

**THE EFFECTIVENESS OF THE JIGSAW IV TECHNIQUE  
COMBINED WITH INSTAGRAM CAROUSEL AS POST-READING TASK  
IN IMPROVING STUDENTS' READING COMPREHENSION**

**(Undergraduate Thesis)**

**By:**

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**ENGLISH EDUCATION STUDY PROGRAM  
DEPARTMENT OF LANGUAGES AND ARTS EDUCATION  
FACULTY OF TEACHER TRAINING AND EDUCATION  
UNIVERSITY OF LAMPUNG**

**2026**

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**By:**

**Tirta Bella Xenia**

**An Undergraduate Thesis**

**Submitted in a Partial Fulfillment of  
The Requirements for S-1 Degree**

**In**

**The Language and Arts Education Department of  
The Faculty of Teacher Training and Education**



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## ABSTRACT

### THE EFFECTIVENESS OF THE JIGSAW IV TECHNIQUE COMBINED WITH INSTAGRAM CAROUSEL AS POST-READING TASK IN IMPROVING STUDENTS' READING COMPREHENSION

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Tirta Bella Xenia

This research aims to (1) determine whether there is a significant difference in students' reading comprehension scores after being taught through the Jigsaw IV technique combined with Instagram Carousel as a post-reading task, and (2) to identify which reading aspect shows the most improvement. This research employed a quantitative method using a one-group pre-test and post-test design involving 36 students of class XII.2 at SMAN 1 Tegineneng in the 2025/2026 academic year. The instrument was a reading comprehension test on hortatory exposition texts, and the data were analyzed using a paired sample t-test with a significance level of  $p < 0.05$ . The findings revealed a significant difference between the students' pre-test and post-test results. The mean pre-test score was 53.403, while the post-test mean increased to 81.528, showing a difference of 28.125 points. The t-count (16.320) > the t-table (2.030), with a Sig. (2-tailed) = 0.000 < 0.05, indicating that  $H_1$  was accepted. Among all aspects, the main idea showed the largest difference score, with an increase from 4.58 to 7.58 and total correct answers from 165 to 273. It can be concluded that the Jigsaw IV technique combined with Instagram Carousel as a post-reading task shows effectiveness in improving students' reading comprehension scores and fostering a more engaging reading learning process.

**Keywords:** *Cooperative Learning, Hortatory Exposition Text, Instagram Carousel, Jigsaw IV Technique, Reading Comprehension*

Research Title : **THE EFFECTIVENESS OF THE JIGSAW IV  
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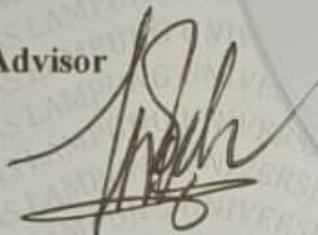
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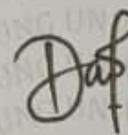
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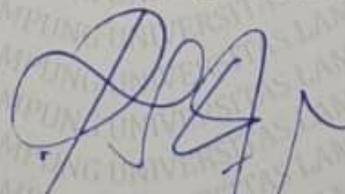
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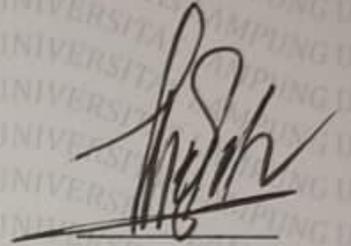


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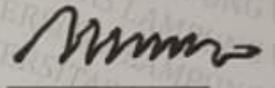
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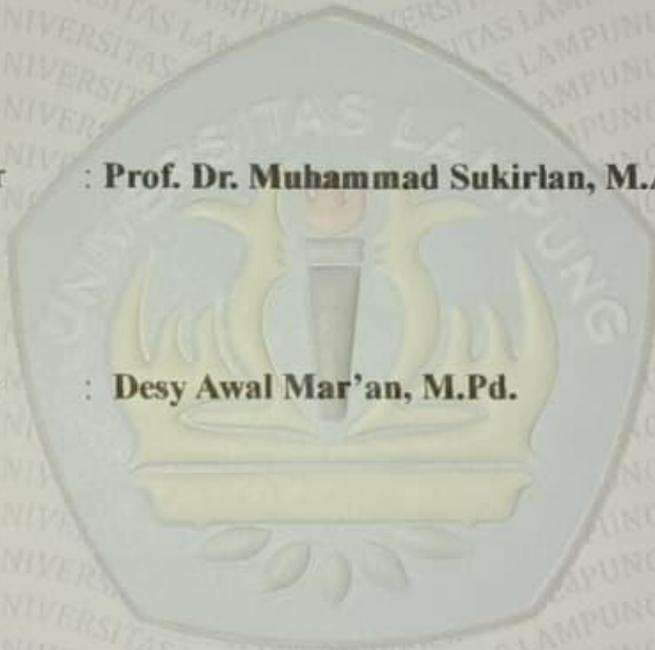
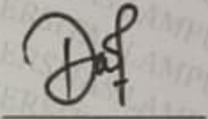
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Menyatakan bahwa skripsi ini adalah karya dari pelaksanaan penelitian saya sendiri. Sepanjang pengetahuan saya, karya ini tidak berisi materi yang ditulis orang lain, kecuali bagian-bagian tertentu yang saya gunakan sebagai acuan. Apabila ternyata terbukti bahwa pernyataan ini tidak benar, maka hal tersebut sepenuhnya tanggung jawab saya.

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## **CURRICULUM VITAE**

The author, Tirta Bella Xenia, was born on January 1, 2004, in Kresno Aji, Tegineneng, Pesawaran. She is the second child and the only daughter of Ahmad Tanji and Yuyun Yunaningsih. She grew up in a family with two brothers, Denny Dewantara and Adhi Baskara, who played an important role in shaping her character and personal development.

Her educational journey began in 2009 at 'Aisyiyah Bustanul Athfal 3 Kindergarten. She then continued her elementary education at SD Negeri 5 Kresno Widodo, graduating in 2016. In the same year, she pursued her junior high school education at SMP Negeri 11 Pesawaran and completed it in 2019. She later attended SMA Negeri 1 Tegineneng, where she completed her senior high school education and graduated in 2022.

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## **MOTTO**

*And Allah is the best of planners.*

**(Qur'an, Surah Al-Anfāl: 30)**

*Indeed, with hardship [will be] ease.*

**(Qur'an, Surah Ash-Sharḥ: 5)**

*If something is destined for you,  
never in million years will it be for somebody else.*

**(Inspired by the concept of tawakkul in Islam)**

## **DEDICATION**

In the name of Allah Subhanallahu Wa Ta'ala, The Most Gracious, The Most Merciful.

This thesis is lovingly dedicated to my beloved parents, Ahmad Tanji and Yuyun Yunaningsih, whose unwavering prayers, sacrifices, and endless support have been the foundation of my journey. Their patience and strength have guided me through every step of this process.

This thesis is also proudly dedicated to my brothers, Denny Dewantara and Adhi Baskara, whose presence, encouragement, and quiet support have given me strength and comfort along the way.

This thesis stands as a small reflection of their love, faith, and belief in me.

## ACKNOWLEDGEMENTS

Alhamdulillahillāhi rabbil ‘ālamīn, all praise is due to Allah SWT, the Most Gracious and the Most Merciful, for His abundant mercy, guidance, and blessings that have enabled the author to complete this undergraduate thesis entitled “*The Effectiveness of the Jigsaw IV Technique Combined with Instagram Carousel as a Post-Reading Task in Improving Students’ Reading Comprehension.*” This thesis is submitted in partial fulfillment of the requirements for the Bachelor’s degree in the English Education Study Program, Faculty of Teacher Training and Education, University of Lampung.

Throughout the process of completing this thesis, the author humbly realizes that this work could not have been completed without the support, guidance, and kindness of many individuals. The author would like to sincerely thank all those who generously shared their time, encouragement, and valuable insights throughout the research process. With deep appreciation and heartfelt gratitude, the author respectfully extends her thanks and appreciation to:

1. Prof. Dr. Cucu Sutarsyah, M.A., as the first advisor, for his invaluable guidance, patience, and insightful suggestions throughout the completion of this thesis. His expertise and encouragement greatly contributed to the quality of this thesis.
2. Desy Awal Mar’an, M.Pd., as the second advisor, for her thoughtful guidance, continuous support, and constructive feedback, which helped refine this research and motivated the author to keep moving forward.
3. Prof. Dr. Muhammad Sukirlan, M.A., as the examiner, for his meaningful suggestions, critical insights, and valuable feedback that helped improve this thesis.

4. Dr. Feni Munifatullah, M.Hum., as the Head of the English Education Study Program and also the Academic Advisor, for her guidance, care, and support throughout the author's academic journey.
5. Her beloved parents, Ahmad Tanji and Yuyun Yunaningsih, whose endless prayers, sacrifices, and unconditional love have been the strongest foundation of the author's life. Their faith and patience have been a constant source of strength in every step taken.
6. Her cherished brothers, Denny Dewantara and Adhi Baskara, and her sister-in-law, Kristina Aprilia, for their support, understanding, and presence that have always brought comfort and strength.
7. SMA Negeri 1 Tegineneng, especially Triana Aprilia, S.Pd., and the students of Class XII.2 2025/2026, for their openness, cooperation, and kindness during the research process, which made this research possible.
8. Her beloved teachers Hartiningsih, S.Pd., whose guidance led the author to her first achievement, Three Handayani Sidabutar, M.Pd., for her motivation and inspiration in learning English, and Supra, S.Pd., for his sincere assistance and encouragement that helped the author reach higher education. Without their guidance, the author would not have found her direction in life.
9. Her beloved niece, Nadya Nur Faiza, and cherished cousin, Amanda Aulia, whose presence has filled the author's days with joy, warmth, and color.
10. Her lifelong friends, Sela Puja Wati, Lidia Ningsih, Siti Zullaiha, Vivi Mey Mulyani, Selvi Octavia, Natasya Mega Dewi, and all friends of Class 9C, whose friendship has remained strong through time, shaping meaningful memories from adolescence until today.
11. Her soul besties Silvi Diana Tama and Dian Harisaturrahmah, whose kindness, loyalty, and unwavering support turned university life into a joyful and unforgettable chapter. Without them, she would not have had the courage to face campus life.
12. Her beloved English Education Batch 2022, especially Class D, for four years of shared laughter, learning, struggles, and memories that will always be cherished.

