of 0.8487. So it can be concluded that the research data is reliable considering that the value is classified as "very strong".

#### 4.1.6 Result of Normality Testing

The Lilliefors test was used to test the normality of the data in this study. The data was declared to be normally distributed at a significance level of 0.05 and had calculation results showing that  $L_{count} \leq L_{table}$ .

*Figure 7 Normality pretest  
Experimental*

|                 |          |
|-----------------|----------|
| Rata-rata       | 56       |
| Standar Deviasi | 30,69314 |

|                                |                                 |
|--------------------------------|---------------------------------|
| If $L_{table} > L_{observe}$ , | data distribution is normal     |
| If $L_{table} < L_{observe}$ , | data distribution is not normal |

|                   |         |
|-------------------|---------|
| Lilliefors hitung | 0,15053 |
| Lilliefors tabel  | 0,159   |

Based on the results of the normality test that can be seen in appendix c number 9, it is known that the pre-test value of the experimental class has a significance value of 0.150. Because the value is less than 0.159 ( $0.150 < 0.159$ ), the distribution of data in the experimental class is normal.

*Figure 8 Normality Pretest Control*

|                 |          |
|-----------------|----------|
| Rata-rata       | 46       |
| Standar Deviasi | 19,93092 |

|                                |                                 |
|--------------------------------|---------------------------------|
| If $L_{table} > L_{observe}$ , | data distribution is normal     |
| If $L_{table} < L_{observe}$ , | data distribution is not normal |

|                   |          |
|-------------------|----------|
| Lilliefors hitung | 0,143786 |
| Lilliefors tabel  | 0,159    |

Through the analysis of the data in appendix c number 9, the results of the normality test of the pre-test control class showed a value of  $0.143 < 0.159$ , therefore indicating that the pre-test data of the control class met the normal distribution criteria.

Figure 9 Normality Posttest Experimental

|                 |          |
|-----------------|----------|
| Rata-rata       | 75,33333 |
| Standar Deviasi | 23,59622 |

|                                |                                 |
|--------------------------------|---------------------------------|
| If $L_{table} > L_{observe}$ , | data distribution is normal     |
| If $L_{table} < L_{observe}$ , | data distribution is not normal |

|                   |          |
|-------------------|----------|
| Lilliefors hitung | 0,126406 |
| Lilliefors tabel  | 0,159    |

Based on the normality test analysis that presented in appendix c number 9, the results of the experimental class post-test were  $0.126 < 0.159$ , so it can be stated that the post-test experimental class data is normally distributed.

Figure 10 Normality Posttetst Control

|                 |          |
|-----------------|----------|
| Rata-rata       | 66,66667 |
| Standar Deviasi | 21,06367 |

|                                |                                 |
|--------------------------------|---------------------------------|
| If $L_{table} > L_{observe}$ , | data distribution is normal     |
| If $L_{table} < L_{observe}$ , | data distribution is not normal |

|                   |          |
|-------------------|----------|
| Lilliefors hitung | 0,082291 |
| Lilliefors tabel  | 0,159    |

From the normality data in appendix c number 9, the results of the control class post-test score were  $0.082 < 0.159$ , then the control class post-test data was normally distributed.

So, the four data that have been calculated using the Liliefors test, the results of the data group in this study are the experimental class pre-test ( $0.150 < 0.159$ ), the control class pre-test ( $0.143 < 0.159$ ), the experimental class post-test ( $0.126 < 0.159$ ), and the control class post-test ( $0.126 < 0.159$ ). The data shows the value of  $L_{count} < L_{table}$ , then  $H_0$  is accepted and  $H_a$  is rejected, which means that all research data are normally distributed.

#### 4.1.7 Result of Homogeneity Testing

After the normality test, the researcher conducted a homogeneity test as a condition of performing a hypothesis test using parametric statistics, such as the Independent Sample T-test (Tumanggung, 2020).

The researcher used Microsoft Excel to analyze the homogeneity of the data (see appendix c number 10):

*Figure 11 Homogeneity Test*

| Kriteria Pengujian Alpha 5% |                    |  |
|-----------------------------|--------------------|--|
| P Value < 0,05              | DATA TIDAK HOMOGEN |  |
| P Value > 0,05              | DATA HOMOGEN       |  |

| F-Test Two-Sample for Variances |                     |                |
|---------------------------------|---------------------|----------------|
|                                 | <i>Experimental</i> | <i>Control</i> |
| Mean                            | 56                  | 46             |
| Variance                        | 942,069             | 397,241        |
| Observations                    | 30                  | 30             |
| df                              | 29                  | 29             |
| F                               | 2,372               |                |
| P(F<=f) one-tail                | 0,012               |                |
| F Critical one-tail             | 1,861               |                |

The results of the homogeneity test above show that if the P value is < 0.05, then the data is not homogeneous, while the data above shows that the P value is 0.012 which is smaller than 0.05. This means that the data of the two classes in the pre-test is not homogeneous.

#### 4.1.8 Result of T-test and Hypothesis Testing

After conducting validity and reliability tests, the researcher found that the data used were valid and reliable. Furthermore, the researcher conducted a normality test and a homogeneity test. Based on these tests, the results obtained in this study are distributed normally, but for the pre-test the data is not homogeneous.

Therefore, the researcher used an Independent Samples T-Test (Two-Sample Assuming Unequal Variances) to determine whether there was a significant influence between the experimental classes given the treatment using pelmanism game using couple cards or the control class that was not given. The results of data analysis using Microsoft Excel can be seen below and presented in appendix c number 11.

*Figure 15 Result T-test*

| t-Test: Two-Sample Assuming Unequal Variances |            |            |  |
|-----------------------------------------------|------------|------------|--|
|                                               | Variable 1 | Variable 2 |  |
| Mean                                          | 19,333     | 20,667     |  |
| Variance                                      | 440,920    | 165,057    |  |
| Observations                                  | 30         | 30         |  |
| Hypothesized Mean I                           | 0          |            |  |
| df                                            | 48         |            |  |
| t Stat                                        | -0,297     |            |  |
| P(T<=t) one-tail                              | 0,384      |            |  |
| t Critical one-tail                           | 1,677      |            |  |
| P(T<=t) two-tail                              | 0,768      |            |  |
| t Critical two-tail                           | 2,011      |            |  |

Based on the results of the statistical test, the significance value obtained was 0.768, which means it is much greater than the limit of 0.05. In addition, the t-count value  $(-0.297) < t\text{-table} (2,011)$ . So,  $H_0$  is accepted and  $H_a$  is rejected. This shows that there is no significant effect of the use of pelmanism games using couple cards on students' vocabulary mastery.

## 4.2 Discussion

The purpose of this study was to find out whether there is a significant effect of the use of pelmanism games using couple cards on the vocabulary mastery of seventh grade students at SMPN ABC Malang. Based on the results of the study,

the experimental class obtained a higher average post-test score than the average pre-test score after being taught using the Pelmanism Game with couple cards. Similarly, the control class also obtained a higher average post-test score than its average pre-test score.

The average score of the experimental class increased from 56 (pre-test) to 75.33 (post-test), while average score of the control class increased from 46 (pre-test) to 66.66 (post-test). Although the experimental class obtained a higher average post-test score than the control class, the hypothesis testing indicated the difference between the two groups was not statistically significant. This result was supported by significance value ( $p > 0.05$ ) and a value of t count that is smaller than t table. Therefore, the use of the Pelmanism Game with couple cards did not have a statistically significant effect on the vocabulary mastery of seventh-grade students.

Some of the possibilities that are the reason for the results of this study are not statistically significant. First, the treatment time used to test the effect on students' vocabulary mastery is too short. Second, level of the student's English proficiency is vary, this is due to the division of classes based on students' talent interests which results in the development of English skills in one class. Finally, the results of the research can also be influenced by students' learning abilities and classroom conditions.

Although hypothesis testing showed that the use of the pelmanism game with couple cards had no statistically significant effect on students' vocabulary mastery, the classroom learning process indicated that students actively participated during the intervention. They were engaged in recalling vocabulary, identifying pictures using simple sentences, and matching question cards with the answer cards. These

activities reflect the interactive nature of the pelmanism game in vocabulary learning. This finding is consistent with Risnawati and Syafei (2017), who stated that the pelmanism game encourages students to actively participate in vocabulary learning. However, unlike the findings of Risnawati and Syafei (2017), this study did not show a statistically significant effect of the pelmanism game with couple cards for seventh grade students' vocabulary mastery.

This research is in line with Zhang's (2022) theory that vocabulary learning involves repetition activities. In the present study, the Pelmanism Game required students to repeatedly remember and match vocabulary during the learning process. However, unlike Zhang's findings, this study did not find a statistically significant effect on students' vocabulary mastery. Sa'adah (2019) also stated that the pelmanism game is an interesting activity that can be used in vocabulary learning. Meanwhile, the game pelmanism given to students is an activity that uses the repetition method when students remember and match vocabulary during the game. Therefore, although pelmanism games using couple cards do not show a significant influence, they can help create a fun and interactive learning atmosphere.

## **CHAPTER V**

### **CONCLUSION**

This chapter concludes conclusions based on the findings of research and discussion from the previous chapter, and also contains suggestions for English teachers, students, and future researchers.

