

**THE USE OF INFOGRAPHIC AS VISUAL MEDIA TO IMPROVE  
STUDENTS' READING COMPREHENSION AT SMKN 4 BANDAR  
LAMPUNG**

**(Undergraduate Thesis)**

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**ABSTRACT****THE USE OF INFOGRAPHIC AS VISUAL MEDIA TO IMPROVE  
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LAMPUNG****By****Anisa Febriyanti**

This study aims to investigate whether the use of infographics as visual media can improve students' reading comprehension at SMKN 4 Bandar Lampung. The research was quantitative study with a one-group pre-test and post-test design. The Population of the research was students at 11<sup>th</sup> Grade Students of SMKN 4 Bandar Lampung in the Academic Year of 2025/2026. The sample of this research was 11<sup>th</sup> Hospitality 2 selected using a cluster random sampling technique. The data were collected through reading comprehension tests administered before and after the treatment. The results showed that there was a significant improvement in students' reading comprehension after the implementation of infographics. This was indicated by the increase in the mean scores from the pre-test to the post-test and supported by the t-test result, where the significance value was lower than 0.05. It suggests that the use of infographics effectively enhances students' understanding of reading texts. In conclusion, infographics can be considered an effective visual medium to improve students' reading comprehension.

**Keywords:** *Infographic, Visual Media, Reading Comprehension, Quantitative Research, Vocational High School*

## ABSTRAK

### PENGUNAAN INFOGRAFIS SEBAGAI MEDIA VISUAL UNTUK MENINGKATKAN PEMAHAMAN MEMBACA SISWA DI SMKN 4 BANDAR LAMPUNG

Oleh

**Anisa Febriyanti**

Penelitian ini bertujuan untuk mengetahui apakah penggunaan infografis sebagai media visual dapat meningkatkan pemahaman membaca siswa di SMKN 4 Bandar Lampung. Penelitian ini merupakan penelitian kuantitatif dengan desain *one-group pre-test and post-test*. Populasi penelitian adalah siswa kelas XI SMKN 4 Bandar Lampung Tahun Ajaran 2025/2026. Sampel penelitian adalah kelas XI Perhotelan 2 yang dipilih menggunakan teknik *cluster random sampling*. Data dikumpulkan melalui tes pemahaman membaca yang diberikan sebelum dan sesudah perlakuan. Hasil penelitian menunjukkan bahwa terdapat peningkatan yang signifikan pada pemahaman membaca siswa setelah penerapan infografis. Hal ini ditunjukkan oleh peningkatan nilai rata-rata dari pre-test ke post-test serta didukung oleh hasil uji-t yang menunjukkan nilai signifikansi lebih rendah dari 0,05. Temuan ini mengindikasikan bahwa penggunaan infografis secara efektif dapat meningkatkan pemahaman siswa terhadap teks bacaan. Dengan demikian, dapat disimpulkan bahwa infografis merupakan media visual yang efektif untuk meningkatkan pemahaman membaca siswa.

**Kata Kunci:** Infografis, Media Visual, Pemahaman Membaca, Penelitian Kuantitatif, Sekolah Menengah Kejuruan.

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LAMPUNG**

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Menyatakan bahwa skripsi ini adalah karya saya sendiri. Dalam proses penyusunannya, saya menggunakan bantuan teknologi kecerdasan buatan (Artificial Intelligence) sebagai alat bantu dalam pemilihan bahasa dan perbaikan struktur kalimat, yang seluruhnya telah saya tinjau kembali secara mandiri. 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, sepenuhnya menjadi tanggung jawab saya.

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## **CURRICULUM VITAE**

Anisa Febriyanti is the youngest of two children. She was born on Februari 15, 2003 in Jayapura. She has an older brother and was raised in Makassar in a supportive family environment.

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## **MOTTO**

“Our fate lives within us, you only have to be brave enough to see it”

(Merida, Brave)

“Long story short, I survived”

(Taylor Swift)

“Di hidup ini kita butuh orang lain, kita butuh sesama. tapi untuk kesuksesan dan keberhasilan diri kita sendiri, jangan pernah mengandalkan orang lain”

(Windah Basudara)

## **DEDICATION**

I express my deepest gratitude to Allah Subhanahu Wa Ta'ala for the will and permission to complete this thesis on time.

I dedicate this works to myself, for staying strong, being patient, and never giving up despite all the challenges and difficulties. This is a reminder that every effort, struggle, and perseverance will always lead to meaningful results.

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Bandar Lampung, 23 April 2026

The Researcher,

Anisa Febriyanti

2213042067

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## **I. INTRODUCTION**

This chapter will discuss things related to background of the research, research question, the objectives of research, the uses of the research, the scope of the research, and definition of terms.