13. Her KKN-PLP and Debate SEEDS E-Comp 2024 teammates, for the togetherness, lessons, laughter, tears, and growth shared along the way, making those experiences deeply meaningful.
14. All family members and relatives, near and far, who may not be mentioned individually, for their prayers, encouragement, and quiet support throughout this journey.
15. Finally, I want to thank to myself for staying strong through the hardest days, for rising after every fall, and for continuing to move forward even when the path felt heavy. Thank you for your courage, resilience, and perseverance. This is not the end, keep going Bella.

The author realizes that this thesis still has limitations and sincerely welcomes any constructive criticism and suggestions. It is hoped that this undergraduate thesis may contribute positively to educational development and serve as a reference for future research.

Bandar Lampung, February 2, 2026

The author,

Tirta Bella Xenia

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## **I. INTRODUCTION**

In this chapter, the researcher elaborates on the main ideas of this research. It includes the background of the research, the research questions, the objectives of the research, the use of the research, the scope of the research, and the definition of terms.

### **1.1. Background of the Research**

Language is a vital tool in human daily life. In addition to serving as a means of communication, language is also used to express thoughts, share ideas, and access information. Across the globe, there are thousands of languages, and almost every country has a national language as well as local languages used by its people. Several major languages, such as Mandarin, Korean, Japanese, French, German, and especially English, are spoken by millions of people in various parts of the world.

In the global context, the importance of English cannot be denied or ignored, as it is the most widely used language worldwide. English has spread across the globe into nearly all fields, including science, technology, medicine, commerce, education, tourism, the internet, banking, film, and global communication in general (Rao, 2019). Therefore, many countries, including Indonesia, have adopted English as a foreign language formally taught in the education system.

The four main skills in learning English are divided into two receptive skills and two productive skills. The receptive skills are listening and reading, while the productive skills are speaking and writing. Among these skills, reading is the receptive skill that provides the most input in the language learning process because reading comprehension supports vocabulary development, understanding of grammatical structures, and improvement in speaking and writing skills, while also

enabling learners to understand academic texts and written information in everyday life (Yurko & Protsenko, 2021). In the digital age, students often encounter English texts through social media and digital devices. Therefore, reading skills are essential for learners to acquire new information and knowledge and to generate their own ideas. Moreover, reading increases students' vocabulary, which in turn enhances their speaking and writing skills.

According to Clark and Silberstein (1987:21), reading involves a cognitive process that includes interacting with printed material and monitoring comprehension to construct meaning. In addition, Byrne (2004) states that reading is an interaction between the brain and the eyes. A reader uses the eyes to recognize written symbols, including letters, punctuation marks, and spaces. The brain then processes these symbols into meaningful words, sentences, and paragraphs. This indicates that reading is not merely the activity of recognizing written words, but rather an active and complex process of constructing meaning through the interaction between the reader's mind and the text.

Distinct from reading in general, reading comprehension refers to the ability to develop a thorough understanding of the text being read. Woolley (2011:15–34) argues that reading is a complex and active mental process of constructing meaning from a text. The primary objective of reading comprehension focuses on a deeper understanding of the text's content, not simply on recognizing the meaning of words and sentences. Readers employ their language proficiency and background knowledge to build separate models of the text and the situation. Efficient readers tap into their metacognitive skills to oversee and control the comprehension process. Consequently, reading comprehension is the final outcome of the productive reading process, in which readers go beyond word recognition and can analyze, interpret, and relate the text to their own knowledge and the context provided.

Therefore, reading is one of the most important skills in learning English. This skill is needed by students not only to understand learning materials, but also to gain experience, insight, and information that can enrich their understanding of English

texts. Students are expected to understand the main ideas of a text, identify important details, and interpret both implied and explicit information in the text.

Based on the results of the researcher's observations during the implementation of the School Field Introduction Program (PLP) at SMAN 1 Gedung Aji Baru and pre-research observations at SMAN 1 Tegineneng, several factors were found to cause difficulties for students in understanding English texts. First, limited vocabulary and a lack of grammar mastery hindered students in understanding the information contained in the texts. Second, reading activities in class were generally carried out individually, which limited students' opportunities to discuss and exchange ideas in understanding the content of the texts. Third, students' reading habits were still relatively low. Many of them read only to find answers to questions given by the teacher, not to understand the entire content of the text. This shows that reading activities have not become an integral part of students' deep learning habits.

Given the issues mentioned above, English teachers are required to apply more creative and innovative techniques to develop students' reading skills. They play a strategic role in creating a learning environment that encourages students to actively interact with English texts. One technique considered effective in overcoming low reading comprehension among students is the Jigsaw Technique, a cooperative learning method that encourages students to work together in understanding reading texts by dividing responsibilities for different parts of the material. This technique is in line with the Social Constructivism Theory proposed by Vygotsky (1978), which emphasizes that learning occurs most effectively in a social context through interaction among students.

According to Slavin (1987), Jigsaw is a cooperative learning technique that organizes students into small groups with divided learning tasks, where each student becomes an "expert" on a certain part of the material and is responsible for teaching it to the other group members. Furthermore, Ra'no (2025) states that the Jigsaw technique is flexible and effective in developing reading skills through cooperative learning. The Jigsaw technique improves reading comprehension and promotes the development of students' critical thinking, communication, and social skills. This is because the Jigsaw involves breaking the text into smaller, more manageable

parts and creating a cooperative learning environment. The findings indicate that the implementation of the Jigsaw technique in the classroom can increase student engagement, motivate the learning process, and deepen understanding of the studied material.

In addition to teaching methods, the types of activities given after reading also play an important role in strengthening students' understanding of the text. In this research, the researcher used Instagram Carousel as a post-reading activity, where students presented the information, they understood from the text visually. This type of activity aligns with students' digital lifestyle and encourages higher-order cognitive processes and creativity. The use of Instagram Carousel as a post-reading activity is supported by Anderson's (1985) Cognitive Learning Theory, as cited in Downes (2022), which states that learners elaborate and build better mental representations of new information when they process it, making understanding and retention more effective. By creating Instagram Carousel slide designs, students are encouraged to actively reorganize key ideas and supporting details and are given the opportunity to demonstrate their understanding in creative ways. This is expected to improve memory, encourage more critical thinking, and foster greater interest in reading activities.

Based on these considerations, the researcher intends to integrate the Jigsaw IV technique with Instagram Carousel as a post-reading task to improve students' reading comprehension. Through this technique, it is hoped that students will be able to understand the text comprehensively, participate actively in discussions and information exchange, and express their understanding visually, communicatively, and creatively. The researcher believes that the combination of Jigsaw IV and Instagram Carousel, as a contextual digital cooperative learning approach, will provide a meaningful and enjoyable learning experience for students. The researcher also believes that the collaborative nature of the class will increase social interaction and student engagement during the learning process. Therefore, the researcher believes that the use of Jigsaw IV with Instagram Carousel will help improve students' reading comprehension and meet the demands of 21st-century education, which focuses on critical thinking, collaboration, and the use of technology.

## **1.2. Research Question**

Based on the background described above, the researcher formulates the following research questions:

1. Is there a significant difference in students' reading comprehension scores after being taught through the Jigsaw IV technique combined with Instagram Carousel as a post-reading task?
2. Which aspect of reading comprehension is the most affected after the implementation of Jigsaw IV technique combined with Instagram Carousel as a post-reading task?

## **1.3. Objective of the Research**

Regarding the research questions above, the objectives of this research are as follows:

1. To find out whether there is a significant difference in students' reading comprehension scores after being taught through the Jigsaw IV technique combined with Instagram Carousel as post-reading task.
2. To find out which aspect of reading comprehension is the most affected after the implementation of Jigsaw IV technique combined with Instagram Carousel as post-reading task.

## **1.4. Uses of the Research**

The researcher hopes that the findings of this research contribute significantly to the field of English language teaching, both theoretically and practically.

### **a. Theoretically**

This research is expected to contribute to and support the application of the Jigsaw technique in the field of English language teaching, particularly in field of reading comprehension.

b. Practically

To optimize the English reading learning process in the classroom, teachers can use and adapt this technique. For students, the implementation of this technique is expected to help them overcome reading difficulties and encourage active participation in discussions during reading lessons.

Finally, the researcher hopes that this research will positively impact the academic community, specifically in the area of English language learning. Additionally, this research is expected to provide a foundation for future studies, particularly in related disciplines.

### **1.5. Scope of the Research**

This research focuses on the effectiveness of using the Jigsaw IV technique in improving students' reading comprehension skills. Based on the Independent Curriculum for Grade XII English, the type of text used in this research is hortatory exposition. Instagram Carousel is used as a post-reading task, not as a medium for delivering material.

### **1.6. Definition of Terms**

The researcher defines several key terms to ensure conceptual clarity and prevent potential misunderstandings in the discussion of this research. These definitions are presented as follows:

a. Reading

Byrne (2004) states that reading involves the interaction between the brain and the eyes. The reader uses the eyes to recognize written symbols, such as letters, punctuation marks, and spaces, which are then processed by the brain into meaningful words, sentences, and paragraphs.

b. Reading Comprehension

Woolley (2011:15–34) argues that reading is a complex and active mental process of constructing meaning from a text. The main goal of reading comprehension is to achieve a thorough understanding of the content, not just to recognize the meaning of individual words or sentences.

c. Jigsaw Technique

According to Slavin (1987), Jigsaw is a cooperative learning technique that organizes students into small groups with divided learning tasks, where each student becomes an “expert” on a certain part of the material and is responsible for teaching it to the other group members.

d. Jigsaw IV model

According to Holliday (2000), Jigsaw IV is an adaptation of the Jigsaw cooperative learning strategy applied in secondary school history classes. Jigsaw IV was designed to address the weaknesses found in earlier versions, Jigsaw II and III, and is characterized by activities that include checking information in both expert groups and home groups after the sharing sessions.

e. Instagram Carousel

According to Alfonzo (2019), Instagram Carousel is a feature that consists of a series of photos or videos of more than ten slides that users can swipe through. This feature is generally used to present content in a sequential and concise manner, making it suitable for presentations such as book reviews, tutorials, or highlights of specific activities.

f. Hortatory Exposition Text

According to Afrilyasanti (2021), hortatory exposition is a spoken or written text that aims to explain to the listener or reader that something should or should not be done.

