THE EFFECTIVENESS OF JIGSAW LEARNING TECHNIQUE USING PICTURE CARDS FOR IMPROVING STUDENT VOCABULARY MASTERY AT MTsN 2 PONOROGO IN THE ACADEMIC YEAR 2023/2024

THESIS

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ABSTRACT

Diaz, Revia Lutvinur. 2024. *The Effectiveness of Jigsaw Learning Technique Using Picture Cards for Improving Student Vocabulary Mastery at Mtsn 2 Ponorogo Sarjana's.* **Thesis**, English Language Teaching Departement, Faculty of Tarbiyah and Teacher Training, State Islamic Institute of Ponorogo.
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Vocabulary mastery is a very important skill in English language learning. When students are able to improve their ability to understand vocabulary, it can facilitate skills in reading, writing, listening, and speaking. students will be able to show what is the difficulty in understanding English vocabulary in learning activities. improving students' vocabulary understanding can be done using learning techniques, namely jigsaw learning techniques using picture cards. this technique shows the effectiveness of learning so that it can improve students' vocabulary skills.

This study aims to find out whether there is a significant difference in vocabulary comprehension between students who are taught using the Jigsaw learning technique and those who are not.

This research uses quantitative methods with a quasi-experimental design form. the research was conducted using two classes, namely, the control class and the experimental class. The population of this study were VIII grade students of MTsN 2 Ponorogo in the 2023/2024 school year totaling 247 students, with a sample of 2 classes. the sample used was 60 students, with an experimental class of 30 students and a control class of 30 students. Data were collected through tests and documentation. The formula used in analyzing data is using the t-test formula using SPSS 25.

Based on the results of data analysis, it is known that the average score of the pre-test in the experimental class was 59.53 and the post-test was 83.73, then the average score in the control class was with an average pre-test score of 59.53 and post-test with an average of 74.60. That way a significant change was obtained in the experimental class and there was no significant change in the control class. Based on the data analysis of hypothesis testing, it can be stated that H_0 is rejected and H_a is accepted. As shown in the previous analysis, there is a significant difference in vocabulary acquisition ability between students taught using jigsaw learning technique with picture cards and students taught without picture cards. In addition, the experimental class acquisition score is better when compared to the control class score. in this case it can be concluded that the jigsaw learning technique using picture cards is effectively used in vocabulary mastery in class VIII students at MTsN 2 Ponorogo in the 2023/2024 academic year.

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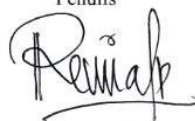
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Thank you for your attention to this matter.

Ponorogo, November 13th, 2024

Sincerely,

Revia Lutvinur Diaz

vi

CHAPTER 1

INTRODUCTION

A. Background of Study

Language is an activity for social development as much as it is for moral ability. In this case it is very important for students to understand a language, either a foreign language and a mother tongue, or both languages so that it can be a guide even for their own language.[1] Language is a communication system that becomes a forum for social activities and deepens an involvement in starting a thought about language in a valid way, besides that language is a set of sentences that can be understood so that it can find an answer to a question so that there is a good communication and way of thinking.[2] This means that language is the most important element for humans. Not only mastering the mother tongue, foreign languages are also very important to implicate to establish a good communication. Humans can communicate with fellow owners of their mother tongue, but if they master a foreign language then of course they can communicate with other people from different countries, because in this case not everyone can know the mother tongue of each country. Language has an important role in life. In addition to communicating, language is also used for learning, so as to gain knowledge and skills to pursue education and establish a good relationship with others.

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[1] Jeremy Harmer. *The Practice of English Language Teaching* (Pearson, Longman)

[2] Noel Burton-Roberts. *Analysing Sentences An Introduction to English Syntax* (Pearson Education Limited: 2011)

Language teaching is an approach that is generally presented to explore a language approach with a particular teaching (Diane Larsen-Freeman, 2000) method.[3] In this case, it will provide a better understanding when an observation is made in a classroom that can provide a reference for a particular method and will be treated in practice in the classroom in a meeting that can bring all students to be more ideal in mastering the existing learning. Learning will go well when teachers can bring learning methods that are easily understood by their students. Because students are not necessarily able to grasp the lessons delivered quickly and teachers will be required to face this problem and be able to manage a class. It can be interpreted that students do not always match the lessons delivered by the teacher so that the teacher can use a method for success and smoothness in learning.

There are many types of learning used by teachers, one of which is cooperative learning.[4] Cooperative learning is a systematic learning model that can be used by teachers in learning to increase the knowledge and skills needed for group work to be effective and consistent. cooperative learning models can be used for all levels and fields of study from pre-school to graduate school. The procedures in this learning model help students to practice skills and explore concepts in learning materials that are appropriate to the curriculum that has been established for their class and

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[3] Diane Larsen-Freeman, Marti Anderson. Techniques & Principles in Language Teaching (Oxford, Oxford University Press:2000)

[4] Dee Dishon, Pat Wilson O'Lear. A Guidebook for Cooperative Learning : A Technique for Creating More Effective Schools (Holmes Beach, Florida. Learning Publications, INC: 1984)

field of study. Cooperative learning involves students not only in learning skills but also in social communication within their group so that there are appropriate and direct social relationships between students. In a cooperative learning situation, students work and learn in a group.

One type of cooperative learning model is the Jigsaw type. Jigsaw is a form of learning model with groups consisting of several members in it, where each group member is given the responsibility of mastering the material during learning and then will be presented to their members and other groups.[5] Jigsaw learning is a group learning technique used in classroom learning where the teacher will divide all students in the class into several small groups. Jigsaw learning can increase students' sense of responsibility and activeness in conducting discussions with their groups so that learning materials can be conveyed well and easily accepted by students. Jigsaw learning strategy is that students are required to have full responsibility in the learning process, the teacher only as a companion. The Jigsaw learning model uses the "group-to-group exchange" technique where each learner teaches something to another learner so that there is discussion within the group to other groups.[6] Jigsaw learning technique aims to build and strengthen teamwork, improve social and communication skills among group members, and enable students to improve mastery of the material, as well as foster critical thinking patterns.

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5 Dr. M. Sobry Sutikno. Metode & Model-Model Pembelajaran (Lombok, Holistica: 2019), pg 79

6 Dr. Hj. Helmiati, M. Ag. Model Pembelajaran (Sleman, Yogyakarta, Aswajja Pressindo: 2012), pg 85

Learning media is one of the tools used to convey learning materials so that knowledge and messages can be easily received by students.[7] The main purpose of learning media is to maximize student proficiency in the process of achieving better understanding based on the information and messages discussed so as to achieve learning objectives effectively. To create a learning atmosphere that can attract attention and be fun for students in learning English vocabulary, a supporting media and technique is needed. it is known that learning media is important, so that teachers can choose supportive learning media in order to facilitate students in mastering vocabulary. [8] In this case, the teacher implements picture cards as media in teaching vocabulary.

Vocabulary is often exhibited in a written or spoken, productive or receptive form; in addition, knowledge of the analyzed vocabulary that has a broad or deep form, a specialized word or a general word.[9] Vocabulary is an important component and aspect of reading, writing, listening and speaking in English language learning, besides it can teach students about the second language used after the mother tongue. Teaching vocabulary to learners or students is very important. According to Hatch & Brown, one of the important factors in learning a language is vocabulary, where vocabulary is the basis of language acquisition.[10] Learning a foreign language and

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[7] Yusni Arni, et.al. *The Effect of Flash Card Media on Student Learning Outcomes in Social Studies Subjects* (Universitas PGRI Palembang, Indonesia), Pg 39

[8] Tanti Sukmahidayanti, *"The Utilization Of Instructional Media in Teaching English To Young Learners,"* Journal of English and Education, 3, no 2 (2015): 90

[9] Timothy Rasinski, William H. Rupley. *Vocabulary Development* (MDPI, Switzerland, MDPI; 2019), Pg 29

[10] Hatch, E. V., and Brown, C. *Vocabulary, Semantics, and Language Education* (Cambridge University: United States of America: 1995)

communicating with a foreign language clearly requires a mastery of vocabulary. One of the goals of learning to master vocabulary is to hope that students are able to process how to speak with the right patterns and articulation. However, there are still often problems experienced by learners when learning vocabulary.

One of the aspects that can support the ability to learn and develop English as a foreign language is the ability to master vocabulary. vocabulary mastery can make it easier for students to understand and know the right way to use words based on their meaning. good language skills are obtained from the increasing number of vocabulary mastered by students..[11] Vocabulary has a basic level in learning English for that reason, students are expected to have a wider vocabulary, because it will help them to be more proficient in English so that it can help them in learning English.

The problems in mastering and understanding vocabulary experienced by students are generally almost the same, namely that students still experience difficulties in pronunciation, spelling and understanding vocabulary.[12] Several things cause students' low ability to understand vocabulary, namely teachers usually use monotonous learning techniques so that students pay less attention, the media used by teachers is not interesting, and cannot influence student motivation during the learning process,

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[11]Syarifudin, Marbun, and Novita, *"An Analysis on the Students' Vocabulary Mastery a Descriptive Study on the Mts,"* 2.

[12]Yesa Fitri, et.al,. *The Effect Of Using Duolingo Application Toward Students' Vocabulary Mastery At The Second Grade Of SMPN 1 Koto Besar.* Journal of English Language Studies, State Islamic Institute Of Bukittinggi. Volume 3 Nomor 2 Tahun 2023 Page 8265-8279

making students less focused on the teacher's explanation. Apart from that, the classroom atmosphere is not supportive because the teacher is unable to control the students. Another thing that causes a lack of understanding of vocabulary among students is that each student has different thinking patterns, so teachers cannot control and conclude in one situation. To overcome this problem, the techniques used by teachers must be interesting, fun, and of course attract students' attention so that the learning process is optimal and can motivate students.

The importance of understanding vocabulary influences the potential for broad knowledge with vocabulary mastery in English lessons. Apart from that, speaking using vocabulary will be difficult and meaningless if it is only based on mastering vocabulary without being balanced with understanding its meaning. By increasing understanding of vocabulary, someone will be able to express their thoughts and improve good communication.

In English language training, especially in junior high school, the goal of vocabulary mastery is that the more words you know, the greater your ability to understand what you hear and read and the greater your ability to be able to say what you want to say or write. In fact, vocabulary skills are still taught as a difficult part for students. Especially MTSN 2 PONOROGO students find it difficult to understand some vocabulary. Usually at school, teachers only provide a little guidance, but cannot provide all the information students need.

From the explanation above, the researcher would like to try to investigate: **"The Effectiveness of Jigsaw Learning Technique Using**

Picture Cards for Improving Student Vocabulary Master at MTsN 2 Ponorogo".

B. Identification of the Problems

Vocabulary mastery is a fundamental aspect of language learning that affects students' ability to understand, communicate, and build confidence in language use. At MTsN 2 Ponorogo, students face challenges in maintaining vocabulary when lecture and discussion teaching methods are applied, which often leads to a lack of communication between students and learning that does not evolve according to new innovations, hence it can slow down vocabulary development.

To address this issue, researchers at MTsN 2 Ponorogo explored alternative teaching techniques, specifically the jigsaw learning technique using picture cards. This approach integrates collaborative learning with visual aids, which has the potential to increase students' vocabulary engagement and retention. However, the effectiveness of this method for vocabulary acquisition at MTsN 2 Ponorogo has not been thoroughly investigated.

With the phenomenon that I encountered, I took the research title "The effectiveness of jigsaw learning technique using picture cards for improving student vocabulary mastery at MTsN 2 Ponorogo".

C. Limitation of the Study

To avoid deviation from the discussion, this research focuses on several problems identified as follows:

1. The research subjects were class VIII (Bilingual) students at MTsN 2 Ponorogo for the 2023/2024 academic year.

2. The Effect of Using Jigsaw Learning Strategies with Picture Cards on Student Vocabulary in VIII (Bilingual) students at MTsN 2 Ponorogo for the 2023/2024 academic year.

3. The researcher wants to limit his abilities to picture cards only.

D. Statement Of The Problem

"Is there a significant difference in vocabulary comprehension between students who are taught using the Jigsaw technique with picture cards and those who are not?"

E. Objectives of the Study

The purpose of this study was to determine significant differences in vocabulary mastery between students who were taught using the jigsaw learning technique using picture cards and those who did not.

F. Significance of the Study

There are many factors that can be studied in this study. However, considering the wide scope and limited time and resources, it is necessary

to take action to take action. The focus of this study is on the Effectiveness of Jigsaw Learning Techniques using Picture Card to Improve Students' Vocabulary Mastery at MTsN 2 Ponorogo in the 2023/2024 Academic Year.

It is hoped that the results of this study can contribute knowledge to the development of the learning process, especially in improving English vocabulary mastery.

There are three subjects who are expected to receive useful contributions from this research, namely:

1. **For teachers**

   It is hoped that this can provide a useful contribution for teachers to help them in teaching their students, especially in developing students' knowledge in vocabulary mastery. This is especially true for English teachers at MTs Negeri 2 Ponorogo in improving their teaching skills using the jigsaw method using picture card media. It can also motivate English teachers to become professional teachers who are creative and innovative in teaching using interesting strategies.

2. **For students**

   It is hoped that it will be useful for students, especially eighth grade students at MTs Negeri 2 Ponorogo for the 2023/2024 academic year in improving their ability to master English vocabulary. This makes their learning more active and enjoyable. Apart from that, students will be better able to improve their vocabulary mastery in learning English.

3. **For readers**

It is hoped that it will be useful for readers, especially students of the English Department of IAIN Ponorogo as a reference for using related methods and media in mastering vocabulary. So, they can be successful in the reading part.

G. Organization of the Thesis

The author wrote this research in five chapters that are related to each other. The organization of this thesis is :

Chapter 1 presents an overview and becomes the basis for thinking in writing the thesis. It contains the background of the research, limitations and formulation of the problem, objectives and meaning of the research, and the organizational structure of the thesis.