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

English language teaching has focused on four key skills: listening, speaking, reading, and writing (Brown, 2007). Reading is particularly significant among these. It gives students the opportunity to investigate and comprehend written material, which is crucial in the modern world. According to Brown (2007), reading helps students develop their other language skills in addition to helping them understand texts. Students who read increase their vocabulary, improve their grammar knowledge, and gain self-assurance when speaking, writing, and listening. Additionally, according to Anderson (2003), it is critical to give EFL students reading abilities because they not only assist them in study English but also advance and grow in other areas of their education. Because reading comprehension is a component of the English curriculum in Indonesian high schools, it is therefore present in all EFL environments. High school students will eventually encounter reading comprehension questions on their final exams.

Reading comprehension is crucial for pupils to enhance their knowledge and gain information from the text. According to Somadayo (2011), reading comprehension is a complex intellectual process that involves mastering word meaning and thinking about verbal concepts. The ability to analyze and comprehend text is known as reading comprehension. Reading comprehension skills are very important for students to succeed both at school and in everyday life. According to Papatga and Ersoy (2016), effective reading comprehension requires a certain method.

However, from the importance of reading, it found that not all students have the reading ability. Suryanto (2017) compiled various studies addressing the challenges of English reading comprehension within the Indonesian cultural context. One significant issue frequently encountered by teachers is students' lack of interest during reading classes. When the reading materials are perceived as boring, students tend to lose motivation, which negatively affects their engagement in classroom reading activities. Consequently, teachers face the challenge of finding effective ways to stimulate students' learning and ensure their understanding of the lesson content. Furthermore, it is frequently observed that students lack effective reading strategies, which further complicates their ability to comprehend and analyze texts. Addressing these challenges is essential to improve students' reading proficiency and overall language development. Supported by Lastari & Silvana (2020), showed that students frequently lose interest when reading materials are not engaging or relevant, it is clear that teachers need effective strategies to improve reading comprehension so that students can retain knowledge longer.

At SMKN 4 Bandar Lampung, many students still struggle with reading comprehension. This is reflected in their low performance on classroom and standardized reading assessments. Several factors contribute to this issue: limited vocabulary, inappropriate teaching techniques, and the lack of interesting, interactive, and effective teaching media.

Therefore, the researchers aimed to investigate whether certain strategies or tools could enhance students' interest in reading activities. One of them is by implementing infographics as visual media. Infographics are a visual media that displays information in a clear, structured, and attractive format, making it easier for students to understand texts. In this study, the researcher applies the teaching activity by using infographics as visual media to enhance students' reading comprehension.

In general, infographics are visual texts that combine images, graphics, illustrations, and typography to help readers understand information more easily. This definition is generally applicable to infographics. Therefore, by adding more images and a small amount of text, infographic text is presented in an attractive manner.

Infographics are seen as an effective way to communicate information. Readers can understand the author's point without having to read lengthy text by using infographics (Retnaningtyas et al. 2024).

Previous studies have shown that infographics can enhance students' reading comprehension. By presenting information through a combination of images, symbols, and brief texts, infographics make it easier for students to understand important concepts, organize information, and maintain interest while reading. One of previous study from Retnaningtyas, et al. (2024), stated that This study investigated junior high school students' ability to read infographic texts using a quantitative descriptive research method. The findings indicated that students' ability to comprehend infographic texts in one of the districts in Central Java Province still needs improvement.

Other previous study from Manickam and Aziz (2020), stated that This action research aimed to determine the effectiveness of using infographics to enhance reading comprehension among primary school pupils with average and low English language proficiency. Data were collected through pre-test and post-test assessments and subsequently analyzed. The findings revealed a significant improvement in the mean scores from the pre-test to the post-test, indicating that pupils were able to comprehend the texts more effectively through the infographic-based intervention.

All that research relies and focus on the objectives to determine whether infographics can enhance students' reading comprehension. The subject of research from previous studies already using elementary school and junior high school, the research uses 11<sup>th</sup> students of the Hospitality at vocational high school as the subjects of the research.. This study will investigate whether the technique is effective in improving students' reading comprehension.

The researcher observes that the goals of earlier studies were to investigate and discover how infographics improving student reading comprehension. Infographics have been found to be an effective medium for teaching Reading in those studies. Unfortunately, there has been limited research focused on examining the use of infographics. Therefore, the researcher is aimed at research with the title "The use

of infographic as visual media to improve students' reading comprehension at SMKN 4 Bandar Lampung.”

## **1.2 Research Question**

According to the statement above, the researcher identified the research question into:

Is there any difference in students' reading comprehension after the implementation of infographics as a visual media?