This chapter has covered the introduction of this research, including the background of the research, the research questions, the objectives of the research, the use of the research, the scope of the research, and the definitions of terms to provide a comprehensive overview of this research. The next chapter presents a literature review related to this research.

## II. LITERATURE REVIEW

This chapter discusses the theoretical review, which covers previous studies, the concept of reading, the Jigsaw IV technique, and Instagram Carousel. In addition, this chapter explains hortatory exposition texts and the procedures for applying the Jigsaw IV technique and Instagram Carousel in reading lessons. The chapter concludes with a presentation of theoretical assumptions and research hypotheses.

### 2.1. Previous Studies

Several previous studies serve as the foundation for designing this research, particularly those focusing on the implementation of the Jigsaw technique in improving students' reading comprehension. The researcher refers to five relevant studies that demonstrate the effectiveness of this technique across various contexts and educational levels.

The first study was conducted by Rashed (2022), entitled "*The Effectiveness of Implementing Jigsaw Technique on Undergraduate Students' Achievement in Reading Comprehension Skills*". This study aimed to evaluate the involvement of Jigsaw in the reading comprehension of first-year students of English as a Foreign Language (EFL) at Zawia University. Using a quasi-experimental design with pre- and post-tests, participants were divided into two groups: an experimental group taught using the Jigsaw technique and a control group taught using conventional methods. The findings show that the average final test score of the experimental group was 15.95, which was significantly higher than the control group's score of 12.20. Regarding reading sub-skills, this study reveals a significant improvement in students' ability to read quickly to understand main ideas, find specific details, infer the meaning of words from context, and understand synonyms and antonyms in texts. The study concluded that the Jigsaw technique effectively improved reading comprehension achievement, encouraged independent learning, promoted

collaboration among classmates, and encouraged active participation in the learning process.

The second study was conducted by Putriani et.al (2024), entitled “*Enhancing Students’ Reading Comprehension Through Jigsaw.*” This study involved 40 students from class VII E of SMP Negeri 12 Denpasar in the 2022/2023 academic year. Using descriptive texts as teaching materials, the study implemented a Classroom Action Research (CAR) design consisting of three phases: pre-cycle, Cycle I, and Cycle II. Each cycle had four processes: planning, action, observation, and reflection. The instruments used included a pre-test, post-tests, and a questionnaire. Although the score of post-test I slightly decreased, the score of post-test II increased significantly, with an average score of 90.07, and 38 students passed the minimum score. The findings showed significant progress in students’ ability to understand the meaning of the text and identify referential relationships within the text. Students gave positive responses to the use of the Jigsaw technique accompanied by visual aids, as seen from increased motivation and improved classroom behavior. This study concluded that the Jigsaw technique was proven effective in improving students’ reading comprehension and had a positive impact on students’ attitudes toward learning.

The third study, entitled “*A Jigsaw Technique as a Stimulant for Promoting Reading Comprehension among EFL High School Students,*” was conducted by Mada et al. (2024) and involved 60 students from class X of SMA Negeri 1 Botumoitto. This study used a quantitative approach with a one-group pre-test and post-test design without a control group. The text used as teaching material was report text. Before and after the intervention, students took a reading comprehension test. The results showed that in the pre-test, students obtained an average score of 45.55, while in the post-test, students obtained an average score of 74.00, indicating a significant improvement. Several skills showed improvement, including students’ ability to identify main ideas, supporting details, vocabulary, references, and draw conclusions from the texts they read. This study concluded that the Jigsaw technique improves EFL students’ reading comprehension, creates a positive classroom atmosphere, supports critical thinking, and encourages collaboration and communication within groups.

The fourth study was conducted by Wulandari (2025), entitled “*Enhancing Reading Skills in Narrative Texts Through the Jigsaw Strategy for Secondary School Students.*” The participants were 30 students from class VIII of SMP Negeri 17 Gresik, with a focus on narrative text comprehension. This study implemented a Classroom Action Research (CAR) design. Based on the findings, there was a significant improvement, as the average score increased from 62 in the pre-test to 77 in the post-test. In addition to the overall score improvement, students also demonstrated a better understanding of key aspects of narrative comprehension, such as character motivation, theme, and the ability to draw conclusions. This study noted an increase in students’ engagement and motivation during the learning process. The study concluded that the Jigsaw strategy was effective in improving students’ narrative reading comprehension as well as in increasing their active participation and motivation during the learning process.

The fifth study was conducted by Sarah and Afrizal (2021), entitled “*The Effect of Jigsaw Strategy in Teaching Reading of Recount Text: An Experimental Research at the First Grade of MAN 5 Bireuen.*” The subjects were 10th-grade students majoring in science at MAN 5 Bireuen who studied narrative texts. This study was conducted using an experimental design with one experimental group that received treatment through the Jigsaw strategy. The instruments used were pre-tests and post-tests to measure reading ability before and after treatment. The results showed a significant increase in the average student score, from 57.5 on the pre-test to 97.5 on the post-test. This study concluded that the Jigsaw strategy is effective in improving students' ability to read narrative texts.

Based on a review of five previous studies, the researcher concludes that the implementation of the Jigsaw technique has consistently demonstrated its effectiveness in improving students’ reading comprehension. However, there are notable differences between those studies and this research. Most previous studies employed text types such as descriptive, recount, narrative, and report texts, whereas this research specifically focuses on hortatory exposition texts, which involve a higher level of discourse complexity. In addition, this research applies the Jigsaw IV model combined with Instagram Carousel as a digital post-reading task

to strengthen students' comprehension and enhance their active participation in technology-integrated learning activities.

## **2.2. Reading**

This subsection discusses reading as one of the important skills in learning English. The discussion covers the definition of reading, the concept of reading comprehension, aspects of reading, types of reading, and reading techniques.

### ***2.2.1. Definition of Reading***

Reading is an interactive process in which the reader and the text interact in a way that leads to text comprehension. According to Byrne (2004), reading is an interaction between the brain and the eyes. A reader uses the eyes to recognize written symbols, including letters, punctuation marks, and spaces. The brain then processes these symbols into meaningful words, sentences, and paragraphs.

Furthermore, Ruddell (1994) explains that reading is a meaning-making process that occurs during or after interaction with a text. It is a synthesis of prior knowledge, past experience, textual information, the reader's attitude toward the text, and the social context that is remembered, occurring, or anticipated.

In line with this view, Lewin (2003) argues that reading is an activity of extracting meaning from a piece of text, involving interaction between visual perception and cognitive processes aimed at understanding the messages intended by the writer. Similarly, Gebhard (2006) states that reading is the process of obtaining meaning from written text within a social context by using both bottom-up and top-down approaches, as well as appropriate reading strategies and skills. According to Sutarsyah (2015), the bottom-up process views reading as a decoding activity that begins with recognizing letters, sounds, and words before the reader understands the meaning of the whole text. In contrast, the top-down process sees reading as an active process in which readers construct meaning by using their prior knowledge, experiences, and context to interpret the text. Furthermore, Sutarsyah (2015) states that reading is an interactive process because text comprehension does not depend only on bottom-up decoding or top-down background knowledge, but results from

the simultaneous interaction between the written text and the reader's language knowledge and world knowledge.

From these perspectives, it can be concluded that reading is a cognitive process in which readers construct meaning from a text by integrating the recognition of written symbols, prior experience, background knowledge, and comprehension strategies, thereby creating a comprehensive interaction between the text and the reader.

### ***2.2.2. Concept of Reading Comprehension***

Reading comprehension is the most important and fundamental aspect of the reading process, encompassing two main components: the ability to recognize written symbols and the ability to interpret the linguistic meaning contained in sentences. According to Zimmerman and Hutchins (2003), reading comprehension involves the process of decoding printed symbols on the page as well as understanding the language presented in sentence form.

Furthermore, Chacha and Javier (2024) state that reading comprehension requires critical thinking skills and deductive reasoning. A reader is considered to comprehend a text when he or she can identify the main ideas and detailed information within the text and then reconstruct these ideas in personal understanding, rather than merely copying or repeating the writer's words literally.

In this regard, Woolley (2011) argues that reading is a complex and active mental process of constructing meaning from a text. Therefore, the goal of reading is not simply to understand sentences or words in isolation, but to achieve a deep understanding of the text as a whole. In this process, readers use their linguistic knowledge, background knowledge, and experiences, along with complex frameworks such as text-based and situation models that interact with one another to construct meaning. In addition, skilled readers apply cognitive strategies to monitor, evaluate, and control the reading process.

Based on these perspectives, the researcher concludes that reading comprehension is a multidimensional cognitive skill that involves recognizing written symbols, activating background knowledge, applying critical thinking, and using

metacognitive strategies to construct a complete and coherent interpretation of a text.

### **2.2.3. Reading Aspects**

According to Nuttal (1982), there are five essential aspects of reading comprehension: the ability to identify main ideas, find specific information, recognize references, draw conclusions, and understand vocabulary in context.

#### **a. Main Idea**

The main idea is the central issue that forms the focus of a paragraph or text. Widyamartaya (1995) states that a paragraph consists of one or more sentences that are related to each other, where one sentence serves as the main sentence explaining the essence of the paragraph. In reading comprehension, students need to identify the sentence that summarizes the content of a paragraph in order to understand what the author is trying to convey. By understanding the main idea, students can more easily comprehend the entire content of the text.

#### **b. Finding Specific Information**

Specific information refers to details in a text, such as names, times, places, numbers, or particular events that are directly related to the content of the text. In the process of understanding a text, students need to pay close attention to these elements to clarify the overall meaning of the text. Understanding specific information indicates the reader's ability to recognize the key facts that construct the overall message of the text.