Chapter 2. The literature review covers the mastery and understanding of cooperative learning, the principles of cooperative learning, its elements, the role of teachers, jigsaw techniques, steps in implementing jigsaw techniques, and the use of jigsaw techniques with picture card media for vocabulary mastery. In addition, this chapter also presents the results of previous research, theoretical frameworks, and hypotheses.

Chapter 3. This chapter contains the research methodology, which includes research design, population, sample, instruments for data collection, data collection methods, and data analysis techniques.

Chapter 4. Research Result Standards, include the location and time of research implementation, data description, data analysis, and discussion.

Chapter 5. Conclusion. Contains conclusions and suggestions.

CHAPTER II

THEORITICAL BACKGROUND

A. Theoretical Background

1. Cooperative Learning

a. Definition of Cooperative Learning

A conducive classroom can have a good effect on communication between fellow students and with the teacher during learning activities. communication is used to exchange information to find goals and answers to problems found in learning. The teacher is someone who helps students in the learning and teaching process. The teacher has an important position in creating a classroom atmosphere. the teacher becomes the mediator and controller of the class.[13]

In order to create a conducive atmosphere, teachers can apply learning techniques that can support student learning activities. One of the learning techniques or methods that teachers can use is cooperative learning. Robert Slavin is a famous figure who argues about cooperative learning, namely in learning activities, one of the things that needs to be emphasized is the importance of cooperation between students in groups to collect and find information. Not only that, they will be led to take responsibility and help each other to find a common goal. This condition can provide more effective student learning results when compared to

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[13] Usman, dkk. *Cooperative Learning & Komunikasi Interpersonal.* Cet I, November 2019. Pare Pare, Sulawesi Selatan, hal 37

how students learn individually. The purpose of cooperative learning is to improve academic achievement and social interaction in students.[14]

Scientists have provided definitions of cooperative learning (also known as collaborative learning) in various versions. according to Artz and Newman the definition of cooperative learning is small groups of learners working together as a team to solve problems, completing tasks, or a achieved common goal.[15]

b. Types of Cooperative Learning

There are several types of cooperative learning that can build student learning activities by forming small groups where each group will have a positive relationship. The following are the types of cooperative learning supported by Robert Slavin, namely :[16]

1) Students Team Achievement Division (STAD)

STAD is one of the simplest cooperative learning methods, but widely used. In this method, students are divided into small random groups and each member has a role to help each other understand the subject matter. After that, students will be tested individually, but the score will affect their group's score. The group

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14 Robert E. Slavin, *Cooperative Learning: Theory, Research, and Practice* (Boston:Allyn & Bacon,1995)

15 Roger T. Johnson & David W. Johnson, *Cooperative Learning at the University of Minnesota*. 2003. University of Nebraska-Lincoln, Linclon, NE 68583-0723; 402-427-5480

16 Andi Sulistio & Nik Haryanti, *Model Pembelajaran Kooperatif (Cooperative Learning Model).* Cet I, 2022. Eureka Media Aksara, April 2022 Anggota IKAPI Jawa Tengah No. 225/Jte/2021

that achieves the highest score will receive an award, as motivation in learning.[17]

2) Jigsaw

In the jigsaw method, students are divided into small groups where all members of the group are responsible for learning and understanding a particular part of the subject matter. After that, they become "experts" in that part and then provide information about the material that has been learned to other groups. Thus, each student acts as a teacher (tutor) of the material to the others, and the success of the group depends on the contribution given by each member of the group.[18]

3) Group Investigation (GI)

The Group Investigation learning method is a learning method that prioritizes student contributions and activities to understand the subject matter individually which will previously be studied through the topics that have been provided and selected. Students will conduct investigations and then present the results of the discussion. This will provide an opportunity for students to deepen their thinking on the material. Analyzing groups provides an opportunity for students to express opinions, discuss and analyze the

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[17]Innayah Wulandari. M*odel Pembelajaran Kooperatif Tipe STAD (Student Teams Achievement Division) dalam Pembelajaran MI*. Journal Papeda: Vol 4, No 1, Januari 2022. Institut Agama Islam Negeri Kudus, Indonesia

[18]Robert E. Slavin, *Cooperative Learning: Theory, Research, and Practice* (Boston:Allyn & Bacon,1995)

truth of the tasks they have made by asking questions or providing ideas they have.

4) Team Game Tournament (TGT)

This learning model is similar to STAD, the difference is that the elements of competition in TGT are more pronounced through game tournaments. Students will learn and work together in their groups, then compete in academic games against other groups. Individual scores will contribute to winning the tournament in their group.

5) CIRC (Cooperative Integrated Reading and Composition)

CIRC is a learning method whose main function is used to teach reading and writing skills. Students work in groups to read texts, summarize information, discuss, and write essays or reports. CIRC aims to integrate reading and writing skills in a cooperative learning context.

6) Learning Together

In this type of learning, students work together in small groups to complete tasks and solve problems. The main goal is on cooperation and problem solving, where the success of the group is measured based on the results of the group's work itself, not just individual contributions.

The researcher chose the Jigsaw technique as the basis for the research because this technique aims to encourage active involvement of students in the learning process with their groups, thus providing positive

impacts both individually and in groups. In addition, this technique is also expected to improve interaction and communication between students.

2. **Jigsaw Learning Technique**

a. **Definition of Jigsaw Learning Technique**

Cooperative learning or group work methods involve various activities in the learning process. One form of cooperative learning activity is the jigsaw technique.[19] In this lesson, students are given the opportunity to work together with their friends in discussing the topic being studied. Nevertheless, the teacher still supervises so that the discussion remains focused on relevant material and the learning atmosphere is conducive in accordance with the directions given.

In terms of etymology, Jigsaw comes from the English word jigsaw and there are also those who call it *Fuzzle*, which is a puzzle that arranges pieces of a picture. This jigsaw model of cooperative learning also takes the pattern of how a saw works, namely students carry out learning activities by working together with other students to achieve a common goal.

According to Robert Slavin, Jigsaw learning technique is a learning technique that focuses on student collaboration and responsibility in learning activities both individually and in groups. Jigsaw learning was developed with the aim of increasing social

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[19] Agus Kusnandar, Umar Al Ikmal, e-journal : *Improving Students' Vocabulary Mastery Using Jigsaw Technique At Eight Grade Students*, Bale Bandung University

interaction between students and encouraging the active involvement of each individual in the learning process. In this method, students will be divided into several small groups, then each group member is assigned to study a certain part of the larger material. After that, they act as "experts" in that section and teach it to other group members.[20]

Jigsaw is a cooperative learning method that can overcome this problem. Jigsaws include procedures in which students share the information they have gathered with their group mates and with other groups in the class.[21] Students are asked about all topics and quiz scores are averaged to form a team score. So, this activity requires cooperation and cohesiveness between students in one team in gathering information to complete a job.

b. **Principles of Using Jigsaw Technique**

The main principles of the jigsaw learning technique according to Robert Slavin are as follows:[22]

1) Responsibility

Each student will be given responsibility to study and understand the material that has been given to them. This

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[20] Robert E. Slavin, *Cooperative Learning: Theory, Research, and Practice* (Boston: Allyn & Bacon, 1995)

[21] Robert E.Slavin, e-Book : *Cooperative Learning : Teori, Riset dan Praktik*, Cet.XV (Bandung:2015)

[22] Robert E. Slavin, *Cooperative Learning: Theory, Research, and Practice* (Boston: Allyn & Bacon, 1995)

encourages individual involvement in the learning process, because each student is a source of information needed by the group.

2) Interaction and Collaboration

Students do not only learn for individual needs, but also to learn together with other group members by understanding the material they have mastered. This will encourage effective communication and collaboration between group members, which strengthens learning.

3) Individual and Group Responsibility

In the Jigsaw technique, the success of the group depends heavily on the contribution of each individual. Slavin emphasizes that cooperative learning such as Jigsaw increases students' sense of responsibility, both individually and in groups, because each member has an important role in the success of the group.

4) Improved Learning Outcomes.

Slavin's research shows that Jigsaw learning improves student learning outcomes compared to traditional learning. Students who actively participate and teach each other material tend to have better understanding and higher long-term retention.

5) Building Social Skills.

Jigsaw learning also helps develop students' social skills, such as communication, cooperation, negotiation, and conflict resolution. By working in heterogeneous groups, students learn to appreciate differences and build positive social relationships.

c. **Benefit of Using Jigsaw Technique**

According to Robert Slavin, the Jigsaw learning technique has a number of significant benefits, both academically and socially. Here are some of the main benefits of the Jigsaw technique according to Slavin:[23]

1) Improved Academic Results. The jigsaw learning technique can increase students' awareness of how important it is to understand the material that needs to be learned because later the material will be taught to fellow group members.

2) This teaching process increases in-depth understanding and long-term retention of the material being studied. In group activities, this learning technique is able to develop social skills in students because in it students will be required to work together in their groups, communicate effectively, and be able to appreciate the role of each member in the group. Students will also learn how to handle differences of opinion, negotiate, and solve problems together.

3) Increase Motivation and Involvement in collaboration. Each student has an important responsibility for the success of the group. This can build motivation in students to increase awareness in learning and understanding the material, because indirectly they will feel personally involved in the achievement of the group.

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[23] Robert E. Slavin, *Cooperative Learning: Theory, Research, and Practice* (Boston: Allyn & Bacon, 1995)

4) Reduce Unhealthy Competition. This Jigsaw technique encourages collaboration rather than competition. Because each group member has a unique piece of the material, students rely on each other to achieve success together, which reduces the tendency to compete individually.

5) Increases Tolerance and Cooperation. In Jigsaw, students work in heterogeneous groups, often with different backgrounds and abilities. This helps to increase tolerance among students and encourages cooperation in a more inclusive learning environment.

6) Increases Self-Esteem. Because each student becomes an "expert" in a particular piece of the material and is responsible for teaching it to the group, they feel valued and contribute significantly. This helps to increase their self-esteem, both academically and socially.

So the elements above encourage the creation of a learning community where learning outcomes are obtained from collaboration with other people in the form of individual sharing, between groups.

d. **Advantages and disadvantages of using the jigsaw technique**

In selecting and using methods and techniques in learning, of course. Each teaching method has different goals from one method to another. So Walgito put forward several goals among others:[24]

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[24] Bimo Walgito, *Pengantar Psikologi Umum*, (Yogyakarta, Andi Offset, 2002), hlm. 114

1) Getting children used to socializing with their friends, how children express and accept opinions from their friends.

2) Studying in groups also helps realize educational and teaching goals.

3) Learn to live together so that later you won't be awkward in the wider society.

4) Fostering a sense of mutual cooperation which is the nature of the Indonesian nation.

Apart from the objectives of group learning mentioned above, group learning also has its own advantages and disadvantages that is:[25]

1) Advantages of group work

a) Learning outcomes are more perfect when compared to individual learning.

b) Opinions expressed collectively are more convincing and stronger than individual opinions.

c) Cooperation carried out by students can bind ties of unity, shared responsibility and a sense of belonging and eliminate egoism.[26]

2) The weaknesses of group work are:

a) This method requires more complicated preparations than other methods so it requires higher dedication on the part of educators.

b) If there is negative competition, the results of work and assignments will be worse.

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[25] Bimo Walgito, *Pengantar Psikologi Umum*, (Yogyakarta, Andi Offset, 2002), hlm. 114
[26] Basirudin Usman, *Metodologi Pembelajaran Agama Islam*, (Jakarta: Ciputat Press, 2002), hlm. 15

c) Students who are lazy get the opportunity to remain passive in the group and will most likely influence other members.[27]

So the advantage of applying techniques in learning is to increase collaboration and good communication skills among students, while the weakness is that there is still a selfish attitude due to competition and an attitude of dependence on each other.

3. **Vocabulary**

a. **Definition of Vocabulary**

In the application of Slavin's cooperative learning theory, vocabulary is not only learned individually but also reinforced through discussion and interaction in groups. In the context of cooperative learning theory developed by Slavin, vocabulary can be considered as an important part of language learning that can be reinforced through cooperative techniques.[28]

Svenja Adolps and Nopert Scmitt said vocabulary is an important part of language learning and the more vocabulary a student has, the easier it is to achieve his or her goals.[29] According to Hatch and Brown's theory, vocabulary refers to a set of words associated with a particular language or words that might be used by speakers of that language.

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[27] Zuhairini, Dkk, *"Metodik Khusus Pendidikan Agama",* (Surabaya: Usaha Nasional, 1983), hlm. 89

[28] Robert E. Slavin, *Cooperative Learning: Theory, Research, and Practice* (Boston: Allyn & Bacon, 1995)

[29] Paul Bogaards, Batia Laufer. *Vocabulary in Second Language (Amserdam/Philadelphia*: John Benjamins Publishing Company, 2004), 40

Vocabulary is a crucial element in a language and the foundation of learning a language, especially English. Vocabulary learning must be accompanied by mastery of its basics, making it easier for students to use it, both orally and in writing.[30]

Indirect vocabulary teaching can be done gradually in understanding it is done at certain times. This teaching support is less supportive in providing specific direction on vocabulary before or after reading. When engaged in indirect teaching, a student can read a text, discuss it, relate it to prior learning experiences, and even identify unfamiliar words, all without direct guidance on which vocabulary to focus on.

b. **Types of Vocabulary**

I. S. P. Nation believes that vocabulary can be divided into four groups, namely:[31]

1) Frequently occurring words (unmarked in the text), academic words (bolded), and technical and rarely used words (italicized). Words that appear repeatedly in the sample text are not given special markings, and function words are also included. Frequently used words include many words that contain the main meaning.