#### **5.1 Conclusion**

The conclusion based on the findings and discussion of the research discussion in chapter IV is that the use of the pelmanism game with couple cards had no statistically significant effect on the vocabulary mastery of seventh-grade students at SMPN ABC Malang. The experimental class achieved a higher average post-test score (75.33) compared to the average pre-test score (56.00). Similarly, the control class achieved a higher average post-test score (66.66) compared to the average pre-test score (46.00). However, hypothesis testing showed that the difference between the experimental and control groups was not statistically significant. Therefore, it cannot be concluded that the use of the pelmanism game with couple cards has a statistically significant effect on students' vocabulary mastery.

However, in hypothesis testing, researchers found that the significance value was higher than 0.05 ( $0.768 > 0.05$ ). This means that  $H_0$  is accepted and  $H_1$  is rejected, which means that the use of pelmanism games using couple cards has no significant effect on the vocabulary mastery of seventh-graders. Therefore, the use of pelmanism games with pairs cards does not result in significantly different vocabulary mastery compared to traditional teaching methods.

## **5.2 Suggestion**

The researcher proposed several suggestions based on the above conclusions:

### **5.2.1 For English Teachers**

The game of pelmanism using couple cards may be used as an alternative classroom activity in teaching English vocabulary. Although this study did not find a statistically significant effect on students' vocabulary mastery, the game can provide an interactive and engaging learning experience. To optimize its implementation, teachers are encouraged prepare the right time and provide clear game instructions.

### **5.2.2 For Students**

Couple cards can still be used by students as a learning medium to remember some vocabulary through pictures and to understand the meaning of vocabulary through simple sentences on the card.

### **5.2.3 For Future Researchers**

Some of the factors that caused this study to not find significant differences, such as limited treatment time, differences in students' knowledge backgrounds and classroom conditions are encouraged to consider by future researchers. Extending the treatment time, applying this learning medium to other language skills, or involve a larger, more balanced sample to further examine whether Pelmanism with paired cards has a statistically significant effect in a variety of research setting.

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## APPENDICES

### Appendix A : Pre-test and Post-test

#### 1. Pre-test and Post-test

*Choose the correct answer!*

1. Fisherman caught some big ... in a big storm.  
a. Fishing                      c. Fish  
b. Fished                      d. A fish
2. Two ... are playing football on the yard now.  
a. Childrens                  c. Children  
b. Childs                      d. Child
3. I have two ... Which of the following noun could best complete the sentence above ?  
a. Ox                          `c. Oxes  
b. Oxs                        d. Oxen
4. The \_\_\_\_\_ in that empty house are so many.  
a. Mouse                      c. Mice  
b. Mouses                    d. Mices
5. I like to go to village because I can feed the \_\_\_\_\_.  
a. Sheeps                    c. Ship  
b. Sheep                     d. Ships
6. The police officer caught three \_\_\_\_\_.  
a. Thief                      c. Thiefs  
b. Thieves                    d. Thieves
7. I am very thirsty after running, so I drink two bottles of \_\_\_\_\_ in a time.  
a. Water                      c. Waterfall  
b. Waters                    d. Wateres
8. Mark has two \_\_\_\_\_.  
a. Goose                      c. Geese  
b. Geoses                    d. Geeses
9. There are always \_\_\_\_\_ flying around my grandfather's garden.  
a. Fly  
b. Flys  
c. Flyes  
d. Flies
10. Nasa : How long have you waited?  
Kevin : For about ...  
a. A hour  
b. An hour  
c. A hours  
d. An hours

*(It's been appropriate for the subject)*  
*Perkins F.S.*

### Appendix I Pre-test and Post-test

*Choose the correct answer!*

1. Fisherman caught some big ... in a big storm. Which of the following noun could best complete the sentence above ?  
 a. Fishing  
 b. Fished  
 c. Fish  
 d. A fish
2. Two ... are playing football on the yard now. Which of the following noun could best complete the sentence above ?  
 a. Childrens  
 b. Children  
 c. Childs  
 d. Child
3. I have two ... Which of the following noun could best complete the sentence above ?  
 a. Ox  
 b. Oxs  
 c. Oxes  
 d. Oxen
4. Do not play with the ... in the kitchen!  
 a. Knife  
 b. Knifes  
 c. Knive  
 d. Knive
5. There are many beautiful \_\_\_\_\_ in her garden.  
 a. Lilies  
 b. Lily  
 c. Lilys  
 d. Lilis
6. The \_\_\_\_\_ in that empty house are so many.  
 a. Mouse  
 b. Mouses  
 c. Mice  
 d. Mices
7. I like to go to village because I can feed the \_\_\_\_\_.  
 a. Sheeps  
 b. Sheep  
 c. Ship  
 d. Ships
8. We need many \_\_\_\_\_ to make french fries.  
 a. Potatoes  
 b. Potatos  
 c. Potato  
 d. Potatoe
9. The police officer caught three \_\_\_\_\_.  
 a. Thief  
 b. Thieves  
 c. Thiefs  
 d. Thieves
10. There are many .... on the road  
 a. bus  
 b. busses  
 c. buses  
 d. bussess
11. The apple tree has many \_\_\_\_\_.  
 a. Leaf  
 b. Leafs  
 c. Leaves  
 d. Leavs
12. My uncle broke a \_\_\_\_\_ in my grandmother's house.  
 a. Vase  
 b. Vases  
 c. Vas  
 d. Vas's
13. We need many \_\_\_\_\_ to make french fries.  
 a. Potatoe  
 b. Potatoes  
 c. Potatos  
 d. Potatoe's
14. I have no idea their names or their \_\_\_\_\_.  
 a. Address  
 b. Addresses

- b. Addresses  
c. Addreses  
d. Adresses
15. The \_\_\_\_\_ in an ocean are more than in a lake or a river.  
a. Fish  
b. Fishes  
c. Fishs  
d. Fish's
16. Nami and Ira like going to bookstore to buy some \_\_\_\_\_.  
a. Book's  
b. Books  
c. Bookes  
d. Book  
e. Bookess
17. I am very thirsty after running, so I drink two bottle of \_\_\_\_\_ in a time.  
a. Water  
b. Waters  
c. Waterfall  
d. Wateres
18. Ita has a lot of \_\_\_\_\_.  
a. Money  
b. Moneys  
c. a money  
d. Moneis
19. There are five \_\_\_\_\_ in the classroom.  
a. Box  
b. Boxs  
c. Boxes  
d. Boxies
20. I have \_\_\_\_\_ orange in my bag.  
a. A  
b. An  
c. Some  
d. Any
21. My aunty has three \_\_\_\_\_.  
a. Baby  
b. Babys  
c. Babyes  
d. Babies
22. Leni buy \_\_\_\_\_ to share with her friends.  
a. An watermelon  
b. Some watermelons  
c. Some watermelon  
d. A watermelon
23. Jaemin eats some \_\_\_\_\_ on the table.  
a. Strawberry  
b. Strawberrys  
c. Strawberries  
d. Strawberries
24. Renjun gives queen two kilos of \_\_\_\_\_.  
a. Tomato  
b. Tomatoes  
c. Tomatoess  
d. Tomatos
25. Mark has two \_\_\_\_\_.  
a. Goose  
b. Gooses  
c. Geese  
d. Geeses
26. There are always \_\_\_\_\_ flying around my grandfather's garden.  
a. Fly  
b. Flys  
c. Flyes  
d. Flies
27. This baby has a tooth, but that baby has two \_\_\_\_\_.  
a. Tooth  
b. Tooths  
c. Teeth  
d. Teeths
28. Boys like playing with \_\_\_\_\_.  
a. Toy car  
b. Toys cars  
c. Toy cars  
d. Toyes car
29. Jenno sells twenty kilos of \_\_\_\_\_ in front of his house everyday.  
a. Mango  
b. Mangoes  
c. Mangos

- d. Mangoses
- 30. Laskar : Who are ...?  
Dipta : They are my father's friends.
  - a. The man
  - b. Those men
  - c. That man
  - d. Those mans
- 31. Nasa : How long have you waited?  
Kevin : For about ...
  - a. A hour
  - b. An hour
  - c. A hours
  - d. An hours
- 32. My family goes to Seaworld Ancol. There are \_\_\_\_\_.
  - a. Squirrel
  - b. Squirrels
  - c. Squirreles
  - d. Squirreless
- 33. Today is rain and I forget to bring \_\_\_\_\_.
  - a. A umbrella
  - b. An umbrella
  - c. A umbrellas
  - d. An umbrellas
- 34. There are some \_\_\_\_\_ in my photo album.
  - a. Photo
  - b. Photos
  - c. Photoes
  - d. Photoess
- 35. My sister bought \_\_\_\_\_, they were very sour.
  - a. Some orange
  - b. Some oranges
  - c. A orange
  - d. An oranges

## 2. Student Answer Sheet

Name: Chico Calya Mheswari  
Class: 7H

### Pre-test and Post-test

Choose the correct answer!

(50)

1. Fisherman caught some big ... in a big storm.  
a. Fishing  
b. Fished  
☒ c. Fish  
d. A fish
2. I have \_\_\_\_\_ orange in my bag.  
a. A  
☒ b. An  
c. Some  
d. Any
3. There are many .... on the road  
a. bus  
☒ b. busses  
c. buses  
d. bussess
4. We need many \_\_\_\_\_ to make french fries.  
a. Potatoe  
☒ b. Potatoes  
c. Potatos  
d. Potatoe's
5. My sister bought \_\_\_\_\_, they were very sour.  
a. Some orange  
b. Some oranges  
c. A orange  
☒ d. An oranges
6. Laskar : Who are ...?  
Dipta : They are my father's friends.  
a. The man  
b. Those men  
☒ c. That man  
d. Those mans
7. My family goes to Seaworld Ancol. There are .....  
a. Squirrel  
☒ b. Squirrels  
c. Squirreles  
d. Squirreless
8. Mark has two \_\_\_\_\_.  
a. Goose  
b. Gooses  
c. Geese  
☒ d. Geeses
9. There are always \_\_\_\_\_ flying around my grandfather's garden.  
a. Fly  
☒ b. Flys  
c. Flyes  
d. Flies
10. Nasa : How long have you waited?  
Kevin : For about ...  
a. A hour  
☒ b. An hour  
c. A hours  
d. An hours

Name: Chico Calya M.  
Class: 7H

### Pre-test and Post-test

Choose the correct answer!