#### **c. Reference**

Reference is the use of words or phrases that relate to other elements in the text, usually serving to connect sentences and clarify the subject of the sentence. Students who understand referential elements can follow the author's train of thought more effectively because they can connect different parts of a paragraph. This understanding is important in maintaining coherence in the overall interpretation of the text.

#### **d. Inference**

Inference is the process of integrating the information presented with the reader's prior knowledge to identify the implied meaning of a given text. In

reading comprehension, students not only process explicit information but also construct a deeper understanding through reasoning.

e. Vocabulary

Vocabulary encompasses the words that students know and understand. Students' vocabulary plays a crucial role in the reading process. Harmer (2007) states that in reading, one of the essential tasks for readers is to understand the meaning of vocabulary and how it is used in context within a text. If students can recognize and understand the vocabulary in a reading text, they can interpret the text more effectively. A deep mastery of vocabulary enables students to understand the context within sentences, thereby enhancing their overall reading comprehension.

#### ***2.2.4. Types of Reading***

According to Patel and Jain (2010:117), there are four types of reading: intensive reading, extensive reading, aloud reading, and silent reading.

a. Intensive Reading

Intensive reading is a reading activity that involves a detailed and in-depth understanding of a text, usually carried out through various activities guided by a teacher. This activity aims to develop language learning, particularly in aspects of grammar, vocabulary, expressions, and speaking and writing skills. The purpose of intensive reading is to obtain specific knowledge from a text through analysis. In practice, students not only read the text but also engage in discussions, analysis, and writing activities based on the content of the text.

b. Extensive Reading

Extensive reading is the activity of reading a large amount of text with the main focus on enjoying the reading process and improving reading fluency. The materials used are easier and adjusted to students' interests, allowing them to read independently without the teacher's assistance. The purpose of extensive reading is to develop reading habits, enrich vocabulary, and gain knowledge through overall text comprehension, rather than focusing on linguistic details or structure.

c. Aloud Reading

Reading aloud involves reading written texts out loud and plays an important role in English language teaching at the elementary level because it helps students practice correct word pronunciation. However, reading aloud becomes less beneficial at the secondary level because many words in reading texts may be unfamiliar to students, making them difficult to pronounce. In addition, reading is generally a silent activity, except for certain types of texts, such as poetry or dialogue, that are intended to be read aloud.

d. Silent Reading

Silent reading is an important activity in English language teaching that aims to improve students' reading skills and help them absorb a large amount of information. In this activity, students read quietly without speaking or whispering to anyone, allowing them to focus and concentrate on the text. The benefits of silent reading include improved concentration, time efficiency because all students can read at the same time, encouragement to read naturally, and support for students in becoming active, fast, and accurate readers.

By considering the types of reading discussed above and the developmental stage of senior high school students, the researcher applies intensive reading and silent reading methods to improve students' reading comprehension during the implementation of the Jigsaw technique.

#### ***2.2.5. Reading Skill Techniques***

To comprehend texts effectively, students must apply various specific reading skills. These skills are important to develop because they contribute to creating a more meaningful and effective reading experience. In addition, strong critical thinking skills play a major role in the ability to comprehend the texts being read. Rashed (2022) identifies and elaborates four techniques related to reading comprehension skills that need to be considered, namely skimming, scanning, deducing the meaning of words from context, and developing awareness of synonyms and antonyms.

a. Skimming

According to Harmer (2007), students need to learn skimming, which is reading quickly to grasp the general understanding. Skimming is a reading technique that helps readers identify key sentences or keywords that provide an overview of the general idea of a paragraph or text. Through this technique, students can interpret texts more quickly, making the reading process more efficient.

b. Scanning

Different from skimming, scanning is a search technique that focuses on key words related to the specific content in a text. In this technique, a reader glances over the content of the text to find particular information. Harmer (2007) explains that in scanning, students are not required to read every word or sentence thoroughly.

c. Deducing Meaning of Words from Context

This skill refers to the ability to understand the meaning of a word or phrase by using contextual clues. These clues help readers comprehend unfamiliar words in a text by paying attention to the surrounding context. This process aims to increase students' awareness of unfamiliar words. Such awareness facilitates the reading process and supports students' cognitive development. Analyzing contextual clues can be described as reading to build meaning, where students make temporary guesses about the meaning of a word based on what they have read so far.

d. Developing Awareness about Synonyms & Antonyms

Knowledge of synonyms and antonyms is useful for further developing students' reading ability. Synonyms refer to words that have the same or similar meanings as other words, while antonyms refer to words or phrases that have opposite meanings.

In line with the discussion in this subsection, the researcher concludes that reading is a highly complex and active cognitive process in which the meaning of a text is constructed through the interaction between the text, prior knowledge, and comprehension strategies. In this research, intensive reading and silent reading are selected to support students' comprehension, while the reading techniques of

skimming, scanning, deducing the meaning of words, and awareness of synonyms and antonyms are used to facilitate students' reading learning.

### **2.3. Jigsaw Technique**

This subchapter provides an in-depth discussion of the Jigsaw technique, including its definition and the steps involved in its implementation.

#### **2.3.1. Definition of Jigsaw**

The Jigsaw technique was first developed by Elliot Aronson in 1971 at the University of Texas in the context of racial tensions among students. It was designed to encourage cooperation by dividing learning responsibilities into small groups. This technique is a formal type of cooperative learning method that emphasizes student collaboration in the process of building collective understanding through sharing information and learning responsibilities.

Aronson and Patnoe (1997) state that Jigsaw is a cooperative learning model in which each student has specific responsibilities within their home group to learn and master a part of a larger topic. Each student then meets with students from different groups who are studying the same part (expert group) to explore and discuss the content of that section. After that, the students return to their home groups and teach the material they have learned to their group members, allowing all members to understand the topic thoroughly, similar to putting together the pieces of a puzzle.

Furthermore, Namaziandost et al. (2020) state that Jigsaw is a type of cooperative learning activity in which students communicate with each other to manage and integrate new information with existing knowledge from other group members. In other words, each student holds a key piece of information and is responsible for conveying that information to the group, thereby fostering a positive sense of interdependence.

Finally, Ra'no (2025) states that Jigsaw has the potential to be a powerful and flexible technique for developing reading skills through cooperative learning. This technique not only improves reading comprehension and skills but also enhances critical thinking, communication, and social skills among learners. This is because

Jigsaw divides a text into smaller, more manageable parts and promotes a collaborative learning environment.

From the explanation above, the researcher concludes that the Jigsaw technique is a cooperative learning method that emphasizes the distribution of learning responsibility among group members. Each student acts as an expert in a specific part of the text and then teaches their understanding to the home group. Through interaction in expert groups and the teaching process in home groups, the Jigsaw technique promotes positive interdependence, active communication, and reinforcement of comprehension. This technique effectively improves students' understanding of learning materials as well as their critical thinking, reading, and social skills.

Up to the present time, six types of Jigsaw have been developed in the field of education: 1) Jigsaw (Aronson, 1978); 2) Jigsaw II (Slavin, 1987); 3) Jigsaw III (Stahl, 1994); 4) Jigsaw IV (Holliday, 2000); 5) Reverse Jigsaw (Hedeem, 2003); and 6) Subject Jigsaw (Doymus, 2007). These six variations share the same fundamental principle, which is collaboration-based learning, but differ in practical applications, such as the sequence of activities or evaluation mechanisms (Hedeem, 2003; Doymus, 2008).

In this research, the researcher employed the Jigsaw IV model to improve students' reading comprehension. The strength of the Jigsaw IV cooperative learning model lies in the initial teacher explanation, the use of two quizzes to check the accuracy of students' information acquisition, and a final session for clarifying material that remains unclear.

According to Holliday (2000), Jigsaw IV is an adaptation of the Jigsaw cooperative learning strategy applied in secondary school history classes. Jigsaw IV was designed to address the weaknesses found in earlier versions, Jigsaw II and III, and is characterized by activities that include checking information in both expert groups and home groups after the sharing sessions.

The main characteristic of Jigsaw IV is the inclusion of comprehension checks in both expert groups and home groups before students share the information they have obtained with other students. This strategy minimizes misinformation and ensures that students understand what they read and discuss.

### ***2.3.2. The Steps of Jigsaw IV***

According to Holliday (2000), there are nine steps in applying the Jigsaw IV technique in the classroom. Each step is designed to build collaboration, individual responsibility, and a comprehensive understanding of the learning material. The steps are as follows:

a. Introduction or Set Induction

At this stage, the teacher divides students into home groups consisting of four or five members. The group members are arranged to be as heterogeneous as possible in terms of gender, ethnicity, race, and academic ability. Then, the teacher introduces the learning topic by discussing it with the students. The purpose of this stage is to activate students' prior knowledge before they engage in deeper text discussion activities.

b. Distribution of Expert Sheets

The teacher distributes task sheets containing a paragraph from the text, which has been divided according to the number of members in each group. Each student in the home group receives a different paragraph, which later becomes the focus of learning in the expert group.

c. Expert Group Discussion

Students move to expert groups consisting of members from different home groups who study the same paragraph. In these groups, students discuss and exchange ideas to explore the content of the paragraph, share their understanding, and gain a clear comprehension of the main information that they will later teach to their home group members.

d. Quiz in Expert Groups

After the discussion is completed, each expert group works on a quiz based on the task sheet they have studied. This quiz aims to measure how well each student understands the paragraph that has been discussed. The teacher

checks the quiz answers to ensure that the students are ready to teach the paragraph content to their home group members.

e. Teaching in Home Groups

Students return to their home groups and are assigned to teach their group members the paragraph they have mastered in the expert group. At this stage, each member presents the information from their paragraph clearly and systematically, so that all group members can understand the text comprehensively as a unified idea.

f. Quiz in Home Groups

After each home group member has taught the material to the others, the teacher gives a quiz to each group. The purpose of this quiz is to assess the group's understanding of the overall content of the text. In addition, this activity encourages discussion and collaboration among group members in answering the questions.

g. Whole-Class Review

The teacher reviews the overall understanding of all student groups regarding the discussed material through various enjoyable reinforcement activities, such as Team Jeopardy, Quiz Bowl, or Team Game Tournament, which involve competition among groups. These activities not only strengthen conceptual understanding but also build teamwork and active student participation in the classroom.

h. Individual Assessment

At this stage, students are required to take an individual test to assess their personal mastery of the material. This assessment emphasizes the importance of individual responsibility in the cooperative learning process and serves as an indicator of how well each student understands the core of the text that has been read and discussed.

i. Remedial (Optional)

If the results of the individual assessment indicate that most students still do not fully understand the content of the text, the teacher may conduct remedial activities. These activities may include repetition or additional

explanations of the parts of the text that are not yet well understood, ensuring that the learning objectives can be achieved optimally.