2) Academic words This text is taken from an academic textbook and contains many terms that are often used in various types of

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[30] Hatch, E. V., and Brown, C. *Vocabulary, Semantics, and Language Education* (Cambridge University: United States of America: 1995), 24

[31] I. S. P. Nasution. *Learning Vocabulary in Another Language* (Cambridge: Cambridge University Press, 2001), 11-12

academic writing. This small collection of words is essential for those who use English for academic purposes.

3) Technical terms This text contains several terms that are closely related to the topic and field of study of the text. These terms are used quite frequently in this topic, but rarely in other contexts. When we encounter these words, we can immediately identify the topic being discussed.

4) Low-frequency words The fourth group consists of low-frequency words that account for more than 5% of the total words in the academic text.

c. **Definition of Vocabulary Mastery**

A communication that is established in students will definitely require vocabulary. the function and structure of vocabulary can be used to convey ideas in communicating to someone. In addition, the less understanding of vocabulary, the less understanding can be obtained about other people's ideas in communication..[32]

Vocabulary is a group of words in a particular language. but based on their theory, Hatch and Brown define vocabulary as a list or collection of a particular language or a list of a group of words that may be used by a speaker. It is the core of a language. Based on this definition, it can be concluded that vocabulary is a stock of words in a

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[32] Batia Laufer & Paul Nation, *"A Vocabulary-Size Test of Controlled Productive Ability"*, Victoria (University of Wellington, 1999), 33

language complete with their meanings used by individuals or groups of people, both in oral and written communication.[33]

Nation states that vocabulary mastery includes three main aspects: (1) form which includes pronunciation, writing, and morphological structure of words, (2) meaning: Basic meaning, connotation, and relationships between words, (3) Use: How words are used in context, including the frequency of use and collocation. So, it can be concluded that vocabulary mastery is the ability that someone has in the process of understanding, remembering, and using words correctly when communicating and can distinguish a context in conversation, both in language, orally, and in writing. Good vocabulary mastery involves various aspects such as recognizing word forms, meanings, and their proper use according to context.[34]

Slavin argues that cooperation between students in small groups can improve interaction and more effective learning. In vocabulary mastery, students will be assigned to work together in groups to learn, provide information, and reinforce the use of new vocabulary. By communicating, students indirectly not only learn the meaning of vocabulary, but will also understand how to use it in different contexts. In this context, it can emphasize the importance of cooperation, social interaction, and responsibility both individually and in groups in improving students' understanding and memory of vocabulary. The use

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[33] Evelyn Hatch and Cheryl Brown, *Vocabulary, Semantics, and Language Education* (Cambridge: Cambridge University Press, 1995).

[34] I. S. Nation, *Learning Vocabulary in Another Language* (Cambridge: Cambridge University Press, 2001)

of visual media such as picture cards can increase the effectiveness of vocabulary learning, especially when used in jigsaw learning groups.[35]

d. Concept of Teaching Vocabulary Mastery

English is a foreign language that continues to grow and is important to learn. Therefore, language learning is necessary for students to understand themselves, their culture, as well as other cultures. In addition, language learning helps students in expressing their ideas, thoughts and feelings.

Vocabulary mastery plays a very important role in language learning. Therefore, teachers need to pay more attention to teaching and learning English vocabulary to students. Vocabulary teaching directly helps students in the four main aspects of English learning, namely reading, writing, speaking and listening. In the learning process, students will be given the freedom to use the vocabulary they have already mastered, and they will also be introduced to new vocabulary. The introduction of these new vocabulary words will be done by the teacher as well as other students who have used these words in classroom learning activities.[36]

This not only means that teachers teach so that they can explain and students understand, but also so that teachers know what needs to be improved. In vocabulary teaching, the teacher should not only focus on

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[35] Robert E. Slavin, *Cooperative Learning: Theory, Research, and Practice* (Boston: Allyn & Bacon, 1995)

[36] Zulfikri Betyar Rasuan , e-journal: *Teaching Vocabulary Mastery by Using Systeamtic Game,* (IAIN Syaikh Abdurrahman Siddik Bangka Belitung : 2017)

explaining so that students understand, but should also understand the aspects that need to be improved. In other words, the teacher must know what to teach so that students can understand it easily. According to Thornbury, there are five factors related to vocabulary teaching that teachers should pay attention to:[37]

1) The ability level of the students (whether they are beginners, intermediate or advanced). This indicates that the teacher needs to present materials that are appropriate for that ability level.

2) Students.

3) The students may be familiar with some of the words (even if they are not in their active vocabulary, they may have heard them before).

4) The difficulty level of the question, for example, whether the question conveys abstract rather than concrete meaning, or whether the question is difficult to pronounce.

5) Their teaching ability, for example, whether they can explain or demonstrate the material easily.

6) Whether the material taught is intended for production (in speaking and writing) or just for familiarization (in listening and reading).

In conclusion, from the above, it can be understood that in vocabulary teaching, the learning flow should focus on the fact that learning a language involves a large amount of vocabulary, which makes

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[37] Scott Thornbury, *How to teach Vocabulary*, (London : Longman, 2002), p. 75-76

it difficult for students to memorize many words. Vocabulary teaching requires appropriate techniques to be successful. By applying appropriate techniques, the learning process will be effective.

e. **Purpose of Vocabulary Mastery**

In learning a language, one of the things needed is words. Language is closely related to words, because words are one of the basics in learning a language. In the need for words the main thing that is important is about vocabulary knowledge. Language proficiency involves more than just knowing many words or grammar rules; it also requires the ability to use that knowledge effectively for different communicative purposes.[38] Students can build impressive vocabulary knowledge as shown in high test scores.

One part of the basic learning that students must learn in English is increasing understanding of vocabulary. Learning this vocabulary can be done starting from looking for vocabulary from easy to difficult level. The purpose of vocabulary mastery is basically to improve an individual's ability to understand, select, and use words effectively in various communication contexts, both orally and in writing, so as to improve overall language skills.

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[38] Read John, *Vocabulary Assessment* (Cambridge United Press, Cambridge; 2000), pg 6

The following is the purpose of vocabulary mastery according to Paul Nasution:[39]

1) Improved Reading Comprehension. Vocabulary mastery can improve students' understanding when reading a text, because in the text students will encounter and pay attention to words in the form of reading, so students' reading skills will improve because students can analyse the text with vocabulary understanding.

2) Speaking Ability. By mastering a larger vocabulary, individuals can express ideas more clearly and effectively in verbal communication. A diverse vocabulary helps in constructing more complex sentences and nuances in speaking.

3) Listening Ability. A mastered vocabulary makes it easier for one to understand everyday speech and conversation. This is important in oral communication and to follow conversations well.

4) Writing Skills. A good vocabulary supports more varied and precise writing skills. With a wide vocabulary, writers can choose more appropriate words to convey messages accurately.

4. The Concept of Picture Card

a. Definition of Picture Card

Learning media is a tool used in learning. Learning media has an important role in the learning process, namely to divert students'

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[39] Nation, P. (2013). *Learning Vocabulary in Another Language*. Cambridge University Press

attention to focus on learning and as a tool that can convey certain information on the subject. By using creative and innovative media, teachers can build an interesting learning atmosphere for students.Picture card media is a card-shaped image media that contains images and vocabulary so that it can facilitate students in stringing words into sentences so that they become an essay.[40]

According to Robert Slavin, an education expert, picture cards are a tool used in learning methods to help students understand and remember information in a visual way. In a learning context, picture cards are typically used to introduce new concepts, clarify abstract ideas, or reinforce student recall through easily recognizable visual representations. learning media such as picture cards are used to support a variety of learning techniques and increase student engagement and understanding.

Picture cards are one of the tools in the teaching and learning process that can attract students' attention and encourage them to be actively involved in learning. According to Asra, picture card media is included in the category of visual media (such as photos, images, and posters).[41] The picture cards used are created by the teacher to align with English lessons on the simple present tense, focusing on sentences about

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[40] Miftahul Jannah et,al. *"Penggunaan Media Kartu Bergambar dalam Keterampilan Menulis Karangan Sederhana Bahasa Jerman Siswa Kelas XI IPS SMA Negeri 1 Segeri Kabupaten Pangkep"* Fakultas Bahasa dan Sastra, Universitas Negeri Makassar, 13-14
[41] Hamzah Pagarra,et.al. *Media Pembelajaran* (Badan Penerbit UNM; Gedung Perpustakaan Lt. 1 Kampus UNM Gunungsar, 2022), 2

daily habits that correspond to the images. This allows students to describe and formulate sentences related to the pictures they receive.

b. **Purpose of Using Picture Card**

Picture card media is one of the visual media that can express facts or ideas through the presentation of words, phrases, numbers or symbols. Picture cards are a commonly used media with the following objectives:[42]

1) To make the material taught more focused. Students can easily understand the material and learning is more structured.

2) To improve students' understanding of the subject matter. The understanding in question is how students can process the material quickly and keep it in memory in their minds.

3) To improve students' analytical skills. Students' analytical ability in breaking down material into parts and connecting one part with another so that they can clearly understand the material as a whole.

4) To develop students' positive behavior. Positive behavior of students to think critically in analyzing and understanding the material presented by the teacher.

c. **Advantages and Disadvantages of Using Picture Card**

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[42] Faisal Anwar,et.al. *Pengembangan Media Pembelajaran "Telaah Perspektif Pada Era Society 5.0"* (CV. Tohar Media: JL. Rappocini Raya Lr 11 No 13 Makassar, 2022), 81-85

Picture cards are a learning tool that can be used by teachers to influence students' enthusiasm for learning. If students are motivated, they will show an attitude of active participation and intense learning during the teaching-learning process. According to Robert E. Slavin, the use of picture cards in learning provides several significant conveniences, especially in the context of cooperative learning and cognitive development. Some of the conveniences identified by Slavin include:[43]

1) Facilitates Concept Understanding

   Picture cards can help students to understand the concept of learning material that is difficult to be easier because the picture contains a clearer context.

2) Facilitates Cooperative Learning

   In cooperative learning methods, especially the jigsaw technique, picture cards can be used to support students in group discussions. These cards help students exchange ideas and information, as pictures can be an effective tool for conversation and collaboration among students.

3) Attracting Students' Attention

   The use of picture cards shows a new innovation and creativity that is displayed to attract students' attention compared

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[43] Slavin, R. E. (1995). *Cooperative Learning: Theory, Research, and Practice*. Allyn & Bacon.

to text, thus increasing learning motivation and active engagement in the learning process.

4) Accelerates Learning for Students with Visual Learning Styles.

For students with a visual learning style, picture cards are very helpful as they can more easily process information presented visually compared to text or audio.

According to Gerlach and Ely, there are advantages of the pictures as follows:[44]

1) Images are not costly and can be found easily.

2) Images give a common understanding to every group.

3) Visual details can make something to be learned from the subject that has not been done before.

4) Images can help reduce and renovate errors.

5) Images provide motivation to study, read, and learn something in more detail.

6) Visual evidence is an effective tool.

7) Images help direct observation and expand responsive judgment.

8) Images are easy to manipulate.

From the explanation above, it can be concluded that pictures have an important role and advantage in the teaching and learning process,

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[44] Jatmiko Jatmiko, Tontowi Jauhari. *"The Effectiveness of Using Picture to Teach Vocabulary at Elementary School"*, Kadiri University , Jalan. Selomamgkleng No. 01, Kediri, Indonesia, 366

which makes students more active, especially in vocabulary learning, so that learning objectives can be achieved.

Although picture cards have many benefits and conveniences, according to Slavin, there are some disadvantages that can be classified in their use in the learning process:[45]

1) Limitations in Conveying Complex Information. this shows that pictures may not always be sufficient to convey more complex information because it still has to be explained in detail.

2) Reducing Abstract Thinking Ability. Excessive use of picture cards can reduce the opportunity for students to exercise broad thinking skills.

3) Visual Dependency. Some students with picture cards may become overly dependent on visual aids, and this can hinder the development of other skills such as reading text without visual support.

4) Less Effective for Students with Different Learning Styles. Picture cards may not provide enough stimulation for students who prefer to learn through verbal discussion or physical activity.

d. Concept of Using Picture Card

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[45] Robert E. Slavin*, Cooperative Learning: Theory, Research, and Practice* (Boston: Allyn & Bacon, 1995)

Picture Cards is an identification game where players must recognize the images on the cards and can compete on a snake path to complete them. According to Lewis and Bedson, Picture Identity Card games are usually played by two people, but can also be done in groups. The concept of using picture card media is as follows:[46]

a) First, students will be formed into several groups randomly, each group containing 5-6 students,

b) second, each group will be given 30 picture cards for each group that have been prepared by the researcher. The picture cards contain random vocabulary, namely nouns, verbs and properties,

c) third, students will be given time to group the picture cards according to their word groups and write the meaning of the word (the meaning means translated from Indonesian or English),

d) fourth, students are given 10-15 minutes to do this,

e) fifth, after completion the picture cards will be read by each group member,

f) sixth, the researcher will correct together with the students and re-explain the types of vocabulary,

g) seventh, students present the results of the picture card discussion on cardboard provided by the researcher regarding vocabulary and based on the word type column.

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[46] Gordon Lewis and Guther Bedson, *Games for Children,* New York, Oxford University Press, p. 32

B. **Previous Research Findings**

This Research requires several previous studies as theoretical considerations:

First, based on research conducted by Fatihan Muleng, in her thesis on "The Influence of Using Jigsaw Technique Towards Students' Vocabulary Mastery at the Second Semester of the Eighth Grade of SMPN 24 Bandar Lampung in the Academic Year of 2017/2018". This study is a quantitative research project. The average score of students before receiving treatment was 56.8%. Data collection in this study, this study uses pre-test and post-test instruments, especially vocabulary tests. After conducting the post-test, the researcher used SPSS to perform calculations using an independent sample t-test. Furthermore, the analysis of the data revealed that the value of Sig. (2-tailed) for the same variance was 0.000, which was less than $\alpha = 0.05$. This indicates that H_0 is rejected while H_a is accepted. Therefore, it can be concluded that the jigsaw technique positively affects students' understanding mastery. This study is similar to previous research in that it employs card media and follows a quantitative approach. However, there are also differences between this research and those conducted by other researchers. This research only used a vocabulary test instrument, whereas the research conducted by this researcher used a vocabulary test and practice questions.