## **1.3 The Objectives of the Research**

The purpose of the research is:

To find out whether there is a significant difference in the reading comprehension of vocational high school students after the implementation of infographics as a visual media.

## **1.4 The Use of the Research**

The findings of this research have several applications in education, especially to improve students' reading comprehension using infographics. The benefits expected by researchers are as follows:

Theoretically:

This research may contribute to the literature on visual learning and support the theory that visual aids enhance comprehension, especially in language learning.

Practically:

1. Enhancing Teaching Strategies: The findings will provide educators with practical insights into how infographics can be effectively integrated into reading instruction.

2. Encouraging Future Research: This study will lay the groundwork for further exploration into the role of visual aids in education. Future researchers can build upon these findings to investigate other forms of visual media and their impact on various aspects of learning, thereby expanding the body of knowledge in educational research.

3. Increasing Student Engagement: The research will provide evidence on how infographics can enhance student engagement and motivation in reading activities. By understanding the factors that contribute to increased interest in reading, educators can develop targeted strategies to foster a more active and participatory learning atmosphere.

### **1.5 The Scope of the Research**

The scope of this research will focus on 11<sup>th</sup> grade vocational high school to ensure a comprehensive evaluation of the benefits of using infographics. This study will cover five aspects of reading comprehension, particularly in understanding the main ideas, supporting detail, inferences, references, and vocabulary in context. The media that will be used in the teaching process is infographics. The researcher will use texts based on the grade 11 high school curriculum. The application of infographics in teaching reading took place over several meetings in English classes during the research period.

### **1.6 Definition of Terms**

Reading is the process of interpreting written text, which enables one to understand symbols and derive meaning from words and sentences. It involves comprehension and retention of information, which is crucial not only for academic but also personal growth and effective communication in everyday life.

Infographics are visual representations of information, data, or knowledge designed to present complex content in a clear and engaging format. They typically combine images, icons, colours, charts, text, and layout design to enhance understanding and retention of information.

Visual media encompasses any instructional material that relies on visual elements to convey meaning, including images, diagrams, posters, videos, and infographics. Such media are used to support verbal or written information, making it easier for learners especially visual learners to process and retain knowledge.

This chapter already discussed the introduction of the research, including the explanation about background of the research, research questions, objectives of the research, uses of the research, scope of the research, and definition of terms.

## **II. LITERATURE REVIEW**

This chapter will focus on previous studies, the concept of reading, aspects of reading, stages of teaching reading, visual media, infographic, procedures of teaching reading through infographics, advantages and disadvantages teaching reading through infographics, theoretical assumption, hypotheses.

### **2.1 Previous Studies**

There have been several studies focusing on the use of infographics as a visual media to enhance students' reading comprehension. These studies explore how infographics, as visual media, can support learners in understanding and retaining information from texts more effectively. The following section presents relevant research that highlights the effectiveness of infographics in improving reading comprehension skills, serving as valuable references for this study.

The first previous study is from Lastari and Silvana (2020) stated that the research aims to describe EFL learners' experiences in using infographics in a reading class. The pedagogical intervention involved the use of an infographic application, Canva, as an alternative tool to assist students in summarizing reading passages and to enhance their reading comprehension. The participants of this study are 40 eleventh-grade students, consisting of 24 females and 17 males, from MAN 1 Tangerang. Classroom action research was conducted in two cycles to investigate how the use of Canva improved students' summary writing skills. The data were gathered from teacher's journal, questionnaires and the results of students' reading comprehension tests. The test results also showed students had improved their reading comprehension, as they have to conceptualize the main idea and the details of the text through the process of creating the infographics. The findings

The findings revealed that students perceived the use of infographics as motivating and helpful in enabling them to summarize the assigned reading topics more easily.

The next previous study from Retnaningtyas, et al. (2024), stated that This study examined junior high school students' ability to read infographic texts using a quantitative descriptive research approach. The participants were eighth-grade students from a junior high school in one of the districts in Central Java Province. According to Fraenkel, Wallen, and Hyun (2012), quantitative research involves data in the form of numerical scores; therefore, a survey research design was employed in this study. The findings indicated that students' ability to comprehend infographic texts was still low, as reflected in the scores obtained from infographic reading tasks. Consequently, this ability needs to be improved. Several efforts can be undertaken by teachers to enhance students' infographic reading skills, including strengthening visual literacy, improving general reading skills, providing explicit instruction about infographics, and offering more practice in reading infographic texts.