Based on the steps of the Jigsaw IV model described above, the researcher adopted almost all of the learning steps proposed by Holliday (2000), including the introduction or set induction, distribution of expert sheets, expert group discussion, expert group quiz, teaching in home groups, group quiz, whole-class review, and individual assessment. The remedial step was not conducted in this research due to time constraints during the learning process.

#### **2.4. Instagram Carousel as Post Reading Task**

Instagram is one of the most widely used social media platforms, especially among teenagers and students. Instagram is a photo and video sharing social networking service owned by Meta Platforms. This platform allows users to upload photos and short videos, add digital filters, and share them publicly or privately with approved followers. Interactions between users can occur through features such as likes, comments, and direct messages. Instagram also provides various key features, such as Feed, Stories, IGTV, and Reels, which allow users to express themselves visually. This platform is not only used as a means of communication and entertainment, but is also increasingly being used in education due to its visual, interactive, and contextual learning environment.

One of the main features of Feed that is prominent and widely used in education is the carousel or Instagram slide. According to Alfonzo (2019), Instagram Carousel is a feature that consists of a series of photos or videos of more than ten slides that users can swipe through. This feature is generally used to present content in a sequential and concise manner, making it suitable for presentations such as book reviews, tutorials, or highlights of specific activities.

In the context of reading, Instagram Carousel can serve as a medium for delivering material or as a tool for students to summarize what they have read creatively. In this research, Instagram Carousel is used as a reflective and expressive tool for students to reconstruct the main ideas from the text they have read. After completing the reading and discussion process in the Jigsaw IV activity, students are asked to

present their understanding in the form of a carousel containing text summaries, opinion statements, interpretations of arguments, and personal responses to the issues discussed in the text, especially hortatory exposition texts. By rearranging the text content into a communicative slide format, students are encouraged to think critically, select essential information, and present it concisely and clearly. This process not only deepens their understanding of the structure and content of the text but also improves students' digital literacy and creativity skills.

In this research, the researcher uses Instagram Carousel as a post-reading task, which is theoretically supported by the Output Hypothesis proposed by Swain (1985). This theory states that in the process of language learning, producing language (output) is as important as receiving language (input). Through the carousel task, students not only repeat the content of the reading text, but also process and present the information in a different and more communicative way. This process helps students gain a deeper understanding of the text.

## **2.5. Hortatory Exposition Text**

Expository text is a type of text that aims to explain, explore, or describe a topic with the purpose of presenting information objectively, without forcing the reader to accept the perspective presented (Fatahillah et al., 2023).

Generally, there are two types of exposition texts: analytical exposition and hortatory exposition. In this research, the researcher chose to use hortatory exposition because this type of text aligns with the materials taught in the Independent Curriculum for the senior high school level.

According to Afrilyasanti (2021), hortatory exposition is a spoken or written text that aims to explain to the listener or reader that something should or should not be done. The social function of this text is to persuade the reader or listener to agree with a certain action or viewpoint through the presentation of arguments and recommendations. This type of text is commonly found in scientific books, journals, newspaper articles, academic speeches, and research reports, and is popular among academics and the scientific community.

In hortatory exposition texts, the writer presents ideas about an issue, supported by existing evidence and facts, and then provides suggestions or recommendations for the reader to take action regarding the issue. Therefore, this type of text is very suitable for reading comprehension learning, as it trains students' critical thinking regarding the arguments presented, evaluates the effectiveness of the evidence, and considers how the reader might take further steps concerning the issue.

### ***2.5.1. The Generic Structure of Hortatory Exposition Text***

The structure of a hortatory exposition text consists of thesis, arguments, and recommendation.

#### **a. Thesis**

This structure serves as the introduction of a hortatory exposition text. At this stage, the writer presents the main issue or topic to be discussed and expresses their attitude, opinion, or perspective regarding the issue. Usually, the thesis statement is written clearly and persuasively, as its main purpose is to convince the reader to agree with the writer's point of view.

#### **b. Arguments**

Arguments contain a series of reasons, logical explanations, and supporting facts that strengthen the writer's position regarding the issue. Each argument is elaborated in depth to effectively convince the reader. In a hortatory exposition text, arguments play a very important role because this is where ideas are explained in detail and supported by factual evidence. There may be more than one argument, which are arranged coherently, starting from the most general to the strongest or most convincing, and supported by facts.

#### **c. Recommendation**

Recommendations are the final structure of a hortatory exposition text and serve as the conclusion. In this part, the writer offers several recommendations or specific next steps that can be taken by the reader, the community, or relevant parties, based on the issue and opinions previously presented.

In this research, the researcher explained the three structures together with the students, and identified these structures in the texts during the treatments.

### **2.5.2. Language Features of Hortatory Exposition Text**

Hortatory exposition texts have several linguistic features that strengthen the writer's arguments and make them more persuasive to readers. These features include the use of the simple present tense to express opinions and facts, the use of abstract nouns such as *belief* and *consideration*, and the use of action verbs and thinking verbs to describe actions and thoughts. Modal verbs, such as *should*, *must*, and *certainly*, are used to express degrees of certainty or obligation. Temporal connectives, such as *firstly*, *secondly*, and *then*, are used to present reasons in a logical sequence. Evaluative adjectives, such as *important* and *valuable*, indicate the significance of the issues discussed. The use of passive sentences also reflects the formality of the text by emphasizing actions.

### **2.6. Procedures of Teaching Reading Comprehension Through the Jigsaw IV Technique Combined with Instagram Carousel as Post-Reading Task**

In this sub-section, the researcher explains the learning procedure using Jigsaw IV combined with Instagram Carousel as a post-reading task during the implementation of this research. The sequence of activities was designed and adapted from the steps of the Jigsaw IV technique described by Holliday (2000), which the researcher then combined with an additional step of a post-reading task using Instagram Carousel to strengthen students' understanding of the text content.

#### **a. Pre-Activities**

In the pre-activities, the teacher prepares students mentally and physically to participate in the lesson by creating a positive and enjoyable classroom atmosphere, encouraging focus and curiosity about the topic to be discussed, and presenting the learning objectives to be achieved. This stage consists of five steps:

1. The teacher opens the lesson with a greeting and warmly welcomes the students.
2. The teacher invites the students to pray according to their respective religions and beliefs as a meaningful opening.
3. The teacher takes attendance to record students' presence and ensure the participation of all students.

4. The teacher provides a trigger question to stimulate students' curiosity about the topic of the text to be studied.
5. The teacher presents the learning objectives for the day and emphasizes their relevance to everyday life.

b. While Activities

In the while-activities, the teacher guides students through the core learning process by delivering the reading material, facilitating collaboration and discussion using the Jigsaw IV technique, and assigning a digital project using Instagram Carousel as a post-reading task. This stage consists of four steps as follows:

1. Introduction to the Material

- a) At this step, the teacher introduces the hortatory exposition text by explaining its features, analyzing example texts, and guiding students to clearly understand the text structure.
- b) The teacher explains the definition of hortatory exposition text, its generic structure (thesis – arguments – recommendations), and the language features used in the text.
- c) The teacher distributes examples of hortatory exposition texts and conducts reading and analysis activities together with the students. The researcher identifies the parts of the text together with the students and explains their structures.
- d) The students are given the opportunity to ask questions about any parts of the text they do not understand.
- e) The researcher asks the students to orally recall the structure of the text to ensure their understanding.

2. Group Formation

In this step, the researcher organizes the students into home and expert groups to prepare for the Jigsaw IV learning process.

- a) The students are divided into home groups using a wheel generator platform, consisting of five students in each group.

- b) Each member in the home group is numbered from 1 to 5 to form expert groups. Students with the same number from different home groups discuss the same paragraph of the text in depth.
- c) After the division, the students move to their expert groups according to their assigned numbers.

### 3. Jigsaw IV Activities

In this step, the students engage in collaborative learning through the Jigsaw IV technique to discuss and share information from their expert groups.

#### a) Distribution of Expert Sheet

The researcher distributes an expert sheet containing a paragraph of a hortatory exposition text to each student to study in the expert group.

#### b) Discussion in Expert Groups

Students discuss the parts of the material they received in depth within their groups. The goal is to achieve a shared understanding of the key information that will be conveyed to their home groups. During this process, students may ask the teacher questions if they encounter parts that are difficult to understand. The teacher also monitors the discussion while it takes place.

#### c) Mini Quiz for Expert Groups

After the discussion, the teacher gives a short quiz to the expert groups to assess the students' understanding before they present the information they have learned to their home groups. The quiz covers the students' ability to identify specific information, main ideas, references, inferences, and vocabulary.

#### d) Teaching in Home Groups

The students return to their home groups and take turns presenting the results of their expert group discussions. Each student is responsible for ensuring that all members of the group understand the entire content.

#### e) Group Quiz

After the session of teaching what is learned from the expert group to the home group, the researcher gives the home groups a short quiz to gauge their overall understanding.

f) Whole-Class Review

The researcher leads a review session to reinforce overall comprehension. As suggested by Holliday (2000), at this stage the researcher conducts a group quiz game, namely Teams-Games-Tournament (TGT). The winner group will come to the front of the class and explain the content of the text they have read.

g) Individual Mini Quiz

As a final form of evaluation, the students complete an individual quiz to assess how well they have mastered the entire material.

4. Digital Project: Instagram Carousel as Post-Reading Task

After the lesson, each student is asked to create a digital project in the form of an Instagram Carousel that summarizes the content of the hortatory exposition text they have learned. Students are asked to create three slides containing the title, summary, and their opinions, such as comments, agreements, or disagreements. The completed carousel is uploaded to the students' class Instagram account as part of the final assessment.

c. Post-Activities

In the post-activities, the researcher leads the students in reflecting on the lesson, addressing challenges, and closing the session with appreciation and a farewell.