(90)

1. Fisherman caught some big ... in a big storm.  
a. Fishing  
b. Fished  
☒ c. Fish  
d. A fish
2. I have \_\_\_\_\_ orange in my bag.  
a. A  
☒ b. An  
c. Some  
d. Any
3. There are many .... on the road  
a. Bus  
☒ b. Busses  
c. Buses  
d. bussess
4. We need many \_\_\_\_\_ to make french fries.  
a. Potatoe  
☒ b. Potatoes  
c. Potatos  
d. Potatoe's
5. My sister bought \_\_\_\_\_, they were very sour.  
a. Some orange  
b. Some oranges  
c. A orange  
☒ d. An oranges
6. Laskar : Who are ...?  
Dipta : They are my father's friends.  
a. The man  
☒ b. Those men  
c. That man  
d. Those mans
7. My family goes to Seaworld Ancol. There are .....  
a. Squirrel  
☒ b. Squirrels  
c. Squirreles  
d. Squirreless
8. Mark has two \_\_\_\_\_.  
a. Goose  
☒ b. Gooses  
c. Geese  
d. Geeses
9. There are always \_\_\_\_\_ flying around my grandfather's garden.  
a. Fly  
☒ b. Flys  
c. Flyes  
d. Flies
10. Nasa : How long have you waited?  
Kevin : For about ...  
a. A hour  
☒ b. An hour  
c. A hours  
d. An hours

## Appendix B : Teaching Media

|                                                                                                                                        |                                                                                                                        |                                                                                                                                  |                                                                                                                        |                                                                                                                             |                                                                                                                      |                                                                                                                                         |                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <br>My mom cooks _____ in my birthday                 | <br>Leni buys _____ with her sister   | <br>Ahmad brings _____ in his bag               | candys                                                                                                                 | <br>Lexa finds _____ in front of her house | <br>Leni holds _____ in her hands | <br>There are _____ in the forest                    | <br>Queen has _____, because she like them |
| some squids                                                                                                                            | some squid                                                                                                             | two slippers                                                                                                                     | two slipper                                                                                                            | fish                                                                                                                        | fishes                                                                                                               | any foxs                                                                                                                                | any foxes                                                                                                                     |
| <br>How many _____ are there?                         | <br>Online shop seller needs _____    | <br>My brother always buys _____ every weekends | <br>I see _____ in the zoo            | many deer                                                                                                                   | many deers                                                                                                           | three rose                                                                                                                              | three roses                                                                                                                   |
| apple                                                                                                                                  | apples                                                                                                                 | many boxes                                                                                                                       | many boxes                                                                                                             | some cactuses                                                                                                               | some cacti                                                                                                           | some people                                                                                                                             | some persons                                                                                                                  |
| geese                                                                                                                                  | goose                                                                                                                  | octopuses                                                                                                                        | octopus                                                                                                                | <br>We meet _____ everyday                | <br>Those _____ are beautiful    | <br>Aldo likes seafood, especially with extra _____ | <br>Tegar and his friends catch _____     |
| some cactuses                                                                                                                          | some cacti                                                                                                             | some people                                                                                                                      | some persons                                                                                                           | a fungi                                                                                                                     | a fungus                                                                                                             | two thieves                                                                                                                             | two thieves                                                                                                                   |
| <br>Reza constantly feeds his _____ so they are fat | <br>Hamdan buys _____ in the market | <br>Hasya collects _____ of various colors    | <br>Fara drinks _____ every morning | many veil                                                                                                                   | many veils                                                                                                           | candies                                                                                                                                 | two bottles of water                                                                                                          |
| oxen                                                                                                                                   | oxes                                                                                                                   | oil                                                                                                                              | oils                                                                                                                   | two bottles of waters                                                                                                       | <br>I like eating _____         | noodle                                                                                                                                  | noodles                                                                                                                       |

## Appendix C : Extended Table from Chapter 4

### 1. The Result of Pre-Test Experimental Class

*Table 2 The Result of Pre-Test Experimental Class*

| No. | Initial Name | Score |
|-----|--------------|-------|
| 1.  | A            | 50    |
| 2.  | MH           | 20    |
| 3.  | ACY          | 70    |
| 4.  | ARA          | 40    |
| 5.  | MYN          | 20    |
| 6.  | AD           | 40    |
| 7.  | Z            | 20    |
| 8.  | ANR          | 40    |
| 9.  | MFM          | 20    |
| 10. | RMI          | 10    |
| 11. | NMA          | 60    |
| 12. | NPSS         | 70    |
| 13. | DSA          | 40    |
| 14. | AAP          | 30    |
| 15. | CU           | 90    |
| 16. | ASA          | 60    |
| 17. | MDG          | 70    |
| 18. | MIBY         | 20    |
| 19. | AASB         | 90    |
| 20. | ANPR         | 100   |
| 21. | HRD          | 100   |
| 22. | ARL          | 100   |
| 23. | NKP          | 90    |
| 24. | AMAH         | 80    |
| 25. | AS           | 40    |
| 26. | DAPS         | 100   |
| 27. | ZZA          | 100   |

|               |     |      |
|---------------|-----|------|
| 28.           | RA  | 40   |
| 29.           | MFA | 10   |
| 30.           | SJN | 60   |
| $\Sigma$      |     | 1680 |
| Average Score |     | 56   |

## 2. The Result of Pre-test Control Class

*Table 4 The Result of Pre-Test Control Class*

| No. | Initial Name | Score |
|-----|--------------|-------|
| 1.  | ANK          | 30    |
| 2.  | RPR          | 30    |
| 3.  | ADS          | 90    |
| 4.  | MIF          | 40    |
| 5.  | AFAG         | 30    |
| 6.  | MHR          | 50    |
| 7.  | MPN          | 10    |
| 8.  | BNIM         | 60    |
| 9.  | RDR          | 40    |
| 10. | ZZA          | 30    |
| 11. | FRZW         | 50    |
| 12. | FAW          | 70    |
| 13. | ACA          | 60    |
| 14. | FPR          | 30    |
| 15. | CRM          | 20    |
| 16. | ARS          | 20    |
| 17. | LMR          | 50    |
| 18. | MPCM         | 50    |
| 19. | CB           | 80    |
| 20. | KVJ          | 50    |
| 21. | NAP          | 60    |

|               |      |      |
|---------------|------|------|
| 22.           | IP   | 30   |
| 23.           | CCM  | 50   |
| 24.           | ZDC  | 80   |
| 25.           | SAZ  | 30   |
| 26.           | NAH  | 40   |
| 27.           | SA   | 80   |
| 28.           | APH  | 50   |
| 29.           | AM   | 30   |
| 30.           | MDAA | 40   |
| $\Sigma$      |      | 1380 |
| Average Score |      | 46   |

### 3. The Result of Post-test experimental Class

***Table 6 The Result of Post-Test Experimental Class***

| No. | Initial Name | Score |
|-----|--------------|-------|
| 1.  | A            | 90    |
| 2.  | MH           | 50    |
| 3.  | ACY          | 70    |
| 4.  | ARA          | 90    |
| 5.  | MYN          | 30    |
| 6.  | AD           | 70    |
| 7.  | Z            | 90    |
| 8.  | ANR          | 70    |
| 9.  | MFM          | 40    |
| 10. | RMI          | 40    |
| 11. | NMA          | 80    |
| 12. | NPSS         | 80    |
| 13. | DSA          | 60    |
| 14. | AAP          | 40    |
| 15. | CU           | 100   |
| 16. | ASA          | 70    |
| 17. | MDG          | 90    |

|               |      |          |
|---------------|------|----------|
| 18.           | MIBY | 30       |
| 19.           | AASB | 90       |
| 20.           | ANPR | 100      |
| 21.           | HRD  | 100      |
| 22.           | ARL  | 100      |
| 23.           | NKP  | 100      |
| 24.           | AMAH | 90       |
| 25.           | AS   | 40       |
| 26.           | DAPS | 100      |
| 27.           | ZZA  | 100      |
| 28.           | RA   | 90       |
| 29.           | MFA  | 90       |
| 30.           | SJN  | 70       |
| $\Sigma$      |      | 2260     |
| Average Score |      | 75,33333 |