The second is to compare it with Oktavianita's thesis entitled "The Effectiveness of Using Picture in Vocabulary Learning in Seventh-Grade Junior High School Students", this thesis examines the students' lack of interest in learning English resulting in their weak knowledge of English.

Both quantitative and qualitative methods were utilized in this study. Sampling was conducted using a random sampling technique. The results indicate that students' skills improved, as evidenced by a 17.5% difference in the mean score between the pre-test and post-test data. Although the results were not significant, it could be concluded that using pictures to teach English vocabulary could help students This thesis does not use learning techniques while the researcher uses the jigsaw technique and uses quantitative and qualitative methods, while the researcher uses quantitative methods with quasi experiments.

Next, the third is a thesis from Shinta Agustina Novianti Entitled "The Effectiveness of Make a Match Technique in Teaching Vocabulary at the Eleventh Grade Students of Ma Muhammadiyah 1 Ponorogo In Academic Year 2019/2020". This study employs a quantitative approach with a quasi-experimental design. Two classes were observed for this research: the experimental class and the control class. The sampling technique uses simple random sampling. Data collection techniques use tests and documentation. The t-test formula was used to analyze the data and determine if the Make a Match technique for teaching vocabulary was more effective than not using it. The data analysis results indicate that the Make a Match technique is effective for teaching vocabulary to eleventh-grade students at MA Muhammadiyah 1 Ponorogo. The distinction between this research and previous studies lies in the techniques and learning media used, while the methods, samples, and classes remain similar.

C. Theoretical Framework

Vocabulary is essential to learning and disciplined thinking. The description of academic vocabulary focuses on two different word categories with technical terms, content specific, and general academic vocabulary. According to Robert Slavin, vocabulary is an important component in language learning and literacy development. A good understanding of vocabulary greatly influences the ability to read and understand texts. Strong vocabulary mastery helps students understand more complex readings, think critically, and communicate effectively.[47] In learning a foreign language including English, one must be able to learn vocabulary. Good vocabulary mastery will make it easier for people to communicate and express ideas. If students have difficulty in speaking, it is certain that their vocabulary is lacking. English is less used in everyday life, because this language is not a mother tongue. Untuk mengatasi kesulitan dalam belajar bahasa Inggris, dibutuhkan metode pembelajaran dan pengajaran yang baru, kreatif, dan inovatif agar proses belajar menjadi lebih mudah dan menarik. Teknik-teknik dalam pengajaran kosakata bahasa Inggris sangatlah penting. Salah satu teknik yang efektif dan dapat meningkatkan kosakata siswa adalah penggunaan teknik jigsaw.

In this study, the researcher plans to apply the jigsaw technique to improve English vocabulary, because this technique is a cooperative approach that makes students active and motivated in classroom discussion

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[47] Slavin, Robert E. *Educational Psychology: Theory and Practice*. 10th ed., Pearson Education, 2012.

activities. This technique provides opportunities for students to discuss and collaborate with their peers. Related to the improvement of students' vocabulary in English learning, the researcher wants to focus on the topic at MTs Negeri 2 Ponorogo. Observations made by the researcher showed that students faced some difficulties in learning English, especially in terms of vocabulary. Based on the difficulties that have been explained, the researcher wants to apply a new method to improve vocabulary, namely by using the jigsaw technique and picture card media. With this aim, it is expected that the vocabulary of students who are learning English can increase. Through this technique, it is expected that students' vocabulary will increase gradually, making it easier for them to learn English, because they have more vocabulary to speak and express their ideas in English.

The framework is a conceptual model that describes the relationship between theory and factors that have been identified as important problems.[48] Based on the theoretical basis and literature review that has been described, the framework in this study is as follows:

- Independent Variable (X) : Jigsaw Learning Technique

- Dependent Variable (Y): Students' vocabulary mastery

The following is the theoretical framework of this research:

Jigsaw Technique		Increase of Vocabulary
	Vocabulary Mastery	

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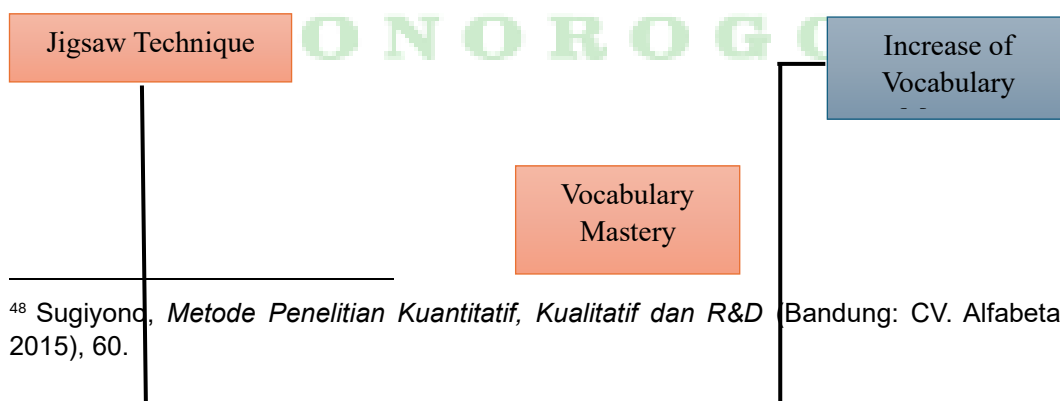
[48] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif dan R&D* (Bandung: CV. Alfabeta, 2015), 60.

Students		Increase Leaning Score	
		Effectiveeness of the Learning	
Picture Cards			
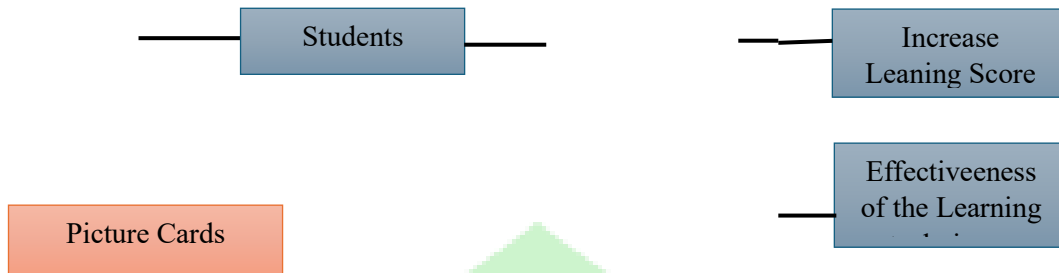
Gambar 1.1 Kerangka Berpikir

D. Hypothesis

A hypothesis is a proposition whose validity will be tested, or is a temporary answer to the researcher's question regarding the relationship between variables.[49] Based on this understanding, the hypothesis of this research is as follows:

- H_0: The technique of the Jigsaw using picture card does not have a significant effect on increasing student vocabulary mastery in English learning for class VIII students at MTs Negeri 2 Ponorogo.

- HA: The technique of the Jigsaw using picture card has a significant influence on increasing student vocabulary mastery in English learning for class VIII students at MTs Negeri 2 Ponorogo.

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[49] Priyono, *Metode Penelitian Kuantitatif* (Sidoarjo: Zifatama Publishing, 2016), 66.

BAB III

RESEARCH METHOD

A. **Research Design**

Research is a method that will be carried out by an academic party to find a solution and discover new things in existing problems in a systematic way to expand or develop knowledge or to test the truth so that the desired goal can be achieved.[50] Research that uses a quantitative approach involves investigating social problems by testing theories that include variables. These variables were measured numerically and analyzed using statistical methods to assess the accuracy of the theoretical predictive generalization.[51]

Quantitative research according to Sugiyono is a research method used to research on a particular population or sample. Sampling techniques are randomized, and the results of the data obtained usually use research instruments in the form of questionnaires or measurable observations. The data collected is then analyzed statistically to test the hypothesis that has been formulated. quantitative research can be characterized by the presence of numbers that are the basis for decision making. This research has an

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[50] Muh. Yani Balaka. *Metode Penelitian Kuantitatif* (Bandung: Widina Bhakti Persada Bandung, 2022), 1

[51] Karimuddin Abdullah, et.al*, Metodologi Penelitian Kuantitatif* (Pidie: Yayasan Penerbit Muhammad Zaini, 2021), 2

objective nature because the results obtained are the result of measurements that can be repeated and statistically tested for validity.[52]

The type of research method chosen in this study is experimental research (quasi-experiment). Quasi-experiment research is a form of research that does not have full control over certain variables, especially randomization. In this study, researchers still provide a treatment to different groups, but the division of groups is not done randomly.[53] Sugiyono argues that quasi-experiments are often used in educational or social research because researchers cannot always control all variables, especially in complex social contexts. The main purpose of this research is to determine the cause-and-effect relationship between variables. Experimental research is a type of quantitative research where researchers conduct deliberate experiments with a systematic flow and then observe all the consequences of a change.[54]

Group	Pre-Test	Treatment	Post-Test
R_1	O_1	Using Jigsaw learning techniques	O_2
R_2	O_3	Does not use the Jigsaw learning technique	O_4

Notes :

R_1 = Experimental Group Class R_2 = Control group class

O_1 = Experimental class *Pre-Test* O_3 = Control class *Post-Test*

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[52] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*, (Bandung: Alfabeta, 2016), hlm. 14

[53] Rukminingsih,M.Pd, et.al,. *Metode Penelitian Pendidikan "Penelitian Kuantitatif, Penelitian Kualitatif*, Penelitian Tindakan Kelas" (Jombang: Erhaka Utama, 2020), 38

[54] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*, (Bandung: Alfabeta, 2016), hlm. 14

O_2 = Experimental class *Pre-Test* O_4 = Control class *Post-Test*

B. **Research Setting**

This research took place on class VIII students at MTsN 2 Ponorogo in the 2023/2024 academic year. It is located on Jalan Ki Ageng Mirah 79 Ponorogo. The reason the researcher chose this school was to find out and understand the learning strategies implemented by teachers in English lessons in eighth grade at MTsN 2 Ponorogo. In this case the teacher applies the Jigsaw method in this class. So students can enjoy it more optimally.

C. **Data Research Population**

Population

The population refers to a general area that encompasses objects or subjects with specific qualities and characteristics defined by researchers for study and subsequent conclusions. Population does not only consist of humans, but can also include other natural objects. In addition, population does not only refer to the number of objects or subjects that exist, but also includes all the characteristics possessed by these objects or subjects.[55] Population is a group of individuals who have clear qualities and characteristics. Population refers to a collection of measurements about something that will be used to draw conclusions, not just people or objects.[56]

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[55] Dr. Garalka, Darmanah, SE, MM. *Metodologi Penelitian* (Lampung Selatan: CV. Hira Tech, 2019), 48

[56] Dameria Sinaga. *Buku Ajar Statistika Dasar* (Jakarta Timur: UKI Press, 2021), 4

Population is a generalization area that includes objects or subjects with certain qualities and characteristics determined by researchers to be analyzed and then concluded. In this study, the population studied was VIII grade bilingual students at MTs Negeri 2 Ponorogo.

Sample

Sample is the portion of that population's total number and characteristics. If the population is large and the researchers are unable to learn all that exists in the population due to factors such as time, money, and energy constraints, they can use sample data that has been collected from the more alert population.[57] In this study the sample was less than 100 people. So the sample in this study was eighth grade students at MTs Negeri 2 Ponorogo.

D. Operational Definition of Research Variables

Hatch and Farhady argue that theoretically a variable can be interpreted as a characteristic that a person has, or objects that have "variations" between one person and another or one object with other objects.[58] Spiegel argues that a variable is a symbol, such as X, Y, H with a degree of error or B, which can hold one of a set of predefined values; that set of values is called the domain of the variable. So a variable is a

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[57] Dr. Garalka, Darmanah, SE, MM. *Metodologi Penelitian* (Lampung Selatan: CV. Hira Tech, 2019), 48

[58] Ir. S. Benny Pasaribu, M.Ec., Ph.D, et al,. *Metodologi Penelitian "Ekonomi dan Bisnis"* (Tangerang, Banten: Media Edu Pustaka, 2022),65

characteristic of an object whose value for each object varies and can be observed or calculated or measured.[59]

There are two variables, namely the independent variable (X) and the dependent variable (Y), in this research they are written as follows :

- Independent Variable (X)   : Jigsaw Learning Technique
- Dependent Variable (Y)   : Students' vocabulary mastery

E. Technique and Instrumen Data Collection Research

Technique Data Collection Research

Data collection techniques in quasi-experimental research are very important to ensure the accuracy and validity of research data, especially in the absence of complete randomization. Sugiyono explained several data collection techniques commonly used in quasi-experimental research, which can help in evaluating the effect of treatment on the dependent variable.[60] in this study, the study used data collection techniques using pre-test and post-test techniques. Pre-test is conducted before treatment to determine the initial condition of the experimental group and control group. The results of the pre-test help researchers to compare conditions before and after treatment. Meanwhile, the post-test is conducted after treatment is given to evaluate changes in the dependent variable. This technique is very commonly used in quasi-experimental research to see the difference in

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[59] Dameria Sinaga. *Buku Ajar Statistika Dasar* (Jakarta Timur: UKI Press, 2021), 17

[60] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*, (Bandung: Alfabeta, 2016), hlm. 132-140.

results between the experimental group (treated) and the control group (without treatment).