1. The teacher and students together reflect on the learning process and summarize the main points of the material that have been studied.
2. The teacher provides students with the opportunity to share any challenges or difficulties they encountered during the lesson.
3. The teacher appreciates all students for their participation, cooperation, and effort throughout the learning activities.
4. The teacher closes the lesson with a prayer and a farewell greeting as a form of appreciation for the time spent together that day.

In conclusion, the procedure of integrating the Jigsaw IV technique with Instagram Carousel provides a pedagogical framework aimed at promoting deeper text comprehension through student collaboration and creative reinforcement of the reading material.

## **2.7. Advantages and Disadvantages**

In this sub-section, the researcher discusses the advantages and disadvantages of the Jigsaw technique and Instagram as learning media.

### ***2.7.1. Advantages and Disadvantages of Jigsaw Technique***

According to Aronson (2008) and Maden (2010), there are several advantages of the Jigsaw technique in learning. First, the Jigsaw technique builds students' self-confidence because they act as "experts" in their groups and actively explain the material to their peers. Second, this technique encourages active participation and meaningful discussion in small groups, which is difficult to achieve in whole-class discussions. Third, students gain a deeper understanding because they must comprehend the material thoroughly before teaching it to others. Fourth, Jigsaw develops English language skills since students have to convey information verbally and clearly. Fifth, this method fosters independent learning because students do not only rely on the teacher but also actively seek and share information with their peers.

In addition to its advantages, the Jigsaw technique also has some disadvantages. According to Namaziandost et al. (2020), there are three main weaknesses in the implementation of this technique. First, Jigsaw tends to be time-consuming because students have to move and learn in two types of groups: expert groups and home groups. Second, some students find it difficult to follow the flow of the complex activities, which can lead to confusion during the learning process. Third, not all students are able to understand or master the reading section they are responsible for, which can hinder the effectiveness of peer teaching within the group.

### ***2.7.2. Advantages and Disadvantages of Instagram Carousel***

The use of Instagram Carousel in learning has several advantages that support the students' learning process. First, this feature encourages creativity because students can design the presentation of the material visually and attractively, making the learning process more enjoyable and personal (Astari et al., 2022). In addition, the slide format allows information to be delivered gradually and systematically, making it easier for students to understand the material in a more structured way (Amanda et al., 2024). Since Instagram is a popular social media platform among

teenagers, its use in learning feels more relevant to their daily lives, naturally increasing student engagement (Amanda et al., 2024). Moreover, visual presentations in carousels have been shown to improve students' memory of the information learned (Liow et al., 2021).

However, there are some limitations in using Instagram Carousel as a learning medium. One major challenge is the need for a stable internet connection, which can be a barrier for students with limited access to technology (Fujiawati, 2021). In addition, because Instagram is a social media platform filled with various types of content, students can be distracted by materials outside the learning context (Amanda et al., 2024). Finally, not all students have an Instagram account or choose not to use it, which may create unequal access and reduce inclusivity in learning activities (Astari et al., 2022).

## **2.8. Theoretical Assumptions**

One of the difficulties encountered by students in learning English at the secondary education level is their limited ability to comprehend English reading materials. This issue arises not only from students' vocabulary deficiencies or lack of understanding of text structures but also from their low cognitive and affective involvement during the learning process. Activities such as independent reading and the lack of opportunities for discussion or collaboration often make students feel bored and unmotivated to engage deeply with the text.

In this regard, the researcher assumes that the application of a cooperative learning model using the Jigsaw IV technique can be an effective approach to improving students' reading comprehension. This technique allows students to take an active role in the learning process as "material experts," who are responsible for understanding and explaining a specific part of the text to other members of the group. Interaction within the group is expected to promote deeper processing of information, which in turn strengthens students' overall comprehension of the text.

Furthermore, the integration of digital tasks through Instagram Carousel at the post-reading task serves as an additional stimulus that is relevant to students' digital habits. As a visual medium, this platform facilitates students in rereading and

reconstructing their understanding of the text into engaging and communicative presentations, which encourages their reflection and the process of meaning construction. Therefore, the combination of the Jigsaw IV technique and Instagram Carousel has the potential to enhance students' intrinsic motivation, enrich their learning experience, and improve reading comprehension in a creative and collaborative manner.

## **2.9. Hypothesis**

The hypothesis of this research can be formulated as follows:

“There is a significant difference in students' reading comprehension scores after being taught through the Jigsaw IV technique combined with Instagram Carousel as a post-reading task.”

This chapter has summarized the relevant theories and concepts applied in this research. These theories serve as a guide to help focus the study. In the following chapter, the researcher will explain the research methodology used in this research.

### III. METHODOLOGY

This chapter describes the research methods, which include the research design, variables, data sources, data collection techniques, research instruments, instrument try-out, research procedures, scoring techniques, data analysis, and concludes with hypothesis testing.

#### 3.1. Research Design

This research used a quantitative quasi-experimental approach with a one-group pretest–posttest design. Students took a pretest before the treatment phase and a posttest afterward. The research design is illustrated as follows:

**T1 X T2**

(Setiyadi, 2018)

T1: Refers to the pretest conducted before the researcher taught the hortatory exposition text using the Jigsaw IV technique combined with Instagram Carousel, aimed at measuring students' performance prior to the treatment.

X: Refers to the treatment, during which the researcher taught the hortatory exposition text through the Jigsaw IV technique combined with Instagram Carousel to improve students' reading comprehension.

T2: Refers to the post-test conducted after the researcher taught the hortatory exposition text using the Jigsaw IV technique and Instagram Carousel as a post-reading task, to assess the extent of improvement in students' reading comprehension after the treatment.

### **3.2. Variables**

In this research, understanding the roles of dependent and independent variables is essential to identify the relationships among the factors involved. Arikunto (2013) states that a variable is a component or element of research that can change and becomes the focus of investigation in a study. Variables can take the form of values, qualities, attributes, or characteristics of an object or phenomenon being studied.

A dependent variable is the variable that is measured to observe changes resulting from the influence of other variables. Meanwhile, an independent variable is a factor that is manipulated or controlled and examined to determine its effect on the dependent variable. This section explains both variables in the context of this research as follows:

a. Independent Variable (X)

The independent variable is the factor that is manipulated or controlled to observe its effect on the dependent variable. In this research, the independent variable is the combination of the Jigsaw IV technique and Instagram Carousel as a post-reading task.

b. Dependent Variable (Y)

The dependent variable is the variable that is measured to observe changes resulting from the influence of the independent variable. In this research, the dependent variable is the students' reading comprehension.

### **3.3. Data Sources**

This section explains the data sources used in this research, as well as the research setting, population, and sample, which serve as the main foundation of the entire research. These elements are essential in determining the boundaries and situational context of the research.

### **3.3.1. Population**

According to Arikunto (2013), a population is understood as the total number of research subjects or the entire group of subjects, which may include people, phenomena, values, objects, or events that serve as research data. In this research, the population consisted of twelfth-grade students at SMAN 1 Tegineneng. There were five classes, with approximately 36 students in each class.

### **3.3.2. Sample**

According to Setiyadi (2018), a sample in research refers to a group of individuals selected to represent the entire population within the target group. In this research, the researcher selected one class use cluster sampling technique, namely class XII-2, consisting of 36 students, as the research sample. These students were active learners at SMAN 1 Tegineneng.

## **3.4. Data Collecting Techniques**

Before the treatment was given, a pre-test was conducted. The students completed 40 multiple-choice questions, each with four options: a, b, c, and d, about hortatory exposition texts. The purpose of the pre-test was to determine the students' reading comprehension ability.

### **a. Pre-test**

Before the treatment was given, a pre-test was conducted. The students completed 40 multiple-choice questions, each with four options: a, b, c, and d, about hortatory exposition texts. The purpose of the pre-test was to determine the students' reading comprehension ability.

### **b. Post-test**

A post-test was conducted after the treatment was given to the students by the researcher, using the Jigsaw IV technique combined with Instagram Carousel as the post-reading task. In the post-test, the students once again answered 40 multiple-choice questions identical to those in the pre-test. The post-test was conducted to observe changes in the students' reading comprehension ability, and it was used together with the pre-test to measure the effectiveness of the learning technique applied by the researcher.

This sub-section has described the data collection techniques using pre-tests and post-tests. These techniques were conducted to measure changes in the students' reading comprehension ability and to relate it to the effectiveness of the technique applied by the researcher.

### **3.5. Instrument of the Research**

The instrument used in this research was a reading comprehension test in the form of an objective test. The test consisted of multiple-choice questions with four answer options (a, b, c, and d). There was a total of 40 questions, which had been tested for validity and reliability, with an allocated time of 60 minutes. The same instrument was used in both the pre-test and post-test stages.

The test aimed to measure students' reading comprehension ability, specifically in understanding hortatory exposition texts. The aspects assessed in the test included the main idea, specific information, references, inferences, and vocabulary in context. Each item was developed based on these aspects to reflect the students' overall performance in reading comprehension.

The same test was administered in the pre-test and post-test to obtain accurate data on students' development or changes in reading comprehension ability after the treatment. The treatment involved the implementation of the Jigsaw IV technique combined with Instagram Carousel as a post-reading task. By comparing the results of both tests, the researcher was able to determine the effectiveness of the technique applied in improving students' reading comprehension of hortatory exposition texts.

### **3.6. Try-Out of the Research Instrument**

Before the research instrument was used in the main data collection, the researcher conducted a try-out process. The purpose of this try-out was to assess the quality of the developed test, particularly in terms of validity, reliability, difficulty level, and discriminating power. This step was essential to ensure that the instrument was valid and reliable in measuring students' reading comprehension ability objectively.

The instrument try-out was conducted in class XII-5, which was not part of the experimental group. This class was selected to avoid any influence on the main data collection and to maintain the objectivity of the research results. The instrument consisted of multiple-choice questions with four answer options: A, B, C, and D. A total of 50 questions were administered to this class, which was considered to have better English proficiency than the general population. The questions were developed based on key reading aspects, including identifying the main idea, finding specific information, making inferences, recognizing references, and contextual vocabulary in hortatory exposition texts.