#### 4. The Result of Post-test Control Class

*Table 8 The Result of Post-Test Control Class*

| No. | Initial Name | Score |
|-----|--------------|-------|
| 1.  | ANK          | 50    |
| 2.  | RPR          | 60    |
| 3.  | ADS          | 90    |
| 4.  | MIF          | 50    |
| 5.  | AFAG         | 70    |
| 6.  | MHR          | 60    |
| 7.  | MPN          | 20    |
| 8.  | BNIM         | 70    |
| 9.  | RDR          | 70    |
| 10. | ZZA          | 50    |
| 11. | FRZW         | 90    |

|               |      |          |
|---------------|------|----------|
| 12.           | FAW  | 80       |
| 13.           | ACA  | 70       |
| 14.           | FPR  | 70       |
| 15.           | CRM  | 30       |
| 16.           | ARS  | 30       |
| 17.           | LMR  | 90       |
| 18.           | MPCM | 90       |
| 19.           | CB   | 100      |
| 20.           | KVJ  | 70       |
| 21.           | NAP  | 90       |
| 22.           | IP   | 70       |
| 23.           | CCM  | 90       |
| 24.           | ZDC  | 90       |
| 25.           | SAZ  | 40       |
| 26.           | NAH  | 50       |
| 27.           | SA   | 90       |
| 28.           | APH  | 60       |
| 29.           | AM   | 50       |
| 30.           | MDAA | 60       |
| $\Sigma$      |      | 2000     |
| Average Score |      | 66,66667 |

## 5. The Result of Pre-test and Post-test Experimental Class

*Table 2 The Result of Pre-Test and Post- Test Experimental Class*

| No. | Initial Name | Pre-Test | Post-Test |
|-----|--------------|----------|-----------|
| 1.  | A            | 50       | 90        |
| 2.  | MH           | 20       | 50        |
| 3.  | ACY          | 70       | 70        |
| 4.  | ARA          | 40       | 90        |
| 5.  | MYN          | 20       | 30        |
| 6.  | AD           | 40       | 70        |

|               |      |      |          |
|---------------|------|------|----------|
| 7.            | Z    | 20   | 90       |
| 8.            | ANR  | 40   | 70       |
| 9.            | MFM  | 20   | 40       |
| 10.           | RMI  | 10   | 40       |
| 11.           | NMA  | 60   | 80       |
| 12.           | NPSS | 70   | 80       |
| 13.           | DSA  | 40   | 60       |
| 14.           | AAP  | 30   | 40       |
| 15.           | CU   | 90   | 100      |
| 16.           | ASA  | 60   | 70       |
| 17.           | MDG  | 70   | 90       |
| 18.           | MIBY | 20   | 30       |
| 19.           | AASB | 90   | 90       |
| 20.           | ANPR | 100  | 100      |
| 21.           | HRD  | 100  | 100      |
| 22.           | ARL  | 100  | 100      |
| 23.           | NKP  | 90   | 100      |
| 24.           | AMAH | 80   | 90       |
| 25.           | AS   | 40   | 40       |
| 26.           | DAPS | 100  | 100      |
| 27.           | ZZA  | 100  | 100      |
| 28.           | RA   | 40   | 90       |
| 29.           | MFA  | 10   | 90       |
| 30.           | SJN  | 60   | 70       |
| $\Sigma$      |      | 1680 | 2260     |
| Average Score |      | 56   | 75,33333 |

## 6. The Result of Pre-test and Post-test Control Class

*Table 3 The Result of Pre-Test and Post- Test Control Class*

| No. | Initial Name | Diference |           |
|-----|--------------|-----------|-----------|
|     |              | Pre-Test  | Post-Test |
| 1.  | ANK          | 30        | 50        |
| 2.  | RPR          | 30        | 60        |
| 3.  | ADS          | 90        | 90        |
| 4.  | MIF          | 40        | 50        |
| 5.  | AFAG         | 30        | 70        |
| 6.  | MHR          | 50        | 60        |
| 7.  | MPN          | 10        | 20        |
| 8.  | BNIM         | 60        | 70        |
| 9.  | RDR          | 40        | 70        |
| 10. | ZZA          | 30        | 50        |
| 11. | FRZW         | 50        | 90        |
| 12. | FAW          | 70        | 80        |
| 13. | ACA          | 60        | 70        |
| 14. | FPR          | 30        | 70        |
| 15. | CRM          | 20        | 30        |
| 16. | ARS          | 20        | 30        |
| 17. | LMR          | 50        | 90        |
| 18. | MPCM         | 50        | 90        |
| 19. | CB           | 80        | 100       |
| 20. | KVJ          | 50        | 70        |
| 21. | NAP          | 60        | 90        |
| 22. | IP           | 30        | 70        |
| 23. | CCM          | 50        | 90        |
| 24. | ZDC          | 80        | 90        |
| 25. | SAZ          | 30        | 40        |
| 26. | NAH          | 40        | 50        |
| 27. | SA           | 80        | 90        |

|               |      |      |          |
|---------------|------|------|----------|
| 28.           | APH  | 50   | 60       |
| 29.           | AM   | 30   | 50       |
| 30.           | MDAA | 40   | 60       |
| $\Sigma$      |      | 1380 | 2000     |
| Average Score |      | 46   | 66,66667 |

## 7. Result of Validity Testing

| No. | Class | Initial Name | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----|-------|--------------|---|---|---|---|---|---|---|---|---|----|
| 1   | VII G | FIFP         | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1  |
| 2   | VII G | FFAI         | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1  |
| 3   | VII G | BAAW         | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1  |
| 4   | VII G | KAA          | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1  |
| 5   | VII G | IHK          | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1  |
| 6   | VII G | APV          | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1  |
| 7   | VII G | IJP          | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1  |
| 8   | VII G | DOW          | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1  |
| 9   | VII G | HPKW         | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1  |
| 10  | VII G | ZPN          | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0  |
| 11  | VII G | ASN          | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0  |
| 12  | VII G | FA           | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0  |
| 13  | VII G | AIR          | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0  |
| 14  | VII G | RC           | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0  |
| 15  | VII G | MARA         | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0  |
| 16  | VII G | M            | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1  |
| 17  | VII G | FM           | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1  |
| 18  | VII G | FFM          | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1  |
| 19  | VII G | ANPS         | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0  |
| 20  | VII G | RASI         | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0  |
| 21  | VII G | NAK          | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1  |
| 22  | VII G | ZRA          | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0  |
| 23  | VII G | BDR          | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0  |
| 24  | VII G | AAA          | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0  |
| 25  | VII G | RRAH         | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0  |
| 26  | VII G | DKS          | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0  |
| 27  | VII G | DAP          | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0  |
| 28  | VII G | DAA          | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1  |
| 29  | VII G | DK           | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0  |
| 30  | VII G | RKP          | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0  |
| 31  | VII G | KSA          | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0  |
| 32  | VII D | FDP          | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0  |

|    |       |      |   |   |   |   |   |   |   |   |   |   |
|----|-------|------|---|---|---|---|---|---|---|---|---|---|
| 33 | VII D | MAT  | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | VII D | MAS  | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 35 | VII D | SK   | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| 36 | VII D | NSA  | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| 37 | VII D | BIN  | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| 38 | VII D | MSN  | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| 39 | VII D | KDA  | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 40 | VII D | SNN  | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| 41 | VII D | MDW  | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| 42 | VII D | BAI  | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 |
| 43 | VII D | RAA  | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| 44 | VII D | SCR  | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 45 | VII D | AAN  | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 46 | VII D | NOR  | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 47 | VII D | YR   | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 |
| 48 | VII D | FWF  | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 |
| 49 | VII D | NQPS | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 |
| 50 | VII D | QAA  | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 |
| 51 | VII D | QTA  | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| 52 | VII D | FYK  | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |
| 53 | VII D | MSA  | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 54 | VII D | SAR  | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 55 | VII D | NSPA | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| 56 | VII D | M    | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 57 | VII D | GE   | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| 58 | VII D | AL   | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| 59 | VII D | A    | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |

R Hitung 0,5274 0,02586292 -0,002804127 0,02033321 0,092825996 0,13930248 -0,02757575 0,557 0,13719415 0,333  
 R Tabel 0,252 0,252 0,252 0,252 0,252 0,252 0,252 0,252 0,252 0,252  
 Keterangan **VALID** TIDAK VALID TIDAK VALID TIDAK VALID TIDAK VALID TIDAK VALID TIDAK VALID **VALID** TIDAK VALID **VALID**  
 Varians

|              |             |       |             |             |       |              |             |       |       |       |       |       |       |
|--------------|-------------|-------|-------------|-------------|-------|--------------|-------------|-------|-------|-------|-------|-------|-------|
| -0,258412807 | 0,1244457   | 0,529 | 0,08964987  | 0,067878449 | 0,252 | -0,016797062 | 0,145911781 | 0,479 | 0,306 | 0,396 | 0,259 | 0,615 | 0,519 |
| 0,252        | 0,252       | 0,252 | 0,252       | 0,252       | 0,252 | 0,252        | 0,252       | 0,252 | 0,252 | 0,252 | 0,252 | 0,252 | 0,252 |
| TIDAK VALID  | TIDAK VALID | VALID | TIDAK VALID | TIDAK VALID | VALID | TIDAK VALID  | TIDAK VALID | VALID | VALID | VALID | VALID | VALID | VALID |