Data Collection Research

In quasi-experimental research, the data collection process is conducted to measure the effect of the treatment given to the experimental group. Because this research does not use full randomization, the right data collection method is very important to ensure the validity of the research results. data collection methods that are often used in quasi-experimental research according to Sugiyono are Tests (Pre-test and Post-test), namely in quasi-experimental research, tests are often used to measure changes in the dependent variable before and after treatment is given.[61] The pre-test is carried out before treatment to determine the initial condition, while the post-test is carried out after treatment to see the effect of the treatment. In conclusion, the pre-test is used to measure the condition or initial ability of the subject, while the post-test is used to measure the results after the treatment is given.

F. **Instrumen Data Collection Research**

Data collection instruments are tools used to measure phenomena both natural and social that are being observed. In addition, this instrument is also defined as a tool that assists researchers in collecting data through measurement. This method is applied to obtain objective data needed to

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[61] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*, (Bandung: Alfabeta, 2016), hlm. 116-121.

produce objective research conclusions. The data needed in this study are as follows:

1. Data regarding the application of the Jigsaw Method using picture card media in class VIII English language learning at MTs Negeri 2 Ponorogo.

2. Data regarding Vocabulary Improvement in English language learning for class VIII students at MTs Negeri 2 Ponorogo.

The Jigsaw method uses picture card media (X) and increases of vocabulary in English language learning (Y). The data collection instruments are:

Table 3. 1 Learning Instrument Table using Blueprint

No.	Indicators	Sample Of Questions	Number
1.	To increase mastery of new vocabulary in a text and sentence	From the text above, elephants are...animals that still live on earth.	4, 5, 6, 8, 9, 12
2.	To find types of vocabulary in a text and sentence	These words are classified as adjectives, except...	3, 10, 19
3.	To find the meaning contained in a vocabulary in a text or sentence	The word "between" in the question above means...	7, 11, 14
4.	To find spellings and affixes contained in a text or sentence	Which one is the (heavy)… between My bag or yours?	1, 2, 3, 13, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25

G. Validity and Rehability

Validity

Validity refers to the extent to which a measuring instrument can measure what it is intended to measure.[62] A valid instrument has a high level of validity. Conversely, a less valid instrument shows low validity. An instrument is considered valid if it can measure what should be measured. An instrument is also declared valid if it can produce precise data from the variables studied. The level of validity of an instrument reflects the extent to which the data collected does not deviate from the intended validity picture.

$$r_{xy} = \frac{n\Sigma - (\Sigma x)(\Sigma y)}{\sqrt{\{n\Sigma x^2 + (\Sigma x^2)\}\{n\Sigma y^2 + (\Sigma y^2)\}}}$$

Keterangan:

r_{xy} : Product Moment correlation index number

Σx : the sum of all X values

Σy : the sum of all Y values

Σxy: the number of products between the X value and the Y value

If $r_{xy} \geq r_{tabel}$ then the conclusion is that the questionnaire item is valid. If $r_{xy} < r_{tabel}$, then the conclusion is that the questionnaire item is invalid.[63]

Reliability

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[62] Yofian Siregar, Metode Penelitian Kuantitatif: Dilengkapi dengan Perbandingan Perhitungan Manual & SPSS Edisi Pertama, 46.

[63] Andhita Dessy Wulansari, *Penelitian Pendidikan: Suatu Pendekatan Praktik Dengan Menggunakan SPSS* (Ponorogo: STAIN Po PRESS, 2012), 84.

Reliability refers to the extent to which an instrument can be relied upon as a data collection tool, because the instrument already meets good criteria. A good instrument will not be biased and will not influence respondents to choose certain answers. Reliable and reliable instruments will produce data that is also reliable. If the data truly reflects reality, the results obtained will be consistent even if taken many times. Reliability shows the level of reliability of a tool. In this context, "reliable" means trustworthy. The technique used in this study is the Cronbach Alpha formula, as follows:

$$r_{11} = \left(\frac{k}{k-1}\right)\left(1 - \frac{\sum \sigma_b^2}{\sigma^2 t}\right)$$

Keterangan:

r_{11} : reliabilitas instrumen

k : banyaknya butir pertanyaan atau banyaknya soal

$\sum \sigma_b^2$: jumlah varians butir

$\sigma^2 t$: varians total.

Jika nilai $r_{11} > 0,6$, maka instrumen penelitian dinyatakan reliabel.[64]

H. Data Analysis Technique

1. Normality Test

Normality test is a statistical method that aims to determine whether a group of data follows a normal distribution. This test is conducted to analyze the value of data distribution in a group or variable, based on

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[64] Syofian Siregar, Statistik *Parametrik untuk Penelitian Kuantitatif:Dilengkapi dengan Perhitungan Manual dan Aplikasi SPSS* (Jakarta: PT Bumi Aksara, 2014), 99.

whether the data distribution is normally distributed or not.[65]

In this study, normality testing was carried out using the Kolmogorov-Smirnov (K-S) method. To determine whether the data distribution is normal or not, a null hypothesis (H₀) is made which states that the data is normally distributed and an alternative hypothesis (HA) which states that the data is not normally distributed. The test was conducted using the Kolmogorov-Smirnov non-parametric statistical test. The hypothesis proposed is as follows:

H_0 = Residual data is normally distributed

H_1 = Residual data is not normally distributed

2. **Homogenity Test**

Homogeneity test is a term used to describe the condition of something that is uniform or similar in terms of composition, nature, or characteristics. This term is often used in various fields. This test is used to determine whether the population variance is the same or not. This test is carried out as a prerequisite for conducting an independent sample t-test and Anova analysis.[66] The basic assumption of analysis of variance (ANOVA) is that the population variances are equal. The test of equality of two variances is used to determine whether the distribution of data is homogeneous by comparing two variances. If two or more groups of

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[65] Peny cahaya azwai, muhammadinah, juwita anggraini. *Modul paktikum statistik*. Hlm. 52.

[66] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, dan R&D,* (Bandung: Alfabeta, 2016), hlm. 135.

data have the same variance, then a homogeneity test is not required because the data is considered homogeneous. The homogeneity test can be performed if the data groups follow a normal distribution.

3. **Test**

The pre-test and post-test formulation can be done using the t-test formula.[67] The T-test is used to compare both the pre-testand post-test done by the samples of research.

The formulation of T-test as follows :

$$t_0 = \frac{M_1 - M_2}{SE\ M_1 - M_2}$$

Note :

M_1 = Mean of Variable X (Experimental Class)

M_2 = Mean of Variable Y (Controlled Class)

SE = Standard Error

There are several stages taken to get the calculation of t-test, it can be seen as follow :

a) Determining Mean of Variable X, with formula :

$$M_1 = \frac{\Sigma X}{N_1}$$

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[67] Budi Prasetyo, *Statidtika Untuk Data Penelitian*, (Bandung, PT. Revika Aditama: August 2010), p. 208-209

b) Determining Mean of Variable Y, with formula :

$$M_2 = \frac{\Sigma X}{N_2}$$

c) Determining Standard

$$SD_1 = \sqrt{\frac{\Sigma X_2}{N_1}}$$

d) Determining Standard of Deviation Score Variable Y, with formula :

$$SD_2 = \sqrt{\frac{\Sigma Y_2}{N_2}}$$

e) Determining Standard Error Mean of ariable X, with formula :

$$SE_{M_1} = \frac{SD_1}{\sqrt{N1-1}}$$

f) Determining Standard Error Mean of Variable X, with formula

$$SE_{M_2} = \frac{SD_2}{\sqrt{N_2 - 1}}$$

g) Determining Standard Error of different Mean of Variable X and Mean of Variable Y, with formula :

$$SE_{M_1 - M_2} = \sqrt{SEM_1{}^2 + SEM_2{}^2}$$

h) Determining t_0 with formula:

$$t_0 = \frac{M1 - M2}{SE\ M1 - M2}$$

i) Determining Degrees of Freedom (df) of 5% and 1% with formula:

$$df = (N_1 + N_2) - 2$$

After all the data calculations in the test are complete, it is important to know the effect size of this study, because the effect size results will provide information to researchers about how much influence other variables have in the study. Cohen's effect size provides a way to understand the impact of an intervention or variable more practically and meaningfully, beyond just statistical significance. To find out the effect size of this study, Cohen's theory can be used as follows:[68]

$$\sigma = \frac{(SD_1 + SD_2)}{2}$$

Notes :

σ : pooled standard deviation

SD_1 :Standard deviation of experiment group

SD_2 : Standard deviation of control group

$$d = \frac{M_1 - M_2}{\sigma}$$

d : the effect size

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[68] John W. Creswell, Educational Research: Planning, Conducting, and Ecaluating Quantitative and Qualitative Research – International Edition, (Boston: Pearson, 2002), p.310

M_1 : mean of experiment group

M_2 : mean of control group

σ : pooled standard deviation

After finding the Cohen's formulation result, the researcher can interpret based on the criteria : $0.2 \geq$ small effect sice; $0.5 \geq$ modest effect size; $1.00 \geq$ moderate effect size; $1.00 <$ strong effict size.[69]

The Stastistical Hyphoteses of the research as bellow:

$$H_0 : \{\mu_1 \neq \mu_2\}$$

$$H_\alpha : \{\mu_1 \neq \mu_2\}$$

Notes :

H_0 : Null Hyphothesis

H_α : Alternative Hyphotesis

μ_1 : Students Vocabulary Mastery, who were thaught picture cards

μ_2 : Students Vocabulary Mastery, who were thaught picture cards

The researcher assumption of those hyphotheses are as follow :

1) If $t_0 > t_{table}$ the Null Hyphothesis (H_0) was rejected and alternative hyphothesis (H_α) was accepted. It means there was a significant difference of students vocabulary mastery ability between students who

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[69] Daniel Mujis, Doing Quantitative Research in Education with SPSS, (London: Sage Publications Ltd, 2004), p.136.

were thaught through pictures and students who are taught through other technique.

2) If $t_0 < t_{table}$ the Null Hyphothesis (H_0) was accepted and alternative hyphothesis (H_a) was rejected. It means there was no a significant difference of students vocabulary mastery ability between students who were thaught through pictures and students who are taught through other technique.

After the calculation on effect size was done, the result could be interpreted with following criteria :

$0 - 0.20$ = weak effect

$0.21 - 0.50$ = modest effect

$0.51 - 1.00$ = moderate effect

>1.00 = strong effect
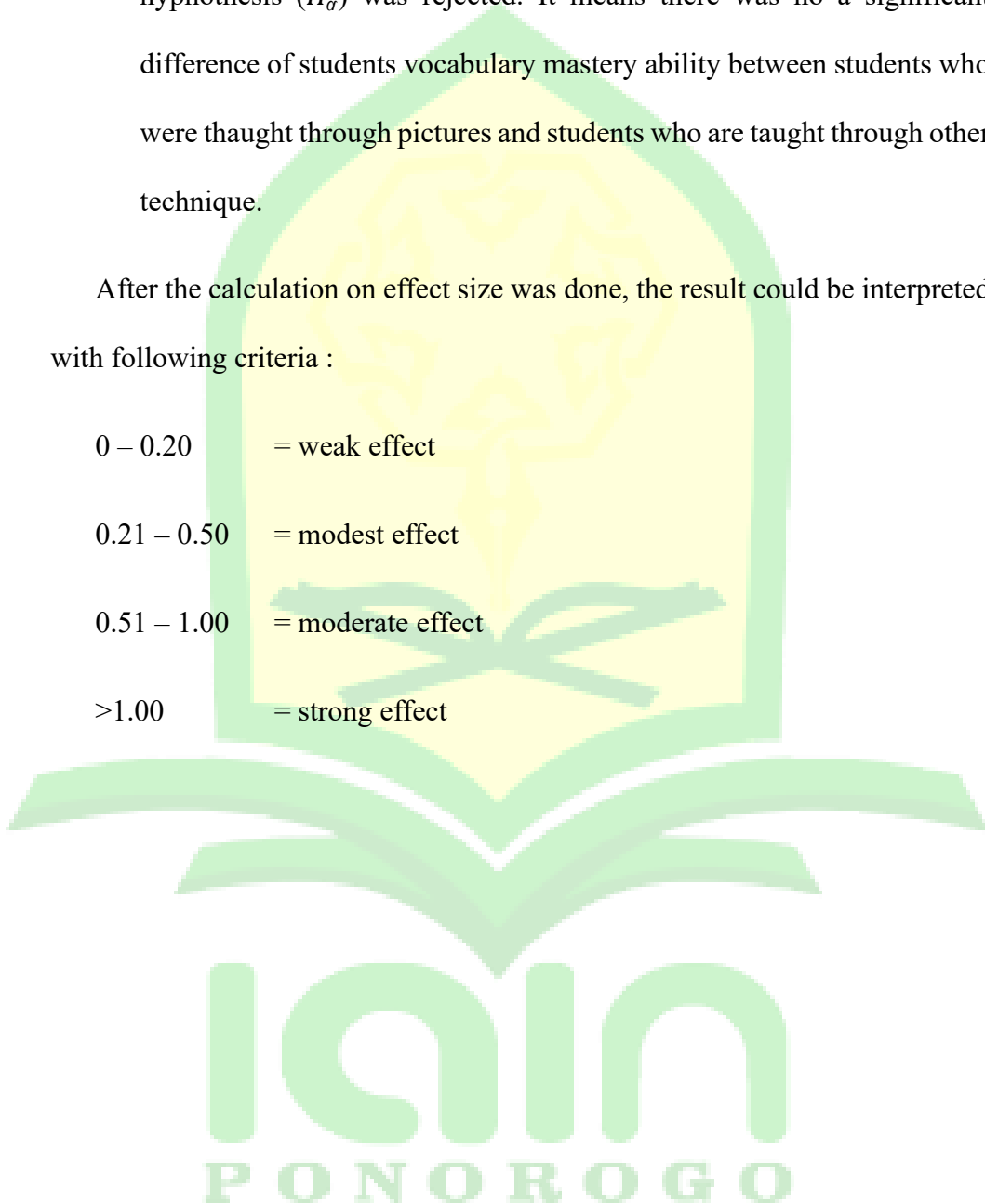
CHAPTER IV

FINDINGS AND DISCUSSION

A. **Overview of the research location**

1. Madrasah History

Madrasah Tsanawiyah Negeri 2 (MTsN 2) Ponorogo is one of the State Madrasah Tsanawiyah established in Ponorogo Regency since 1980, based on the Decree of the Minister of Religious Affairs of the Republic of Indonesia Number 27 of 1980. This madrasah is located at Jalan Ki Ageng Mirah No. 79, Jepang, Babadan, Ponorogo. Since the establishment of MTsN Ponorogo, this madrasah has experienced several changes in leadership by great figures, as follows:

1. H. Muslim. BA
2. Drs. Abdullah
3. H. Kusto. BA
4. Drs. Sumardi Al Basyari
5. Drs. H. Imam Asngari, SH., M.Pd
6. Drs. H. Sutarto Kerim
7. Drs. Moch Haris. M.Pd.I
8. Drs. Tarib. M.Pd.I
9. Mahmud. S. Ag., M. Pd., I

Under the leadership of the head of the madrasah, Madrasah Tsanawiyah Negeri 2 Ponorogo has shown better development and

existence in the field of education with religious nuances. The hope for the future is that this madrasah can provide a more significant contribution as a means of spreading Islam and progress in Science and Technology based on the steadfastness of Faith and Piety.