Based on the try-out described above, this sub-section presents an analysis of the research instrument. The analysis includes the procedures carried out to test the validity and reliability of the instrument, as well as the results of the item analysis. This was done to ensure that the instrument could measure students' reading comprehension ability accurately and consistently.

#### **3.6.1. *Validity***

Validity is one of the important characteristics of a good research instrument. According to Nurweni (2019), the term validity comes from the word valid, which means correct or accurate. A test is considered valid if it truly measures what it is intended to measure. In this research, the researcher evaluated the validity of the instrument through two types of validity; content validity and construct validity.

a. Content validity

According to Nurweni (2019), content validity refers to the extent to which test items represent the material that should be measured. In this research, the reading test is prepared based on the basic competencies and indicators outlined in the curriculum for twelfth-grade students, specifically the hortatory exposition text material. The test items cover various aspects of reading comprehension, such as main idea, specific information, vocabulary, inference, and reference of the hortatory text. Therefore, this instrument can be considered to have good content validity, as it reflects the material content in accordance with the learning objectives.

**Table 3.1 Specification of Content Validity**

<b>Reading Aspects</b>	<b>Item Numbers</b>	<b>Total Questions</b>	<b>Percentage %</b>
Main Idea	1,6,8,13,16,21,24,32,39	9	22,5%
Detail Information	2,3,9,10,14,17,25,26,33	9	22,5%
Inference	4,15,18,19,27,34,35,40	8	20%
Reference	7,11,22,28,29,36,37	7	17,5%
Vocabulary	5,12,20,23,30,31,38	7	17,5%
<b>Total</b>		<b>40</b>	<b>100%</b>

Source: Appendix 11 Questions for Pre-Test

b. Construct validity

Construct validity refers to the extent to which a test reflects the theoretical constructs or abstract concepts to be measured. According to Nurweni (2019), construct validity means that the items in the test are developed based on the theory underlying the skills or abilities being assessed. In this research, the reading comprehension test is developed based on theories related to reading skills, particularly focusing on aspects such as identifying main ideas, locating specific information, identifying references, making inferences, and understanding vocabulary in context. Each item is designed to measure students' reading comprehension skills conceptually, therefore the test has a strong theoretical foundation.

### 3.6.2. Reliability

Reliability is an important indicator in assessing the quality of a research instrument. According to Gronlund (1981), reliability is a measure of the consistency of results obtained from a test or assessment instrument. Gronlund states that reliability provides the consistency that allows validity to be achieved.

In this research, the split-half method was used to measure the reliability of the reading comprehension test. The split-half technique involved dividing the test items into two equal parts, typically by separating the odd-numbered and even-numbered items. Both halves were then scored separately, and the correlation between the two sets of scores was calculated.

To measure the coefficient of reliability between the odd and even groups, the Pearson Product Moment formula was used as follows:

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

Where:

$r_{xy}$  = the correlation coefficient between odd and even halves of the test

$n$  = is the total number of students who took the test

$x$  = score of odd numbers

$y$  = score of even numbers

The Pearson Product Moment correlation was used to calculate the correlation between the odd and even halves of the test. The obtained correlation coefficient was then adjusted using the Spearman–Brown prophecy formula to estimate the reliability of the whole test. The formula is as follows:

$$r_k = \frac{2rl}{1 + rl}$$

(Hatch & Farhady, 1982: 257)

Where:

$r_k$  = the reliability of the test.

$rl$  = the reliability of half test.

The classification of reliability coefficients is based on the following criteria:

0.80 – 1.00	Very High
0.70 – 0.79	High
0.60 – 0.69	Moderate
0.50 – 0.59	Low
< 0.50	Very Low

A reliability coefficient value of 0.70 or higher indicates that a test is sufficiently reliable to be used as a research instrument in both the pre-test and post-test. This classification helps the researcher determine the consistency of the test instrument. A high reliability coefficient shows that the test items consistently measure students' reading comprehension skills, thereby strengthening the validity of the test.

### **3.6.3. Item Analysis**

This sub-section discusses the item analysis conducted on the reading comprehension instrument used in this research. The analysis focused on the level of difficulty and the discrimination power of each item to determine the extent to which the test measured students' abilities and distinguished between students with high and low ability.

#### **1. Level of Difficulty**

Level of difficulty is one of the essential aspects in analysing the quality of test items. According to Heaton (1975), the level of difficulty indicates how well a test item can be answered correctly by the test takers. A good test item is one that is neither too easy nor too difficult so that it can optimally differentiate students' abilities. Therefore, item difficulty helped the researcher determine whether a test item was appropriate for the average ability level of the participants.

In this research, the item difficulty was analysed using the following formula:

$$LD = \frac{U + L}{N}$$

(Heaton, 1975)

Where:

- LD = Level of difficulty
- U = Number of students in the upper group who answered correctly
- L = Number of students in the lower group who answered correctly
- N = Total number of students in both upper and lower groups

The difficulty index ranges from 0 to 1. The following interpretation is commonly used.

- $LD < 0.30$  = the item is considered difficult
- $0.31 \leq LD \leq 0.70$  = the item is considered moderate
- $LD \geq 0.71$  = the item is considered easy

By analyzing the difficulty level using this formula, the researcher was able to assess the extent to which each test item proportionally reflected the reading difficulty level of the students.

## 2. Discrimination Power Test

Discrimination power is an important indicator in evaluating the quality of test items, as it shows the extent to which an item can distinguish between high-achieving and low-achieving students. According to Shohamy (1985), discrimination power refers to the ability of an item to differentiate between students in the upper group and students in the lower group based on their overall performance on the test.

In the context of this research, the discrimination power of the items was analysed to ensure that the reading test items could effectively identify differences in the reading abilities of twelfth-grade students before and after receiving the treatment. Items with high discrimination power were considered more effective, as they could measure students' abilities more accurately.

The researcher used the following formula to calculate the discrimination power of each item:

$$DP = \frac{U - L}{\frac{1}{2}N}$$

(Shohamy, 1985:81)

Where:

DP: Discrimination Power

U: the number of students in the upper group who answered the item correctly

L: the number of students in the lower group who answered the item correctly

N: the total number of students who took the test

Classification of discrimination power:

0.40 – 1.00	Very good item
0.30 – 0.39	Good item
0.20 – 0.29	Fair item
0.00 – 0.19	Poor item (revise)
Negative value	Very poor (discard)

By analyzing the discrimination power using this formula, the researcher was able to ensure that each test item in the instrument functioned effectively to distinguish students' ability levels.

In conclusion, the try-out subsection is an important step in evaluating and refining the research instrument in terms of validity, reliability, difficulty level, and discrimination power. Through this try-out, the researcher refined the instrument before it was applied in the pre-test and post-test for the experimental class, ensuring more accurate research results.

### **3.7. Procedures of the Research**

The following is the procedure that was implemented by the researcher during the research.

#### **a. Identifying the problem**

The researcher identified that the problem in students' reading comprehension was caused by the lack of vocabulary, ineffective reading strategies, and limited peer discussion. In practice, students tended to read only to answer teacher-provided questions, rather than to understand the content of the text thoroughly. This resulted in students focusing more on finding answers than on building comprehension.

b. Selecting and defining the population and sample

The population of this research consisted of all twelfth-grade students of SMA Negeri 1 Tegineneng. The sample was students of class XII-2, selected purposively based on the English teacher's recommendation, academic considerations, and time availability.

c. Choosing the instruments and materials

The instrument that was used in this research was a reading test in the form of multiple-choice questions consisting of 40 items. The material used in the test was hortatory exposition texts aligned with the twelfth-grade independent curriculum.

d. Conducting the try-out test

The research instrument was tested through a try-out in class XII-5, which was not part of the experimental group, to examine its quality in terms of validity, reliability, level of difficulty, and discrimination power. This step aimed to ensure that the instrument was valid and reliable before being used in the pre-test and post-test for the main research.

e. Administering the pre test

Before the treatment was given, students took a pre-test to measure their initial ability in understanding hortatory exposition texts. This test served as the main basis for assessing the effectiveness of the learning technique applied by the researcher.

f. Conducting the treatments

After the pre-test was conducted, the researcher carried out the treatment by implementing the Jigsaw IV technique. In this process, the students worked collaboratively in groups, discussed, and exchanged information to build understanding of the content of the text. Instagram Carousel was used as a post-reading task to reinforce their comprehension of the text.

g. Administering the post test

After all treatment sessions were completed, the students took the post-test, which used the same questions as the pre-test. The purpose was to measure the development and differences in their reading comprehension scores after the treatment.

h. Analyzing the data

The data from the pre-test and post-test were analyzed using statistical tests to determine the effectiveness of the Jigsaw IV technique and the use of Instagram Carousel as a post-reading task on students' reading comprehension

i. Interpreting the findings

The results of the data analysis were interpreted to determine whether the implemented learning technique had a significant effect on students' reading comprehension. These findings were used to answer the research questions and draw the final conclusions of this research.

This procedure was designed and used as a guideline for implementing the learning strategy using the Jigsaw IV technique combined with Instagram Carousel as a post-reading task, which was intended to help improve students' reading skills.

### 3.8. Scoring System

In this research, a scoring system was used to calculate students' reading test scores for both the pre-test and post-test. Each student's score was calculated based on the number of correct answers out of the total number of questions. According to Arikunto (2021), to obtain the score for an objective test, the number of correct answers can be multiplied by 100 and then divided by the total number of questions.

The formula is as follows:

$$S = \frac{R}{N} \times 100$$

(Arikunto, 2021:262)

Where:

S = Final score

R = Number of correct answers

N = Total number of questions

By using this formula, the researcher was able to determine the students' reading comprehension scores, which facilitated the data analysis process and the comparison of pre-test and post-test results.