| 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | Skor Total |
|----|----|----|----|----|----|----|----|----|----|----|------------|
| 1  | 1  | 1  | 0  | 1  | 0  | 1  | 1  | 1  | 0  | 1  | 23         |
| 0  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 20         |
| 1  | 1  | 0  | 0  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 20         |
| 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 20         |
| 0  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 22         |
| 0  | 0  | 0  | 0  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 15         |
| 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 0  | 0  | 0  | 17         |
| 1  | 1  | 0  | 1  | 1  | 0  | 1  | 0  | 1  | 1  | 1  | 29         |
| 1  | 1  | 0  | 1  | 1  | 0  | 1  | 0  | 1  | 1  | 1  | 25         |
| 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 4          |
| 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 12         |
| 0  | 0  | 0  | 0  | 1  | 0  | 0  | 1  | 1  | 1  | 1  | 16         |
| 0  | 1  | 0  | 1  | 1  | 0  | 0  | 1  | 0  | 0  | 1  | 13         |
| 0  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 14         |
| 1  | 1  | 1  | 0  | 1  | 0  | 0  | 1  | 1  | 0  | 1  | 18         |
| 0  | 1  | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 0  | 0  | 13         |
| 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 13         |
| 1  | 0  | 0  | 0  | 1  | 0  | 0  | 1  | 0  | 0  | 0  | 13         |
| 1  | 0  | 1  | 0  | 0  | 1  | 0  | 0  | 1  | 1  | 1  | 19         |
| 0  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 9          |
| 0  | 1  | 0  | 1  | 1  | 0  | 0  | 0  | 1  | 1  | 0  | 13         |
| 0  | 0  | 1  | 0  | 1  | 0  | 0  | 1  | 0  | 0  | 0  | 12         |
| 0  | 0  | 0  | 0  | 1  | 1  | 0  | 1  | 1  | 1  | 0  | 21         |
| 0  | 0  | 0  | 0  | 0  | 1  | 0  | 1  | 1  | 1  | 0  | 25         |
| 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 9          |
| 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 0  | 12         |
| 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 9          |
| 0  | 1  | 0  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 22         |
| 0  | 0  | 1  | 1  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 16         |
| 0  | 0  | 1  | 1  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 17         |
| 0  | 1  | 0  | 0  | 1  | 0  | 0  | 1  | 0  | 1  | 1  | 14         |
| 0  | 0  | 0  | 0  | 1  | 0  | 1  | 0  | 0  | 0  | 0  | 8          |

|   |   |   |   |   |   |   |   |   |   |   |    |
|---|---|---|---|---|---|---|---|---|---|---|----|
| 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 7  |
| 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 17 |
| 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 16 |
| 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 21 |
| 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 17 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 10 |
| 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 21 |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 21 |
| 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 21 |
| 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 14 |
| 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 13 |
| 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 12 |
| 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 18 |
| 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 19 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 9  |
| 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 24 |
| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 23 |
| 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 20 |
| 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 23 |
| 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 21 |
| 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 25 |
| 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 13 |
| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 13 |
| 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 19 |
| 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 21 |
| 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 20 |
| 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 26 |

0,435 0,497 0,01896166 0,239091308 0,378 0,5703 0,58 0,425 0,272 0,466 0,57  
0,252 0,252 0,252 0,252 0,252 0,252 0,252 0,252 0,252 0,252 0,252

VALID VALID TIDAK VALID TIDAK VALID VALID VALID VALID VALID VALID VALID VALID

## 8. Result of Reliability Testing

| No. | Class | Initial Name | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-----|-------|--------------|---|---|---|---|---|---|---|---|---|----|----|----|
| 1   | VII G | FIFP         | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1  | 0  | 1  |
| 2   | VII G | FFAI         | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1  | 0  | 0  |
| 3   | VII G | BAAW         | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1  | 0  | 1  |
| 4   | VII G | KAA          | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1  | 0  | 0  |
| 5   | VII G | IHK          | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1  | 0  | 1  |
| 6   | VII G | APV          | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1  | 0  | 0  |
| 7   | VII G | UP           | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1  | 0  | 0  |
| 8   | VII G | DOW          | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1  | 1  | 1  |
| 9   | VII G | HPKW         | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1  | 1  | 1  |
| 10  | VII G | ZPN          | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0  | 1  | 1  |
| 11  | VII G | ASN          | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0  | 1  | 0  |
| 12  | VII G | FA           | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0  | 1  | 0  |
| 13  | VII G | AIR          | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0  | 1  | 0  |
| 14  | VII G | RC           | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0  | 1  | 1  |
| 15  | VII G | MARA         | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0  | 0  | 0  |
| 16  | VII G | M            | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1  | 0  | 0  |
| 17  | VII G | FM           | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1  | 1  | 0  |
| 18  | VII G | FFM          | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1  | 0  | 1  |
| 19  | VII G | ANPS         | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0  | 1  | 1  |
| 20  | VII G | RASI         | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0  | 1  | 1  |
| 21  | VII G | NAK          | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1  | 1  | 0  |
| 22  | VII G | ZRA          | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0  | 1  | 0  |
| 23  | VII G | BDR          | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0  | 0  | 1  |
| 24  | VII G | AAA          | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0  | 0  | 1  |
| 25  | VII G | RRAH         | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0  | 1  | 1  |
| 26  | VII G | DKS          | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0  | 1  | 1  |
| 27  | VII G | DAP          | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0  | 0  | 0  |
| 28  | VII G | DAA          | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1  | 1  | 0  |
| 29  | VII G | DK           | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0  | 0  | 1  |
| 30  | VII G | RKP          | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0  | 1  | 1  |
| 31  | VII G | KSA          | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0  | 1  | 0  |

|         |       |      |    |    |    |    |    |    |    |    |    |    |    |    |
|---------|-------|------|----|----|----|----|----|----|----|----|----|----|----|----|
| 32      | VII D | FDP  | 0  | 0  | 0  | 1  | 0  | 0  | 1  | 0  | 0  | 0  | 1  | 0  |
| 33      | VII D | MAT  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| 34      | VII D | MAS  | 0  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 0  |
| 35      | VII D | SK   | 0  | 0  | 1  | 1  | 0  | 0  | 1  | 1  | 1  | 1  | 1  | 0  |
| 36      | VII D | NSA  | 1  | 1  | 1  | 1  | 0  | 0  | 1  | 0  | 1  | 0  | 0  | 1  |
| 37      | VII D | BIN  | 1  | 0  | 0  | 1  | 0  | 0  | 1  | 1  | 0  | 0  | 0  | 0  |
| 38      | VII D | MSN  | 1  | 0  | 0  | 1  | 0  | 0  | 1  | 1  | 1  | 1  | 0  | 0  |
| 39      | VII D | KDA  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 1  | 1  |
| 40      | VII D | SNN  | 1  | 0  | 0  | 0  | 1  | 0  | 1  | 0  | 0  | 0  | 0  | 1  |
| 41      | VII D | MDW  | 1  | 0  | 0  | 1  | 1  | 0  | 0  | 1  | 1  | 1  | 0  | 0  |
| 42      | VII D | BAI  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 1  | 1  | 0  | 1  | 1  |
| 43      | VII D | RAA  | 0  | 0  | 0  | 0  | 1  | 0  | 1  | 0  | 1  | 0  | 1  | 1  |
| 44      | VII D | SCR  | 0  | 1  | 0  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 1  |
| 45      | VII D | AAN  | 1  | 0  | 0  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| 46      | VII D | NOR  | 1  | 0  | 0  | 1  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 0  |
| 47      | VII D | YR   | 0  | 0  | 1  | 0  | 0  | 0  | 1  | 1  | 1  | 0  | 1  | 0  |
| 48      | VII D | FWF  | 1  | 0  | 0  | 0  | 1  | 0  | 0  | 1  | 1  | 0  | 1  | 0  |
| 49      | VII D | NQPS | 1  | 0  | 0  | 0  | 1  | 0  | 0  | 1  | 1  | 0  | 1  | 0  |
| 50      | VII D | QAA  | 1  | 0  | 0  | 1  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 1  |
| 51      | VII D | QTA  | 1  | 1  | 1  | 1  | 0  | 0  | 1  | 1  | 1  | 1  | 0  | 1  |
| 52      | VII D | FYK  | 1  | 0  | 0  | 1  | 0  | 1  | 0  | 1  | 1  | 1  | 0  | 0  |
| 53      | VII D | MSA  | 1  | 0  | 0  | 1  | 1  | 0  | 1  | 0  | 1  | 1  | 0  | 0  |
| 54      | VII D | SAR  | 1  | 0  | 0  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| 55      | VII D | NSPA | 1  | 0  | 0  | 1  | 1  | 0  | 1  | 0  | 0  | 0  | 0  | 0  |
| 56      | VII D | M    | 1  | 0  | 0  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 1  |
| 57      | VII D | GE   | 1  | 1  | 0  | 1  | 1  | 0  | 1  | 1  | 0  | 0  | 0  | 0  |
| 58      | VII D | AL   | 1  | 0  | 0  | 1  | 1  | 0  | 1  | 1  | 0  | 0  | 0  | 0  |
| 59      | VII D | A    | 1  | 1  | 0  | 1  | 0  | 1  | 0  | 1  | 1  | 1  | 0  | 0  |
| x       |       |      | 41 | 8  | 7  | 46 | 26 | 9  | 37 | 32 | 25 | 22 | 29 | 25 |
| n       |       |      |    |    |    |    |    |    |    |    |    |    |    |    |
| n-1     |       |      |    |    |    |    |    |    |    |    |    |    |    |    |
| Total B |       |      | 41 | 8  | 7  | 46 | 26 | 9  | 37 | 32 | 25 | 22 | 29 | 25 |
| Total S |       |      | 18 | 51 | 52 | 13 | 33 | 50 | 22 | 27 | 34 | 37 | 30 | 34 |