With increasing age, MTsN 2 Ponorogo will continue to strive to improve the quality of education. One of the steps taken to improve the quality of education and teaching at Madrasah Tsanawiyah Negeri 2 Ponorogo is to develop facilities and infrastructure. In addition, the madrasah also focuses on improving educational services for all students, both regular, talented, and intelligent, and strives to maximize the potential of students at MTsN 2 Ponorogo.

To achieve success in realizing these ideals, all aspects involved are committed to uniting vision, mission, and solidarity. This aims to create conducive madrasah conditions, so that the teaching and learning process can run as expected.

2. Vision, Mission, and Goals of Madrasah

As an effort of direction, motivation and strength of movement for all levels directly involved in the development of Madrasah Tsanawiyah Negeri 2 Ponorogo, the Vision and Mission formulated at Madrasah Tsanawiyah Negeri 2 Ponorogo.

The formulation of Vision and Mission is considered important to unify the perceptions, views, ideals and expectations of all parties involved in it. The formulation of the Vision and Mission.

a. **Madrasah Vision**

The realization of Madrsah Model as a Center of Excellence and Reference in Academic and Non-Academic Quality and Akhlaq Karimah.

b. **Madrasah Mission**

1) Building a madrasah culture that teaches and encourages the spirit of excellence.

2) Developing competent madrasah human resources.

3) Organizing education that produces graduates with academic and non-academic quality and good character.

4) Developing IT-based madrasah management systems and quality assurance.

5) Developing and maintaining a healthy, conducive, and harmonious environment.

6) Increasing the participation of stakeholders in madrasah development

7) Realizing madrassas that meet national education standards

8) Realizing madrassas that are oriented towards international standards.

c. **Madrasah Objectives**

1) The realization of academic and non-academic quality graduates and good character

2) Build a madrasa culture that teaches in one vision

3) The realization of madrasah human resources who have complete competence

4) Implementation of IT-based madrasah governance and quality assurance system

5) Implementation and maintenance of a schat, conducive, and harmonious madrasah environment

6) The formation of stakeholders who have a sense of ownership of madrasah (school ownership)

7) Achievement of national education standards

8) The realization of madrasah that is oriented towards international standards.

3. Brief Profile of Madrasah

Work Unit Code   :   425746

Madrasah Name   :   MTsN 2 Ponorogo

Madrasah   Statistical   :   1211350020002
Number

NPSN   :   20584854

Madrasah Accreditation   :   A (93)

Number, date of research permit	:	No. 1179/BAN-SM/SK/2021 Tgl. 16 November 2021
Madrasah Address	:	Ki Ageng Mirah Street 79 Japan

Village: Japan

Sub-district : Babadan

District/City: Ponorogo

Province: East Java   No. Telp: (0352) 461 227

Emai: Mtsn2ponorogo@gmail.com

Website: www.mtsn2ponorogo.sch.id

NPWP Madrasah	:	00.182.734.4.647.000
Name of Madrasah Head	:	Mahmud, S.Ag., M.Pd.I
Phone Number	:	082132696470
Land Ownership	:	Pemerintah

Land Status: Hak Milik Bersertifikat

Land Area: 5.939m^2

Building Status	:	Government

B. Description of Research Results

1. Description of Research Results

This study uses a quasi-experimental method, where the researcher selects two classes as a sample. The experimental class received the pretest, treatment, and posttest, while the control class only received the

pretest and posttest. In this study, class VIII Bilingual was chosen as a sample, with class VIII G Bilingual as the experimental group and class VIII H Bilingual as the control group in MTsN 2 Ponorogo.

In the first meeting of this study, the researcher carried out a pretest for two classes. Then, in the second and third meetings, the researcher applied the treatment with the Jigsaw learning technique using picture cards in the experimental class. Meanwhile, the control class underwent a learning evaluation at the second meeting. At the last meeting, which is the fourth meeting in the experimental class and the second meeting in the control class, the researcher gave a posttest and explained the learning material about "Comparison Degree".

a. **Research schedule**

In this study, the researcher applied the pretest-posttest method. This study involved two classes out of a total of seven classes, with four meetings conducted, namely pretest, first treatment, second treatment, and posttest. The research schedule can be seen in the table below.

Table 4. 1 Research Schedule of Experiment Class

Research date	Research activities
May, 7th 2024	Pre-test
May, 14th 2024	First Treatment
May, 16th 2024	Second Treatment
May, 21th 2024	Post-Test

Table 4. 2 Researcg Schedule of Control Class

Research Date	Research Activities
May, 6th 2024	Pre-Test
May, 14th 2024	First Meeting
May, 13th 2024	Second Meeting
May, 21th 2024	Post-Test

b. Teaching Procedures (Experimental and Control Classes)

In this study, the researcher took class VIII G Bilingual as the experimental class, VIII H Bilingual as the control class. Of the two classes, in class VII G Bilingual there were 33 students and in class VIII H Bilingual there were 31 students, but the researcher took a sample of 30 students from each class because they met the existing criteria, while the remaining students were not sampled because they did not meet the criteria. existing criteria.

To obtain this data, the researcher provided material about adjectives and verbs as well as sentence formulas for both classes. The learning material in this research is "Comparison Degree". Apart from that, researchers also use tests to obtain data. The test is multiple choice

In the experimental class, namely class VIII G Bilingual, in learning activities using the jigsaw technique using picture cards.

The process of learning activities in this class involves sequences determined by the researcher, such as pre-test, post-test, first treatment and second treatment.

The implementation of learning activities at the first meeting in the experimental class was that the researcher gave pre-test questions and post-test questions at the last meeting. In the treatment, students' learning activities in class use the jigsaw technique using picture cards. This part of the first meeting conveys the objectives, competencies and material to be studied. then the total number of students was divided into 6 groups. from each research group provides projects to work on and discuss. This group project is about understanding verbs and adjectives on picture cards contained in the "comparison degree" material. The task of each group is to fill in the blanks for each word on the picture card. The picture cards are all included in comparison degree material. There are three categories on the card, namely words used in positive degree, comparative degree, and superlative degree. after that the picture cards are grouped according to categories, for example there are three cards that are scrambled with the word 'tall' then other words such as 'taller' and 'tallest' are put into one group. where the word 'tall' is used in positive degree sentences, 'taller' in comparative degree sentences, and 'tallest' in superlative degree sentences. Then the group that has succeeded in arranging the picture cards will be given the opportunity to show the results of their group work in front

of the class. If there are differences in each group, they will be discussed and discussed between the students and the researcher.

Meanwhile, in the control class, the researcher also gave tests to students like in the experimental class. At the second and third meetings, different treatments were applied to the experimental classes. In the control class, teaching is carried out using lecture learning techniques. The researcher provides explanations and several rules related to the material to students during the learning process. If any student does not understand the material, they can ask the researcher, who will then provide an explanation. The learning process in the control class is carried out in the same way as in the experimental class.

2. **Experiment Class Student Score Results**

In the pretest there are 20 test items. The test is multiple choice. After providing treatment, the researcher gave a post test for both classes. This aims to determine student achievement after being given treatment.

Table 4. 3 The Score of Experiment Class

NO	NAMA	PRE-TEST	POST-TEST
1.	AAM	76	82
2.	AARI	86	92
3.	AZAH	82	96
4.	AKO	88	98
5.	ADSA	50	60
6.	ARS	74	96
7.	ASF	94	95
8.	CMAZH	76	80

9.	EHS	92	96
10.	FLNZ	54	58
11.	JFR	80	96
12.	KAA	90	84
13.	MAR	80	90
14.	NNZ	48	84
15.	NTN	58	68
16.	NPB	58	88
17.	NCAPK	86	98
18.	NZANA	48	84
19.	RPP	76	96
20.	RZNA	84	90
21.	RZA	70	78
22.	RHAK	70	78
23.	SM	70	78
24.	SKI	70	52
25.	SCMS	92	98
26.	SNW	82	98
27.	SER	84	86
28.	YPJ	80	86
29.	YDLRA	50	58
30.	ZA	76	90
TOTAL		**2258**	**2612**

The table above indicates that in the experimental class, the highest score on the pre-test was 94, and the lowest score was 48. In the post-test, the highest score was 98, while the lowest was 52. The total score for the pre-test was 2258, resulting in an average of 72.57, whereas the total score for the post-test was 2612, with an average of 83.73.

Based on this data, the results of the student tests from the experimental class are clearly presented in the following table, which displays both the pre-test and post-test outcomes.

Table 4. 4 Frequency Distribution of Pre-test in Experimental Class

pretest				
	Frequency	Percent	Valid Percent	Cumulative Percent
48	2	6.7	6.7	6.7
50	2	6.7	6.7	13.3
54	1	3.3	3.3	16.7
58	1	3.3	3.3	20.0
70	4	13.3	13.3	33.3
74	1	3.3	3.3	36.7
76	4	13.3	13.3	50.0
Valid 80	3	10.0	10.0	60.0
82	2	6.7	6.7	66.7
84	2	6.7	6.7	73.3
86	2	6.7	6.7	80.0
88	1	3.3	3.3	83.3
90	1	3.3	3.3	86.7
92	3	10.0	10.0	96.7
94	1	3.3	3.3	100.0
Total	30	100.0	100.0	

The table above illustrates the variability in scores among students. Specifically, 6.7% of students scored 48, another 6.7% scored 50, 3.3% scored 54, and 3.3% scored 58. Additionally, 13.3% of students achieved a score of 70, 3.3% scored 74, 13.3% scored 78, 10.0% scored 80, 6.7% scored 82, 6.7% scored 84, 6.7% scored 86, 3.3% scored 88, 3.3% scored 90, 10.0% scored 92, and 3.3% scored 94. The frequency table can be represented in the following histogram:
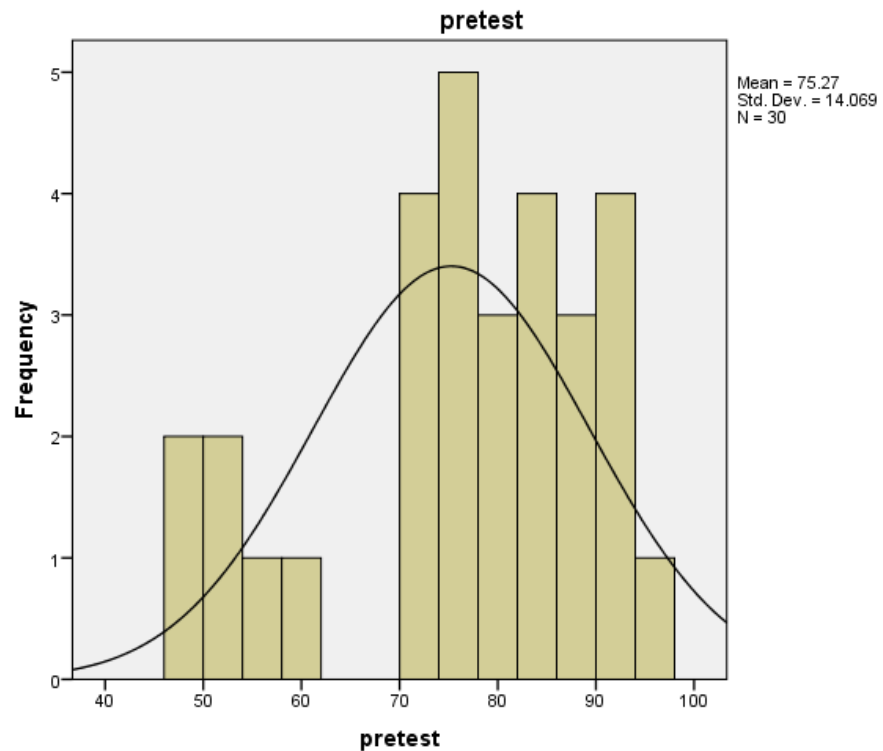
Picture 4. 1 Histogram for the Pre-test in Experimental Class

The histogram above indicates that the mean (M) is 75.27 and the standard deviation (SD) is 14.069. To categorize students' vocabulary mastery as good, medium, or low, the researcher uses the following criteria for classification:

1) More than M + 1.SD (75,27+ 14,069= 89,34) is categorized into good

2) Between M – 1.SD to M + 1.SD is categorized into medium

3) Less that M – 1.SD (75,27+ 14,069= 61,20) is categorized into low

From the histogram image above, it can be shown that M = 75.27 and SD = 14.069. To determine the category of students' vocabulary mastery as good, medium or low, the researcher classifies the scores using the following standards:

Table 4. 5 Frequency Distribution of Post-test in Experimental Class

		Frequency	Percent	Valid Percent	Cumulative Percent
					posttest
Valid	52	1	3.3	3.3	3.3
	58	2	6.7	6.7	10.0
	60	1	3.3	3.3	13.3
	68	2	6.7	6.7	20.0
	78	3	10.0	10.0	30.0
	80	1	3.3	3.3	33.3
	82	1	3.3	3.3	36.7
	84	3	10.0	10.0	46.7
	86	2	6.7	6.7	53.3
	90	3	10.0	10.0	63.3
	92	1	3.3	3.3	66.7
	96	6	20.0	20.0	86.7
	98	4	13.3	13.3	100.0
	Total	30	100.0	100.0	

The table above illustrates the variability in scores. Specifically, 3.3% of students scored 52, 6.7% scored 58, 3.3% scored 60, and 6.7% scored 68. Additionally, 10.0% of students achieved a score of 78, 3.3% scored 80, 3.3% scored 82, and 10.0% scored 84. Furthermore, 6.7% of students scored 86, 10.0% scored

90, 3.3% scored 92, 20.0% scored 96, and 3.3% scored 98. The histogram representing this frequency table is shown below:
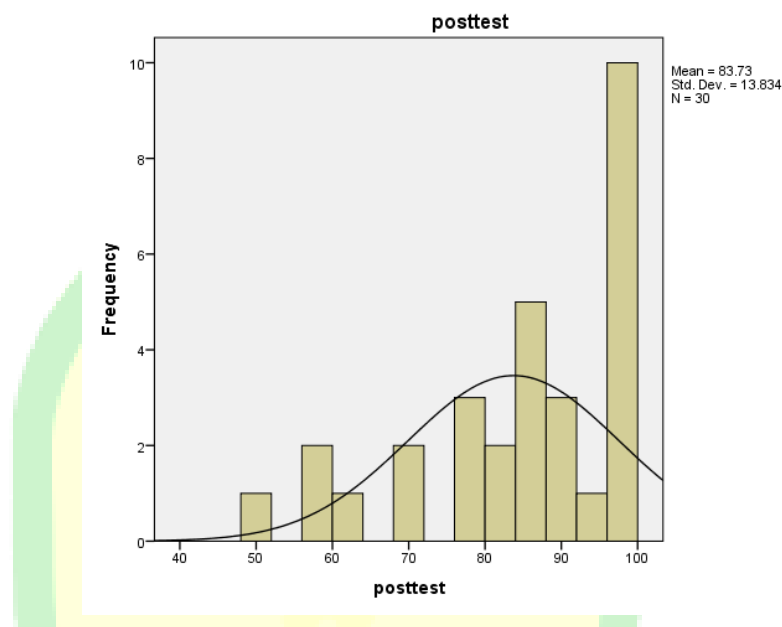
Picture 4. 2 Histogram for the Post -test in Experimental Class

The histogram above indicates that M = 83.73 and SD = 13.83. To classify the students' vocabulary mastery as good, medium, or low, the researcher categorized the scores according to the following standards:

1) More than M + 1.SD (83,73 + 13,83= 97,56) is categorized into good

2) Between M – 1.SD to M + 1.SD is categorized into medium

3) Less that M – 1.SD (83,73 - 13,83= = 69,9) is categorized into low

Therefore, it can be observed that scores above 97.56 are classified as good, scores ranging from 69.9 to 97.56 are considered medium, and scores below 69.9 are classified as low.

3. **Control Class Student Score Results**

In the control class, the researcher selected objective tests for both the pre-test and post-test, providing 20 multiple-choice questions.

The following shows the results of the pre-test and post-test scores for students who did not utilize the jigsaw learning technique with picture cards to enhance their vocabulary mastery.

Table 4. 6 The Score of Control Class

NO	NAMA	PRE-TEST	POST-TEST
1.	ADM	58	76
2.	ACR	70	80
3.	ANHPF	58	84
4.	BMAF	56	92
5.	DGA	44	50
6.	DRI	44	50
7.	FI	46	78
8.	FHV	44	80
9.	FQM	70	78
10.	HSAZ	76	80
11.	KLA	60	82
12.	LLAA	38	66
13.	LNT	70	74
14.	MKI	56	68
15.	MAA	44	88
16.	MANR	80	92
17.	MANRAB	60	88
18.	MZNA	54	74
19.	NSD	36	40
20.	NHF	38	40
21.	NAD	76	64
22.	QSN	58	64
23.	RFSK	72	84
24.	TDA	722	88
25.	TZ	82	92
26.	TVA	80	92
27.	TK	36	66
28.	VPY	36	66
29.	WKS	82	92
30.	WFZ	56	50
	TOTAL	**2052**	**2476**

The table above indicates that the control class achieved a highest score of 82 in the pre-test and a lowest score of 36. Additionally, for the post-test, the highest score was 92, and the lowest score was 40. Consequently, the total score for the pre-test amounted to 2052, resulting in a mean of 59.53.

In the meantime, the total score for the post-test was 2476, yielding a mean of 74.60. The test results for the students in the control class are clearly displayed in the table below, which presents the outcomes of both the pre-test and post-test.

Table 4. 7 Control Class Pre-test Frequency Distribution

pretest				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	36	2	6.7	6.7	6.7
	38	2	6.7	6.7	13.3
	44	4	13.3	13.3	26.7
	46	1	3.3	3.3	30.0
	54	1	3.3	3.3	33.3
	56	3	10.0	10.0	43.3
	58	3	10.0	10.0	53.3
	60	2	6.7	6.7	60.0
	70	4	13.3	13.3	73.3
	72	2	6.7	6.7	80.0
	76	2	6.7	6.7	86.7
	80	2	6.7	6.7	93.3
	82	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

From the table above, it is clear that the scores are diverse. 6.7% of students scored 36, another 6.7% scored 38, 13.3% scored 44, 3.3% scored 46, 3.3% scored 54, 10.0% scored 56, 10.0% scored

58, 6.7% scored 60, 13.3% scored 70, 6.7% scored 72, 6.7% scored 76, 6.7% scored 80, and 6.7% scored 82. The histogram based on this frequency table is shown below:
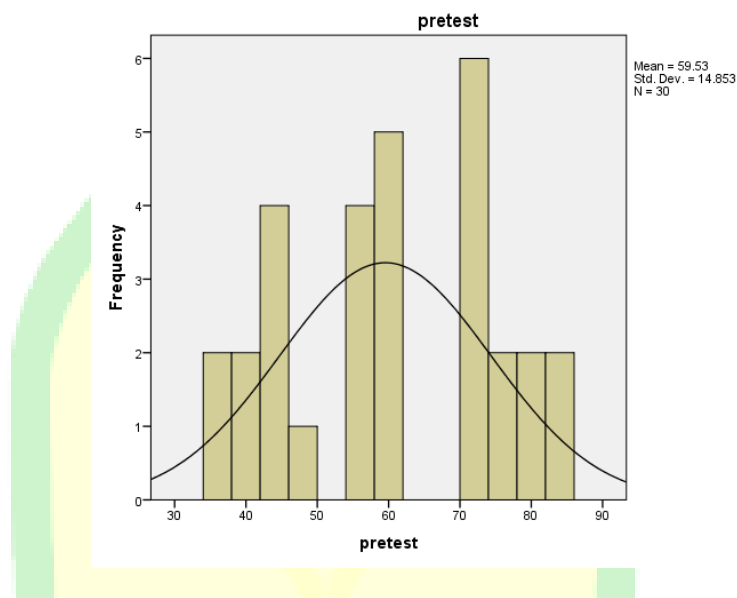
Picture 4. 3 Histogram for the Pre-test in Control Class

Based on the histogram above, it shows that M = 59.53 and SD = 14.85. To classify the students' vocabulary mastery into good, medium, or low categories, the researcher used the following standards:

1) More than M + 1.SD (59,53 + 14,85 = 74,38) is categorized into good

2) Between M – 1.SD to M + 1.SD is categorized into medium

3) Less that M – 1.SD (59,53 - 14,85 = 44,68) is categorized into low

Thus it can be seen that the scores which are more than 59,53 is categorized into good, the score between 44,68 until 59,53 is

categorized into medium, and the scores which are less than 44,68 is categorized into low.

table 4. 8 Control Class Post-test Frequency Distribution

posttest

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	40	2	6.7	6.7	6.7
	50	3	10.0	10.0	16.7
	64	2	6.7	6.7	23.3
	66	2	6.7	6.7	30.0
	68	1	3.3	3.3	33.3
	74	2	6.7	6.7	40.0
	76	1	3.3	3.3	43.3
	78	2	6.7	6.7	50.0
	80	3	10.0	10.0	60.0
	82	1	3.3	3.3	63.3
	84	2	6.7	6.7	70.0
	86	1	3.3	3.3	73.3
	88	3	10.0	10.0	83.3
	92	5	16.7	16.7	100.0
	Total	30	100.0	100.0	

The table above shows a range of scores. A total of 6.7% of students received a score of 40, 10.0% received a score of 50, 6.7% received a score of 64, 6.7% received a score of 66, 6.7% received a score of 68, 6.7% received a score of 74, 3.3% received a score of 76, 6.7% received a score of 78, 3.3% received a score of 80, 6.7% received a score of 82, 10.0% received a score of 84, 3.3% received a score of 86, 6.7% received a score of 88, 3.3% received a score of 92, and 6.7%. The histogram for this frequency distribution is shown below:

Picture 4. 4 Histogram for the Post-test in Experimental Class
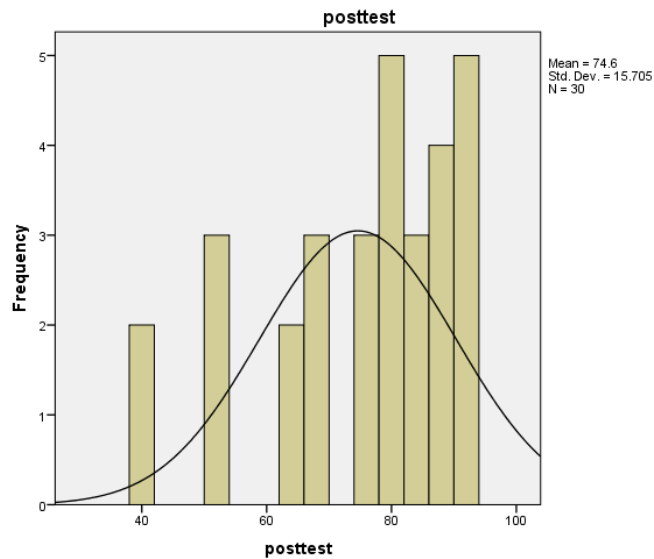
The histogram above indicates that the mean (M) is 74.6 and the standard deviation (SD) is 15.705. To classify the students' vocabulary mastery as good, medium, or low, the researcher categorized the scores based on the following standards:

1) More than M + 1.SD (74,6 + 15,705 = 90,31) is categorized into good

2) Between M – 1.SD to M + 1.SD is categorized into medium

3) Less that M – 1.SD (74,6 - 15,705 = 58,90) is categorized into low

It can therefore be concluded that scores above 90.31 fall into the good category, scores ranging from 58.90 to 90.31

are classified as medium, and scores below 58.90 are categorized as low.

4. Data analysis

Hypothesis testing is carried out when the data studied meets the assumptions, namely normal and homogeneous distribution. To find out, normality and homogeneity tests must be given.

a. Normality test

The normality test conducted with SPSS is a method used to determine whether the data follows a normal distribution.. The hypothesis for the normality test can be understood as follows:

H_o: data is not normally distributed

H_a: data is normally distributed

The null hypothesis (H_0) will be accepted if Sig is greater than 0.05 (Sig > α). The table below presents the results of the normality test calculations.

table 4. 9 Normality Test One Sample Kolmogorov-Smirnov Test

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pretestEx	.154	30	.067	.899	30	.008
posttestEx	.155	30	.062	.857	30	.001

pretestCnt	.154	30	.067	.899	30	.008
posttestCnt	.149	30	.086	.873	30	.002

a. Lilliefors Significance Correction

b. Homogenenity test

After performing the normality test, the next step is to conduct a homogeneity test on the collected data. The homogeneity test is used to determine whether the data is uniform or not. This test is conducted using ANOVA with the Levene statistic in SPSS 20. The following are the results of the creativity homogeneity test:

table 4. 10 Results of the Homogeneity of Variance Test

Test of Homogeneity of Variances

English Language Test

Levene Statistic	df1	df2	Sig.
.019	3	116	.996

According to the SPSS calculation, the Sig. value is greater than α (0.996 > 0.05), indicating that the data is homogeneous.

c. Hypothesis test

After completing the normality and homogeneity tests, the next step the researcher will take is to conduct a t-test using the SPSS program. The t-test is applied to compare two groups, specifically the scores of students taught with different teaching strategies. In the experimental class, the jigsaw learning technique with picture cards is used, while the control class does not receive the same treatment.

The researcher uses SPSS 20 for hypothesis testing, which is conducted through a paired sample t-test. The results obtained from the data are as follows:

table 4. 11 Results of the Paired Samples Statistic

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretestEx	75.27	30	14.069	2.569
	posttestEx	84.47	30	13.356	2.439

Table 1.1 presents the descriptive statistics for each variable in the rice sample. The pre-test has a mean score of 75.27 from 30 data points, with a standard deviation of 14.069 and a standard error of 2.569. In contrast, the post-test shows a mean score of 84.47 from 30 data points, with a standard deviation of 13.356 and a standard error of 2.439. This indicates that the post-test mean is higher than the pre-test mean, although the post-test data shows a wider and larger distribution, accompanied by a higher standard error.

table 4. 12 Result of Paired Correlations

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	pretestEx & posttestEx	30	.745	.000

Table 4.12 shows data with a significance value of 0.000, meaning that the two variables in the paired sample show a

significant correlation or relationship. there is a significant correlation or relationship.

table 4. 13 Result of Paired Sample T-test

Paired Samples Test

	Paired Differences							
				95% Confidence Interval of the Difference				Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
pretest_experiment – posttest_experiment	-9.200	9.820	1.793	-12.867	-5.533	-5.131	29	.000

The table above indicates that the obtained significance value (2-tailed) is 0.000, which means that 0.000 < 0.05. This suggests that there is a significant difference between the Experimental Class and the Control Class. Based on this data, the researchers formulated the following hypothesis:

H_0 : There is a significant difference in scores between students who taught by using the jigsaw learning technique using picture cards than students who are not taught by using the technique on improving vocabulary skills of class VIII (Bilingual) students at MTsN 2 Ponorogo.