### 3.9. Data Analysis

After collecting the data from the pre-test and post-test, the researcher analyzed the data through the following steps:

a. Scoring the students' pre-test and post-test results

The researcher assigned scores based on the number of correct answers out of the 40 multiple-choice questions on the reading comprehension test. These scores served as the basis for analyzing the development of students' reading abilities.

b. Organizing the reading comprehension test scores

The pre-test and post-test scores were systematically organized to facilitate comparison and further analysis.

c. Calculating the mean scores of the pre-test and post-test

The researcher calculated the mean score of each test to obtain an overview of the students' abilities before and after the treatment. The formula used was as follows:

$$M = \frac{(\sum x)}{N}$$

(Arikunto, 2021:288)

Where:

M = Mean score

$\sum x$  = Total score of all students

N = Number of students

d. Drawing conclusions by comparing the mean scores of the pre-test and post-test

The mean scores of the pre-test and post-test were compared to determine whether there was an improvement in students' reading comprehension scores after the treatment.

e. Measuring the improvement in students' reading comprehension

The researcher calculated the students' difference between the post-test mean score ( $X_2$ ) and the pre-test mean score ( $X_1$ ) using the following formula:

$$I = X_2 - X_1$$

Where:

$I$  = Improvement in students' reading comprehension score

$X_2$  = Mean score of the post-test

$X_1$  = Mean score of the pre-test

f. Calculating the N-Gain of students pre-test and post-test scores

N-Gain analysis was used to determine the extent of students' learning improvement after receiving the treatment and to measure the effectiveness of the implemented learning strategy. Hake (1999) stated that the normalized gain (N-Gain) measures the effectiveness of a learning strategy by comparing the observed learning improvement with the maximum possible improvement.

The N-Gain formula is as follows:

$$N\ GAIN = \frac{Post\ Test\ Score - Pre\ Test\ Score}{Ideal\ Score - Pre\ Test\ Score}$$

Through this formula, the N-Gain value indicated the extent to which students' reading comprehension improved after applying the Jigsaw IV technique combined with Instagram Carousel as a post-reading task. According to Hake (1999), the interpretation of N-Gain values is classified into three categories:

- High ( $g \geq 0.7$ ) : high improvement
- Medium ( $0.3 \leq g < 0.7$ ) : moderate improvement
- Low ( $g < 0.3$ ) : low improvement

Thus, the N-Gain calculation in this research was used to assess the effectiveness of the applied learning technique in quantitatively improving students' reading comprehension.

g. Discussing and interpreting the data analysis results

The researcher analyzed the findings both quantitatively and descriptively and discussed the implications of each observed improvement based on the collected data, relating them to findings from previous studies.

h. Answering the research questions through a summary of the data analysis

All analysis results were summarized to answer the research questions and draw the final conclusions regarding the effectiveness of the Jigsaw IV technique and Instagram Carousel as a post-reading task in improving students' reading comprehension.

In conclusion, the data analysis process was carried out systematically to ensure accurate interpretation of the research results. By assessing, organizing, and calculating the average pre-test and post-test scores, the researcher was able to identify measurable changes in students' reading comprehension. Further comparison and interpretation of the results helped evaluate the effectiveness of the Jigsaw IV technique combined with Instagram Carousel and provided clear answers to the research questions.

### **3.10. Normality Test**

The normality test was conducted to determine whether the pre-test and post-test data were normally distributed. This test was important for the researcher to decide on the appropriate statistical analysis technique for the obtained data.

The analysis was carried out using SPSS version 27. Since the sample size was below 50, consisting of 36 students, the Shapiro–Wilk test was employed to examine the normality of the data. The hypotheses used in the normality test were as follows:

- $H_0$ : The data are not normally distributed
- $H_1$ : The data are normally distributed

The decisions were made based on the significance value from the Shapiro-Wilk test. If the significance value was greater than 0.05,  $H_1$  was accepted, indicating that the data were normally distributed. Conversely, if the significance value was equal

to or less than 0.05,  $H_0$  was accepted, indicating that the data were not normally distributed.

The research data were found to be normally distributed, so the researcher proceeded with a Paired Sample t-test to determine the difference between the pre-test and post-test scores. This statistical test was used to determine whether there was a significant improvement in students' reading comprehension after being taught using the Jigsaw IV technique combined with Instagram Carousel as a post-reading task.

### **3.11. Hypothesis Testing**

The hypothesis testing was conducted to determine whether the hypothesis proposed in this research was accepted or rejected. The improvement of students' reading comprehension was evaluated at the significance level of 0.05 ( $\alpha = 0.05$ ). Since the study employed a pre-test and post-test design, a paired sample t-test was used to analyze the difference between students' reading comprehension scores before and after the treatment. The criteria for accepting or rejecting the hypothesis were as follows:

- a.  $H_0$  (Null Hypothesis): There is no significant difference in students' reading comprehension scores after being taught through the jigsaw IV technique combined with Instagram Carousel as post-reading task.
- b.  $H_1$  (Alternative Hypothesis): There is a significant difference in students' reading comprehension scores after being taught through the jigsaw IV technique combined with Instagram Carousel as post-reading task.

The criteria for decision making are:

- a. If the significance value (p-value) is higher than 0.05 ( $p > 0.05$ ), then  $H_0$  is accepted and  $H_1$  is rejected. It means there is no significant different score.
- b. If the significance value (p-value) is equal to or lower than 0.05 ( $p \leq 0.05$ ), then  $H_0$  is rejected and  $H_1$  is accepted. It means there is a significant difference score.

The result of this hypothesis testing helped the researcher to draw conclusions about the effectiveness of the Jigsaw IV technique combined with Instagram Carousel in improving students' reading comprehension.

In conclusion, this chapter outlined the research methods used, including the research design, variables, data collection techniques, research instruments, and the procedures for implementing the research. This research was designed to measure the effectiveness of applying the Jigsaw IV technique and Instagram Carousel as post-reading tasks in improving students' reading ability of hortatory exposition texts.

## V. CONCLUSION AND SUGGESTION

This final chapter presents a summary of the research findings, conclusions, and recommendations for English teachers and future researchers.

### 5.1. Conclusions

Based on the research that the researcher conducted at SMAN 1 Tegineneng with class XII.2 students in the academic year 2025/2026, it can be concluded that the implementation of the Jigsaw IV technique combined with Instagram Carousel as a post-reading task was effective in improving students' reading comprehension scores.

Answering the first research question, this research found that the Jigsaw IV technique combined with Instagram Carousel as a post-reading task effectively enhanced students' reading comprehension. The mean score increased from 53.403 in the pre-test to 81.528 in the post-test (mean difference of 28.125 points), with an N-Gain value of 0.6160 (61.60%), categorized as a moderate level of improvement. The t-test result (Sig. 0.000 < 0.05) confirmed that  $H_1$  was accepted. These findings indicate that the integration of the Jigsaw IV cooperative learning technique and Instagram Carousel as a post-reading task successfully improved students' reading comprehension scores and promoted more active participation and engagement during the reading process.

Regarding the second research question, this research found that all aspects of reading comprehension improved after the implementation of the Jigsaw IV technique combined with Instagram Carousel. The five aspects analyzed were main idea, detailed information, inference, reference, and vocabulary. Among these aspects, the main idea showed the greatest improvement, with the mean score increasing from 4.58 to 7.58 (mean difference 3.0). This result indicates that students became more capable of identifying and summarizing the main ideas of

the texts through Jigsaw IV group discussions and visual post-reading tasks using Instagram Carousel.

This research also observed that student interaction and collaboration during learning increased, as seen from the enthusiasm of the students during the learning process and their creativity in making attractive slides for the Instagram Carousel design. Based on the explanation above, it can be concluded that this research found the Jigsaw IV technique combined with Instagram Carousel as a post-reading task to be effective in improving students' reading comprehension and fostering students' engagement in learning English.

## **5.2. Suggestions**

Based on the findings of this research, the researcher offers several suggestions for English teachers and future researchers.

### ***5.2.1. Suggestions for English Teacher***

Based on the findings of this research, the researcher offers three suggestions for English teachers as follows:

1. English teachers are encouraged to apply the Jigsaw IV technique combined with Instagram Carousel as a post-reading task. Based on the results of this research, this technique is effective in improving students' reading comprehension as well as their engagement in class. By using cooperative and digital activities, teachers can facilitate student-centered and interactive classroom activities, which encourage students to participate actively.
2. Given that the main idea aspect showed the greatest improvement, teachers are encouraged to use Jigsaw IV group discussions and comprehension checks after discussions combined with Instagram Carousel to improve this aspect. The use of visual slide sequences helps students identify, organize, and reconstruct main ideas effectively.

3. English teachers need to master the Jigsaw IV technique and allocate class time wisely. Planning and time management are important to balance the discussion. In addition, teachers need to monitor students closely throughout the learning process to maintain focus, equal participation, and student discipline in order to achieve optimal learning outcomes.

The researcher hopes that teachers can apply these techniques effectively and adapt them to classroom conditions in order to create active and effective learning environments.

### ***5.2.2. Suggestions for Further Research***

Based on the results of this research, the researcher provides several suggestions for future researchers:

1. Future researchers are suggested to conduct studies with a larger number of participants and include experimental and control groups. This research design can provide stronger empirical evidence about the effectiveness of combining the Jigsaw IV and Instagram Carousel techniques. Applying these techniques at various levels of education or fields of study can also demonstrate their flexibility and adaptability in different learning contexts.
2. Based on the findings of this research, future researchers are encouraged to develop the Jigsaw IV technique to be more flexible, allowing for greater creativity in overcoming challenges in its implementation. Considering that this technique involves several stages and limited class time, the procedure may need to be simplified while remaining effective. To reduce student boredom, future researchers can create more varied activities, interactive media, and innovative strategies. In addition, providing a clearer role for each student during group discussions is recommended to avoid excessive dependence on other students.

3. Future researchers are also recommended to investigate the use of other digital platforms besides Instagram to determine whether different media offer the same beneficial effects in promoting engagement and comprehension. This exploration could provide opportunities to develop more flexible and innovative digital learning strategies.
4. Finally, future researchers are encouraged to integrate these techniques into other English language skills. Since this approach encourages collaboration and digital interaction, it has the potential to improve students' communicative competence not only in reading comprehension but also in other language skills.

These suggestions are expected to support future research to be more effective and adaptive. With proper implementation, the Jigsaw IV technique combined with digital media has the potential to improve the overall English learning process.

This chapter has presented a summary of the main findings and conclusions of this research. The researcher hopes that these results can support the development of English language learning that is student-centered, engaging, collaborative, and creative.

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