|              |  |  |          |          |          |          |          |          |          |          |          |          |          |          |
|--------------|--|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| p            |  |  | 0,694915 | 0,135593 | 0,118644 | 0,779661 | 0,440678 | 0,152542 | 0,627119 | 0,542373 | 0,423729 | 0,372881 | 0,491525 | 0,423729 |
| q            |  |  | 0,305085 | 0,864407 | 0,881356 | 0,220339 | 0,559322 | 0,847458 | 0,372881 | 0,457627 | 0,576271 | 0,627119 | 0,508475 | 0,576271 |
| pq           |  |  | 0,212008 | 0,117208 | 0,104568 | 0,17179  | 0,246481 | 0,129273 | 0,233841 | 0,248205 | 0,244183 | 0,233841 | 0,249928 | 0,244183 |
| Jpq          |  |  | 7,596668 |          |          |          |          |          |          |          |          |          |          |          |
| Varian Total |  |  | 29,00661 |          |          |          |          |          |          |          |          |          |          |          |
| R11          |  |  | 0,759815 |          |          |          |          |          |          |          |          |          |          |          |



| 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | Total Score |
|----|----|----|----|----|----|----|----|-------------|
| 0  | 1  | 0  | 1  | 1  | 1  | 0  | 1  | 23          |
| 0  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 20          |
| 0  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 20          |
| 0  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 20          |
| 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 22          |
| 0  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 15          |
| 0  | 1  | 1  | 1  | 1  | 0  | 0  | 0  | 17          |
| 1  | 1  | 0  | 1  | 0  | 1  | 1  | 1  | 29          |
| 1  | 1  | 0  | 1  | 0  | 1  | 1  | 1  | 25          |
| 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 4           |
| 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 12          |
| 0  | 1  | 0  | 0  | 1  | 1  | 1  | 1  | 16          |
| 1  | 1  | 0  | 0  | 1  | 0  | 0  | 1  | 13          |
| 0  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 14          |
| 0  | 1  | 0  | 0  | 1  | 1  | 0  | 1  | 18          |
| 0  | 0  | 0  | 1  | 1  | 0  | 0  | 0  | 13          |
| 0  | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 13          |
| 0  | 1  | 0  | 0  | 1  | 0  | 0  | 0  | 13          |
| 0  | 0  | 1  | 0  | 0  | 1  | 1  | 1  | 19          |
| 1  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 9           |
| 1  | 1  | 0  | 0  | 0  | 1  | 1  | 0  | 13          |
| 0  | 1  | 0  | 0  | 1  | 0  | 0  | 0  | 12          |
| 0  | 1  | 1  | 0  | 1  | 1  | 1  | 0  | 21          |
| 0  | 0  | 1  | 0  | 1  | 1  | 1  | 0  | 25          |
| 0  | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 9           |
| 0  | 0  | 0  | 0  | 1  | 1  | 0  | 0  | 12          |
| 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 9           |
| 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 22          |
| 1  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 16          |
| 1  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 17          |
| 0  | 1  | 0  | 0  | 1  | 0  | 1  | 1  | 14          |

|    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|
| 0  | 1  | 0  | 1  | 0  | 0  | 0  | 0  | 8  |
| 0  | 1  | 0  | 0  | 1  | 1  | 0  | 0  | 7  |
| 0  | 1  | 0  | 0  | 1  | 1  | 0  | 0  | 17 |
| 0  | 1  | 0  | 1  | 0  | 1  | 1  | 1  | 16 |
| 0  | 1  | 0  | 0  | 1  | 0  | 1  | 1  | 21 |
| 1  | 1  | 1  | 0  | 1  | 1  | 0  | 1  | 17 |
| 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 10 |
| 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 21 |
| 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 21 |
| 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 21 |
| 1  | 1  | 0  | 0  | 1  | 0  | 1  | 1  | 14 |
| 1  | 1  | 0  | 0  | 1  | 0  | 1  | 1  | 13 |
| 1  | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 12 |
| 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 18 |
| 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 19 |
| 1  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 9  |
| 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 24 |
| 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 23 |
| 0  | 0  | 1  | 1  | 1  | 0  | 0  | 1  | 20 |
| 0  | 1  | 1  | 1  | 1  | 0  | 0  | 1  | 23 |
| 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 21 |
| 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 25 |
| 0  | 1  | 0  | 0  | 0  | 1  | 1  | 0  | 13 |
| 1  | 0  | 1  | 1  | 0  | 1  | 0  | 0  | 13 |
| 1  | 1  | 1  | 1  | 1  | 0  | 1  | 0  | 19 |
| 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 21 |
| 0  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 20 |
| 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 26 |
| 25 | 40 | 25 | 27 | 40 | 43 | 38 | 34 |    |

|    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|
| 25 | 40 | 25 | 27 | 40 | 43 | 38 | 34 |
| 34 | 19 | 34 | 32 | 19 | 16 | 21 | 25 |

|          |          |          |          |          |          |          |          |  |
|----------|----------|----------|----------|----------|----------|----------|----------|--|
| 0,423729 | 0,677966 | 0,423729 | 0,457627 | 0,677966 | 0,728814 | 0,644068 | 0,576271 |  |
| 0,576271 | 0,322034 | 0,576271 | 0,542373 | 0,322034 | 0,271186 | 0,355932 | 0,423729 |  |
| 0,244183 | 0,218328 | 0,244183 | 0,248205 | 0,218328 | 0,197644 | 0,229244 | 0,244183 |  |
|          |          |          |          |          |          |          |          |  |
|          |          |          |          |          |          |          |          |  |
|          |          |          |          |          |          |          |          |  |

## 9. Result of Normality Testing

Picture of pre-test experimental class

| No. | Experimental | Z           | FZ         | SZ         | FZ-SZ      |
|-----|--------------|-------------|------------|------------|------------|
| 1   | 10           | -1,49870613 | 0,06697494 | 0,06451613 | 0,00245881 |
| 2   | 10           | -1,49870613 | 0,06697494 | 0,06451613 | 0,00245881 |
| 3   | 20           | -1,17290045 | 0,12041786 | 0,22580645 | 0,10538859 |
| 4   | 20           | -1,17290045 | 0,12041786 | 0,22580645 | 0,10538859 |
| 5   | 20           | -1,17290045 | 0,12041786 | 0,22580645 | 0,10538859 |
| 6   | 20           | -1,17290045 | 0,12041786 | 0,22580645 | 0,10538859 |
| 7   | 20           | -1,17290045 | 0,12041786 | 0,22580645 | 0,10538859 |
| 8   | 30           | -0,84709477 | 0,19847115 | 0,25806452 | 0,05959337 |
| 9   | 40           | -0,52128909 | 0,3010827  | 0,4516129  | 0,1505302  |
| 10  | 40           | -0,52128909 | 0,3010827  | 0,4516129  | 0,1505302  |
| 11  | 40           | -0,52128909 | 0,3010827  | 0,4516129  | 0,1505302  |
| 12  | 40           | -0,52128909 | 0,3010827  | 0,4516129  | 0,1505302  |
| 13  | 40           | -0,52128909 | 0,3010827  | 0,4516129  | 0,1505302  |
| 14  | 40           | -0,52128909 | 0,3010827  | 0,4516129  | 0,1505302  |
| 15  | 50           | -0,19548341 | 0,42250726 | 0,48387097 | 0,0613637  |
| 16  | 60           | 0,13032227  | 0,55184427 | 0,58064516 | 0,02880089 |
| 17  | 60           | 0,13032227  | 0,55184427 | 0,58064516 | 0,02880089 |
| 18  | 60           | 0,13032227  | 0,55184427 | 0,58064516 | 0,02880089 |
| 19  | 70           | 0,45612795  | 0,67585101 | 0,67741935 | 0,00156834 |
| 20  | 70           | 0,45612795  | 0,67585101 | 0,67741935 | 0,00156834 |
| 21  | 70           | 0,45612795  | 0,67585101 | 0,67741935 | 0,00156834 |
| 22  | 80           | 0,78193363  | 0,78287321 | 0,70967742 | 0,07319579 |
| 23  | 90           | 1,10773931  | 0,86601279 | 0,80645161 | 0,05956118 |
| 24  | 90           | 1,10773931  | 0,86601279 | 0,80645161 | 0,05956118 |
| 25  | 90           | 1,10773931  | 0,86601279 | 0,80645161 | 0,05956118 |
| 26  | 100          | 1,43354499  | 0,92414892 | 0,96774194 | 0,04359301 |
| 27  | 100          | 1,43354499  | 0,92414892 | 0,96774194 | 0,04359301 |
| 28  | 100          | 1,43354499  | 0,92414892 | 0,96774194 | 0,04359301 |
| 29  | 100          | 1,43354499  | 0,92414892 | 0,96774194 | 0,04359301 |
| 30  | 100          | 1,43354499  | 0,92414892 | 0,96774194 | 0,04359301 |