H_a : There is no difference There is a significant difference in scores between students who are taught with jigsaw learning techniques using picture cards than students who are not taught

using these techniques on improving vocabulary skills of students in class VIII (Bilingual) at MTsN 2 Ponorogo.

The results showed that the result was 0.000. This means 0.000 < 0.05 then it can be said that the score is significant. H_0 is accepted. It can be concluded that there is a significant difference in scores in improving vocabulary comprehension in class VIII (Bilingual) students at MTsN 2 Ponorogo using jigsaw learning techniques with picture cards and those that do not.

C. Discussion

In this section, researchers explain the results of the research data that has been included in the previous chapter. Based on the results of the data that has been obtained.

Based on the data obtained, it can be concluded that the jigsaw learning technique was first developed by social psychologist Elliot Aronson in 1971. Aronson created this method that can increase cooperation and improve relationships between students in schools in Austin, Texas, United States.[70] Meanwhile, The use of picture cards as a tool in education dates back to the early 20th century often associated with the Montessori educational method, developed by Dr. Maria Montessori in the early 1900s.[71] Montessori used a variety of visual aids, including picture

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[70] Elliot Aronson dan Shelley Patnoe, The Jigsaw Classroom: Building Cooperation in the Classroom (New York: Addison Wesley Longman, 1997).
[71] Spencer Kagan, Cooperative Learning (San Juan Capistrano, CA: Kagan Cooperative Learning, 1994).

cards, to help children connect words with objects in a concrete way, which could strengthen understanding of abstract concepts.[72] This learning technique has a good impact in improving vocabulary mastery in students of class VIII G as the experimental class. This learning technique is applied in the classroom in collaboration with "comparisson degree" which is a simple text material that students learn in first grade.

This can be conversely relative to class VIII H as the control class which does not apply the Jigsaw learning method utilizing picture cards but as it were applies the expository learning strategy, specifically the instructor clarifies before the course at that point students do the task which has less affect on student vocabulary mastery.

It can be seen from the data that the minimum value in the pre-test is 48 while the minimum value in the post-test is 52. In addition, the maximum score was also achieved by some students with a score of 98. From these results, it shows a significant change by students. The scores obtained by students in the pre-test and post test show a significant difference.

The increase in vocabulary mastery in experimental class students can be seen from the average results obtained during the pre-test of 75.27 and increased significantly after being given treatment, namely the average post-test result to 83.73. While the class that was not given treatment as the control class had a mean pre-test of 59.53 and a mean post-test of 74.60.

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[72] Elliot Aronson, Norman Blaney, Cynthia Stephan, Jill Sikes, dan Matthew Snapp, The Jigsaw Classroom (Beverly Hills, CA: Sage Publications, 1978).

From these results, it is known that the application of learning techniques in the control class proved less significant to improve students' reading comprehension.

The results of this study also refer to the theory of Robert Slavin, Hatch and Brown, and Asra that the jigsaw learning technique using picture cards can effectively improve vocabulary mastery in students. this learning technique can build collaborative work by discussing so that students can establish active communication in the classroom. the results of trials on students conducted by researchers found that the application of jigsaw learning techniques using picture cards to improve vocabulary mastery in students can experience significant changes. researchers conducted two treatments, the results of the study were effective in improving vocabulary mastery in students.

This study obtained data based on the t-test or hypothesis test from the post-test results of the control class and the experimental class. The result is t-count> t-table or 5.131> 2.228 which means H_0 is accepted. This means that there is a significant difference between vocabulary mastery in students who receive jigsaw learning techniques using picture cards compared to students who do not use the technique.

This learning technique can be a new innovation for teachers to apply to classroom learning activities. Because this technique has several steps such as first students will be given directions to read the story in the material, then form groups, discuss, observe picture cards, group them in

one vocabulary group, and show the results of the discussion to other groups, and work on questions.

With the obtained research data, it is concluded from the hypothesis that the researcher made and based on the results of the hypothesis test that has been carried out, it can be concluded for this study that if H_0 is accepted, then there is a significant difference in vocabulary mastery between students who are taught with the jigsaw learning technique using picture cards and those who are not.
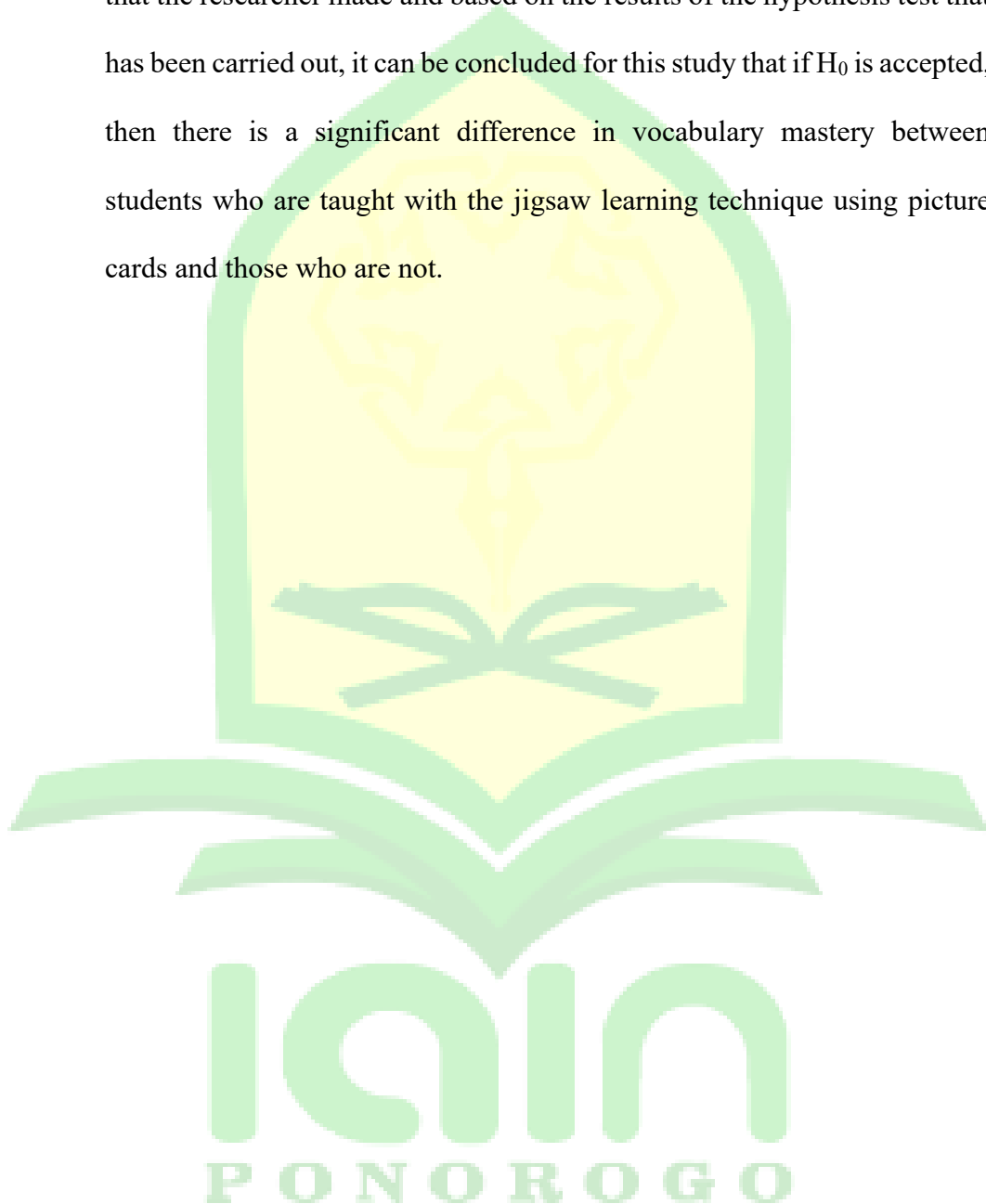
BAB V

CLOSING

A. Conclusion

From the data that has been analyzed, the researcher concluded that the jigsaw learning technique using picture cards is effective in improving vocabulary mastery in class VIII students at MTsN 2 Ponorogo. This is based on the results of the hypothesis test that t-count > t-table or 5.131> 2.228 which indicates that H_0 is accepted and H_a is rejected. This means that in this study there is a significant difference in vocabulary mastery between students who are taught using the jigsaw learning technique using picture cards compared to those who are not or the experimental class has better vocabulary mastery than the control class that does not receive the application of the learning technique. So, the conclusion is that the learning technique using picture cards is proven to be effective in improving vocabulary mastery in class VIII students at MTsN 2 Ponorogo.

B. Suggestion

Based on the above conclusions, there are several suggestions from researchers:

1. For teachers

The researcher aims for English teachers to select the most effective methods for enhancing students' vocabulary comprehension. One

effective technique for this purpose is the jigsaw learning method, which utilizes picture cards to improve students' vocabulary skills.

2. For Students of MTsN 2 Ponorogo

This study aims to raise awareness among students, particularly those in class VIII at MTsN 2 Ponorogo during the 2023/2024 academic year, about improving vocabulary comprehension through the use of jigsaw learning techniques with picture cards.

3. For Further Researchers

For further research, researchers who are interested in applying jigsaw learning techniques using picture cards must understand the steps. They can teach vocabulary mastery using jigsaw learning techniques using picture cards on other skills in students. It can be applied in reading, speaking, writing, or listening.
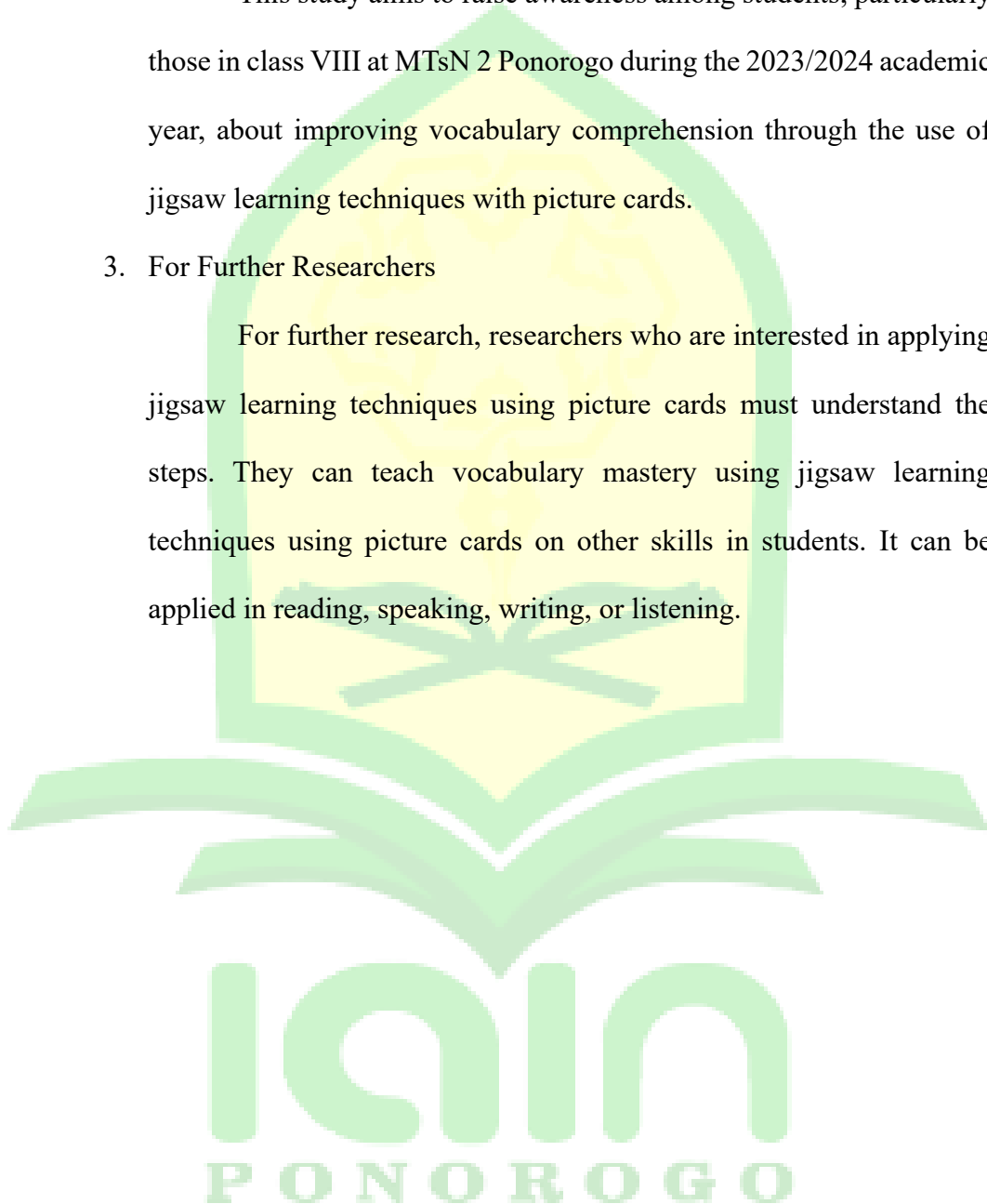
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