Picture of pre-test control class

| No. | Control | Z           | FZ         | SZ         | FZ-SZ      |
|-----|---------|-------------|------------|------------|------------|
| 1   | 10      | -1,80623919 | 0,03544049 | 0,03225806 | 0,00318243 |
| 2   | 20      | -1,30450608 | 0,09603054 | 0,09677419 | 0,00074365 |
| 3   | 20      | -1,30450608 | 0,09603054 | 0,09677419 | 0,00074365 |
| 4   | 30      | -0,80277297 | 0,21105298 | 0,35483871 | 0,14378573 |
| 5   | 30      | -0,80277297 | 0,21105298 | 0,35483871 | 0,14378573 |
| 6   | 30      | -0,80277297 | 0,21105298 | 0,35483871 | 0,14378573 |
| 7   | 30      | -0,80277297 | 0,21105298 | 0,35483871 | 0,14378573 |
| 8   | 30      | -0,80277297 | 0,21105298 | 0,35483871 | 0,14378573 |
| 9   | 30      | -0,80277297 | 0,21105298 | 0,35483871 | 0,14378573 |
| 10  | 30      | -0,80277297 | 0,21105298 | 0,35483871 | 0,14378573 |
| 11  | 30      | -0,80277297 | 0,21105298 | 0,35483871 | 0,14378573 |
| 12  | 40      | -0,30103986 | 0,38169205 | 0,48387097 | 0,10217892 |
| 13  | 40      | -0,30103986 | 0,38169205 | 0,48387097 | 0,10217892 |
| 14  | 40      | -0,30103986 | 0,38169205 | 0,48387097 | 0,10217892 |
| 15  | 40      | -0,30103986 | 0,38169205 | 0,48387097 | 0,10217892 |
| 16  | 50      | 0,20069324  | 0,57953078 | 0,70967742 | 0,13014664 |
| 17  | 50      | 0,20069324  | 0,57953078 | 0,70967742 | 0,13014664 |
| 18  | 50      | 0,20069324  | 0,57953078 | 0,70967742 | 0,13014664 |
| 19  | 50      | 0,20069324  | 0,57953078 | 0,70967742 | 0,13014664 |
| 20  | 50      | 0,20069324  | 0,57953078 | 0,70967742 | 0,13014664 |
| 21  | 50      | 0,20069324  | 0,57953078 | 0,70967742 | 0,13014664 |
| 22  | 50      | 0,20069324  | 0,57953078 | 0,70967742 | 0,13014664 |
| 23  | 60      | 0,70242635  | 0,75879334 | 0,80645161 | 0,04765827 |
| 24  | 60      | 0,70242635  | 0,75879334 | 0,80645161 | 0,04765827 |
| 25  | 60      | 0,70242635  | 0,75879334 | 0,80645161 | 0,04765827 |
| 26  | 70      | 1,20415946  | 0,88573602 | 0,83870968 | 0,04702635 |
| 27  | 80      | 1,70589257  | 0,95598596 | 0,93548387 | 0,02050209 |
| 28  | 80      | 1,70589257  | 0,95598596 | 0,93548387 | 0,02050209 |
| 29  | 80      | 1,70589257  | 0,95598596 | 0,93548387 | 0,02050209 |
| 30  | 90      | 2,20762567  | 0,98636481 | 0,96774194 | 0,01862288 |

### Picture of post-test experimental class

| No. | Experimental | Z           | FZ         | SZ         | FZ-SZ      |
|-----|--------------|-------------|------------|------------|------------|
| 1   | 30           | -1,92121166 | 0,02735251 | 0,06451613 | 0,03716361 |
| 2   | 30           | -1,92121166 | 0,02735251 | 0,06451613 | 0,03716361 |
| 3   | 40           | -1,49741497 | 0,06714266 | 0,19354839 | 0,12640573 |
| 4   | 40           | -1,49741497 | 0,06714266 | 0,19354839 | 0,12640573 |
| 5   | 40           | -1,49741497 | 0,06714266 | 0,19354839 | 0,12640573 |
| 6   | 40           | -1,49741497 | 0,06714266 | 0,19354839 | 0,12640573 |
| 7   | 50           | -1,07361828 | 0,1414969  | 0,22580645 | 0,08430955 |
| 8   | 60           | -0,64982159 | 0,25790374 | 0,25806452 | 0,00016078 |
| 9   | 70           | -0,2260249  | 0,41059103 | 0,41935484 | 0,00876381 |
| 10  | 70           | -0,2260249  | 0,41059103 | 0,41935484 | 0,00876381 |
| 11  | 70           | -0,2260249  | 0,41059103 | 0,41935484 | 0,00876381 |
| 12  | 70           | -0,2260249  | 0,41059103 | 0,41935484 | 0,00876381 |
| 13  | 70           | -0,2260249  | 0,41059103 | 0,41935484 | 0,00876381 |
| 14  | 80           | 0,19777179  | 0,57838819 | 0,48387097 | 0,09451722 |
| 15  | 80           | 0,19777179  | 0,57838819 | 0,48387097 | 0,09451722 |
| 16  | 90           | 0,62156848  | 0,73288717 | 0,74193548 | 0,00904831 |
| 17  | 90           | 0,62156848  | 0,73288717 | 0,74193548 | 0,00904831 |
| 18  | 90           | 0,62156848  | 0,73288717 | 0,74193548 | 0,00904831 |
| 19  | 90           | 0,62156848  | 0,73288717 | 0,74193548 | 0,00904831 |
| 20  | 90           | 0,62156848  | 0,73288717 | 0,74193548 | 0,00904831 |
| 21  | 90           | 0,62156848  | 0,73288717 | 0,74193548 | 0,00904831 |
| 22  | 90           | 0,62156848  | 0,73288717 | 0,74193548 | 0,00904831 |
| 23  | 90           | 0,62156848  | 0,73288717 | 0,74193548 | 0,00904831 |
| 24  | 100          | 1,04536517  | 0,85207288 | 0,96774194 | 0,11566905 |
| 25  | 100          | 1,04536517  | 0,85207288 | 0,96774194 | 0,11566905 |
| 26  | 100          | 1,04536517  | 0,85207288 | 0,96774194 | 0,11566905 |
| 27  | 100          | 1,04536517  | 0,85207288 | 0,96774194 | 0,11566905 |
| 28  | 100          | 1,04536517  | 0,85207288 | 0,96774194 | 0,11566905 |
| 29  | 100          | 1,04536517  | 0,85207288 | 0,96774194 | 0,11566905 |
| 30  | 100          | 1,04536517  | 0,85207288 | 0,96774194 | 0,11566905 |

### Picture of post-test control class

| No. | Control | Z           | FZ         | SZ         | FZ-SZ      |
|-----|---------|-------------|------------|------------|------------|
| 1   | 20      | -2,2155051  | 0,01336271 | 0,03225806 | 0,01889536 |
| 2   | 30      | -1,74075401 | 0,04086335 | 0,09677419 | 0,05591084 |
| 3   | 30      | -1,74075401 | 0,04086335 | 0,09677419 | 0,05591084 |
| 4   | 40      | -1,26600292 | 0,10275602 | 0,12903226 | 0,02627624 |
| 5   | 50      | -0,79125182 | 0,21439853 | 0,29032258 | 0,07592405 |
| 6   | 50      | -0,79125182 | 0,21439853 | 0,29032258 | 0,07592405 |
| 7   | 50      | -0,79125182 | 0,21439853 | 0,29032258 | 0,07592405 |
| 8   | 50      | -0,79125182 | 0,21439853 | 0,29032258 | 0,07592405 |
| 9   | 50      | -0,79125182 | 0,21439853 | 0,29032258 | 0,07592405 |
| 10  | 60      | -0,31650073 | 0,37581124 | 0,41935484 | 0,0435436  |
| 11  | 60      | -0,31650073 | 0,37581124 | 0,41935484 | 0,0435436  |
| 12  | 60      | -0,31650073 | 0,37581124 | 0,41935484 | 0,0435436  |
| 13  | 60      | -0,31650073 | 0,37581124 | 0,41935484 | 0,0435436  |
| 14  | 70      | 0,15825036  | 0,56287024 | 0,64516129 | 0,08229105 |
| 15  | 70      | 0,15825036  | 0,56287024 | 0,64516129 | 0,08229105 |
| 16  | 70      | 0,15825036  | 0,56287024 | 0,64516129 | 0,08229105 |
| 17  | 70      | 0,15825036  | 0,56287024 | 0,64516129 | 0,08229105 |
| 18  | 70      | 0,15825036  | 0,56287024 | 0,64516129 | 0,08229105 |
| 19  | 70      | 0,15825036  | 0,56287024 | 0,64516129 | 0,08229105 |
| 20  | 70      | 0,15825036  | 0,56287024 | 0,64516129 | 0,08229105 |
| 21  | 80      | 0,63300146  | 0,73663365 | 0,67741935 | 0,0592143  |
| 22  | 90      | 1,10775255  | 0,86601565 | 0,93548387 | 0,06946822 |
| 23  | 90      | 1,10775255  | 0,86601565 | 0,93548387 | 0,06946822 |
| 24  | 90      | 1,10775255  | 0,86601565 | 0,93548387 | 0,06946822 |
| 25  | 90      | 1,10775255  | 0,86601565 | 0,93548387 | 0,06946822 |
| 26  | 90      | 1,10775255  | 0,86601565 | 0,93548387 | 0,06946822 |
| 27  | 90      | 1,10775255  | 0,86601565 | 0,93548387 | 0,06946822 |
| 28  | 90      | 1,10775255  | 0,86601565 | 0,93548387 | 0,06946822 |
| 29  | 90      | 1,10775255  | 0,86601565 | 0,93548387 | 0,06946822 |
| 30  | 100     | 1,58250365  | 0,94323268 | 0,96774194 | 0,02450926 |

## 10. Result of Homogeinity Testing

| No. | Experimental | Control |
|-----|--------------|---------|
| 1   | 50           | 30      |
| 2   | 20           | 30      |
| 3   | 70           | 90      |
| 4   | 40           | 40      |
| 5   | 20           | 30      |
| 6   | 40           | 50      |
| 7   | 20           | 10      |
| 8   | 40           | 60      |
| 9   | 20           | 40      |
| 10  | 10           | 30      |
| 11  | 60           | 50      |
| 12  | 70           | 70      |
| 13  | 40           | 60      |
| 14  | 30           | 30      |
| 15  | 90           | 20      |
| 16  | 60           | 20      |
| 17  | 70           | 50      |
| 18  | 20           | 50      |
| 19  | 90           | 80      |
| 20  | 100          | 50      |
| 21  | 100          | 60      |
| 22  | 100          | 30      |
| 23  | 90           | 50      |
| 24  | 80           | 80      |
| 25  | 40           | 30      |
| 26  | 100          | 40      |
| 27  | 100          | 80      |
| 28  | 40           | 50      |
| 29  | 10           | 30      |
| 30  | 60           | 40      |

### 11. Gain Score Experimental Class and Control Class

| Experimental Group |          |           |                         | Control Group |          |           |                   |
|--------------------|----------|-----------|-------------------------|---------------|----------|-----------|-------------------|
| No.                | pre-test | post-test | gainscore experiemental | No.           | pre-test | post-test | gainscore control |
| 1                  | 50       | 90        | 40                      | 1             | 30       | 50        | 20                |
| 2                  | 20       | 50        | 30                      | 2             | 30       | 60        | 30                |
| 3                  | 70       | 70        | 0                       | 3             | 90       | 90        | 0                 |
| 4                  | 40       | 90        | 50                      | 4             | 40       | 50        | 10                |
| 5                  | 20       | 30        | 10                      | 5             | 30       | 70        | 40                |
| 6                  | 40       | 70        | 30                      | 6             | 50       | 60        | 10                |
| 7                  | 20       | 90        | 70                      | 7             | 10       | 20        | 10                |
| 8                  | 40       | 70        | 30                      | 8             | 60       | 70        | 10                |
| 9                  | 20       | 40        | 20                      | 9             | 40       | 70        | 30                |
| 10                 | 10       | 40        | 30                      | 10            | 30       | 50        | 20                |
| 11                 | 60       | 80        | 20                      | 11            | 50       | 90        | 40                |
| 12                 | 70       | 80        | 10                      | 12            | 70       | 80        | 10                |
| 13                 | 40       | 60        | 20                      | 13            | 60       | 70        | 10                |
| 14                 | 30       | 40        | 10                      | 14            | 30       | 70        | 40                |
| 15                 | 90       | 100       | 10                      | 15            | 20       | 30        | 10                |
| 16                 | 60       | 70        | 10                      | 16            | 20       | 30        | 10                |
| 17                 | 70       | 90        | 20                      | 17            | 50       | 90        | 40                |
| 18                 | 20       | 30        | 10                      | 18            | 50       | 90        | 40                |
| 19                 | 90       | 90        | 0                       | 19            | 80       | 100       | 20                |
| 20                 | 100      | 100       | 0                       | 20            | 50       | 70        | 20                |
| 21                 | 100      | 100       | 0                       | 21            | 60       | 90        | 30                |
| 22                 | 100      | 100       | 0                       | 22            | 30       | 70        | 40                |
| 23                 | 90       | 100       | 10                      | 23            | 50       | 90        | 40                |
| 24                 | 80       | 90        | 10                      | 24            | 80       | 90        | 10                |
| 25                 | 40       | 40        | 0                       | 25            | 30       | 40        | 10                |
| 26                 | 100      | 100       | 0                       | 26            | 40       | 50        | 10                |
| 27                 | 100      | 100       | 0                       | 27            | 80       | 90        | 10                |
| 28                 | 40       | 90        | 50                      | 28            | 50       | 60        | 10                |
| 29                 | 10       | 90        | 80                      | 29            | 30       | 50        | 20                |
| 30                 | 60       | 70        | 10                      | 30            | 40       | 60        | 20                |

## Appendic D : Documentation

### 1. During Activities





## 2. Research Permit



**PEMERINTAH KOTA MALANG**  
**DINAS PENDIDIKAN DAN KEBUDAYAAN**  
Jl. Veteran No. 19 Telp. (0341) 560946, Fax. (0341) 551333  
Website : <http://dikbud.malangkota.go.id> | Email : [dikbud@malangkota.go.id](mailto:dikbud@malangkota.go.id)  
Malang Kode Pos : 65145

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**REKOMENDASI**  
Nomor : 000.9.2/701/35.73.401/2025

Menindaklanjuti surat Wakil Dekan I Bidang Akademik Fakultas Ilmu Tarbiyah dan Keguruan Universitas Islam Negeri Maulana Malik Ibrahim Malang dari tanggal 22 Mei 2025 Nomor : 1900/Un.03.1/TL.001/05/2025 Perihal : Permohonan Izin Penelitian, maka dengan ini Dinas Pendidikan dan Kebudayaan Kota Malang memberi ijin untuk melaksanakan kegiatan dimaksud kepada Saudara :

1. Nama : Dwi Romaita
2. NIM : 19180064
3. Jenjang : S1
4. Prodi. / Jurusan : Tadris Bahasa Inggris (TBI)
5. Tempat Pelaksanaan : SMPN 4 Malang
6. Waktu Pelaksanaan : Mei - Juni 2025
7. Judul : The Effectiveness of Pelmanism Game Using Couple Cards or Seventh Grade Students' Vocabulary Mastery

Dengan Ketentuan :

1. Dikoordinasikan sebaik – baiknya dengan Kepala Bidang Pembinaan Pendidikan Dasar dan Kepala SMPN 4 Malang
2. Tidak melakukan penelitian yang tidak sesuai atau tidak ada kaitannya dengan judul, maksud dan tujuan penelitian
3. Menjaga perilaku dan menaati tata tertib yang berlaku pada lembaga tersebut di atas;
4. Menaati ketentuan peraturan perundang-undangan;
5. Selesai melaksanakan penelitian / Observasi / KKL / KKN, wajib menyampaikan laporan kepada Kepala Dinas Pendidikan dan Kebudayaan Kota Malang
6. Dilaksanakan dengan tetap memperhatikan protokol kesehatan

Demikian untuk menjadikan periksa.

Malang, 23 Mei 2025  
A.n KEPALA DINAS PENDIDIKAN DAN KEBUDAYAAN,  
Kepala Subbag Umum dan Kepegawaian



**DYAH KUSARINI, S.Si**  
Penata Tk I III/d  
NIP.198486009292005012017

Tembusan :  
Yth.

1. Bpk. Kepala Dinas Pendidikan dan Kebudayaan Kota Malang (Sebagai Laporan)
2. Sdr. Kepala SMPN 4 Malang
3. Sdr. Wakil Dekan I Bidang Akademik Fakultas Ilmu Tarbiyah dan Keguruan Universitas Islam Negeri Maulana Malik Ibrahim Malang
4. Yang Bersangkutan

Dokumen ini telah ditandatangani secara elektronik menggunakan sertifikat elektronik yang diterbitkan oleh Balai Besar Sertifikasi Elektronik (BSrE), Badan Siber dan Sandi Negara

## Appendic E : Consultation Sheet

### KONSULTASI BIMBINGAN SKRIPSI

Nama : Dwi Romaita  
 NIM : 19180064  
 Judul : THE EFFECTIVENESS OF PELMASNISM GAME USING COUPLE CARDS FOR SEVENTH GRADE STUDENT' VOCABULARY MASTERY  
 Dosen Pembimbing : Septia Dwi Jayanti, M.pd

| No | Tanggal/Bulan/Tahun | Materi Bimbingan                         | TTD                                                                                   |
|----|---------------------|------------------------------------------|---------------------------------------------------------------------------------------|
| 1  | 11 April 2023       | Sosialisasi Sitasi dan Rancangan BAB 1-3 |    |
| 2  | 21 April 2023       | Setor Revisi bab 1-3                     |    |
| 3  | 17 Mei 2023         | Penyetoran Proposal                      |   |
| 4  | 18 Februari 2025    | Bimbingan Instrumen Penelitian           |  |
| 5  | 20 Februari 2025    | Bimbingan Instrumen Penelitian           |  |
| 6  | 13 Mei 2026         | Konsultasi BAB 4                         |  |
| 7  | 18 Mei 2026         | Konsultasi BAB 5 dan revisi              |  |

Malang,  
 Mengetahui.  
 Ketua Jurusan TBI

Dosen Pembimbing



Septia Dwi Jayanti, M.pd  
 NIP. 198909122023212051



Maslihatul Bisriyah, M.TESOL  
 NIP. 19890928 20190320 16

## Appendix F : Curriculum Vitae

### Curriculum Vitae

|                       |                                                                        |
|-----------------------|------------------------------------------------------------------------|
| Nama Lengkap          | : Dwi Romaita                                                          |
| Tempat, Tanggal Lahir | : Blitar, 17 Februari 2000                                             |
| Jenis Kelamin         | : Perempuan                                                            |
| Agama                 | : Islam                                                                |
| Fakultas              | : Tarbiyah dan Ilmu Keguruan                                           |
| Jurusan               | : Tadris Bahasa Inggris                                                |
| Perguruan Tinggi      | : UIN Malang                                                           |
| Alamat Rumah          | : Dsn. Jajar, Desa Selopuro RT 02 RW 11, Kec.<br>Selopuro, Kab. Blitar |
| No. Hp / Telp         | : 085755351281                                                         |
| Alamat Email          | : <a href="mailto:tataromaita@gmail.com">tataromaita@gmail.com</a>     |



#### Riwayat Pendidikan

1. RA Perwanida Jajar Selopuro
2. SDIT Roudlatul Jannah Gading Selopuro
3. MTs Ma'arif NU Kota Blitar
4. MAN 1 Blitar
5. UIN Malang

Blitar, 18 April 2026

Mahasiswa,

Dwi Romaita

NIM.19180064