Previous study is from Cupita and Franco (2019), This article reports on a pedagogical intervention conducted at a public university in Colombia involving 26 psychology students aged 19 to 26 who were enrolled in English for Academic Purposes courses in their fourth semester. Students' infographics were used by teachers to assess their comprehension of short academic texts in English, and interviews were conducted to explore students' perceptions of the intervention. Data were collected through two instruments (interviews and students' artefacts) to analyze students' reading processes when engaging with short English texts. The findings indicated that the use of infographics was beneficial in developing students' reading skills, as it enabled them to paraphrase key ideas and visually represent their understanding of the texts.

The research from Manickam and Aziz (2020) stated that the purpose of this action research is to determine the effectiveness of using infographics to enhance reading comprehension among primary school pupils. Sixteen Year 5 pupils from a semi-urban primary school at Pahang, Malaysia were chosen as its research participants. This study was inspired by the theory of Multimedia Learning by Richard E. Meyer.

Data for this study were collected through pre-test and post-test assessments and subsequently analyzed. In addition, a paired-sample t-test was conducted using IBM SPSS software. Based on the findings, it can be concluded that the use of infographics significantly helped pupils improve their text comprehension. Infographics enabled participants to better understand the meaning of the texts by summarizing the content using simpler, more comprehensible language accompanied by relevant visual representations.

Other previous study about infographics has also written by Falentina, et al. (2022) stated that this research was conducted to investigate the effectiveness of infographics in teaching reading comprehension and to determine the significance of their impact on students' reading comprehension at SMA N 01 Lumar. The study employed a pre-experimental design using a one-group pre-test and post-test format. The sample consisted of class X IPA 1, selected through a cluster random sampling technique. Data were collected through measurement using a test instrument. A 20-item multiple-choice test was administered to obtain post-intervention data. The collected data were analyzed using SPSS version 26. The results indicated that the use of infographics was effective in improving students' reading comprehension, showing a modest but statistically significant effect.

Previous studies have shown varying results regarding the use of infographics in improving students' reading comprehension. Additionally, there is a need to explore how the use of infographics compares to traditional teaching methods in enhancing reading comprehension. Therefore, the researcher aims to conduct this study with 11<sup>th</sup> grade students at a vocational high school to investigate the use of infographics as a visual media in improving their reading comprehension.

## **2.2 Concept of Reading**

Reading is one of the four key language skills that teachers should focus on when teaching English as a foreign language. According to Grabe (2009), reading is a process when readers receive knowledge from texts and apply that knowledge to their education. Learning occurs when a person's knowledge progresses from something unknown to something known. Reading is an aspect of learning, therefore readers try to understand the material by interpreting, combining,

assessing, and recognizing significant information. Tarigan (2008), stated that readers utilize reading as a technique to extract the messages that authors aim to convey through written language or words. Reading is fundamentally a complex activity since it includes visual, cognitive, psycholinguistic, and metacognitive processes in addition to memorization of written language.

According to Pang et al. (2003), Reading is the process of understanding written texts and involves both cognitive and perceptual activities. It comprises two interrelated processes: word recognition and comprehension. Word recognition refers to the ability to identify written symbols and relate them to spoken language, while comprehension involves constructing meaning from words, phrases, and connected texts. To achieve comprehension, readers typically employ various strategies, including activating prior knowledge, utilizing vocabulary and grammatical knowledge, and drawing on their experience with different types of texts.

According to Sutarsyah (2015), the process of reading is divided into three sections: bottom-up process, top-down process, and interaction process. Comprehension begins at the word level, where decoding is synthesized through word identification involving both bottom-up and top-down processes as debated in the great reading debate. In other words, reading involves the interaction of these two processes.

Reading is a fundamental skill for students to acquire knowledge. It is one of the essential language skills because, without enough reading ability, learners cannot access the wide range of information available in sources such as textbooks, novels, newspapers, and magazines (Anita, et al. 2020 in Falentina, et al. 2022). Texts have a variety of types, such as nonfiction and fiction. This encourages various reading goals and approaches to texts. As an example, reading a dictionary and a novel are not the same thing (Pang et al., 2003).

According to Brassell and Rasinski (2008), Comprehension is the act of understanding. Comprehension is an important goal of reading and reading instruction. Additionally, Comprehension is the process of gaining meaning from interconnected text. Therefore, comprehension is not a passive process. but an active one (Pang et al., 2003).

Reading comprehension, as defined by Brassell and Rasinski, (2008), is the ability to extract information from written content and apply it in a way that shows a person understands and comprehends the content. According to Lestari and Purnama (2023), reading comprehension is the ability to understand the content of a text and the meaning contained in a text. Reading comprehension is needed by students to understand and capture the purpose of reading. Similarly, Grabe and Stoller (2011), reading comprehension as a dynamic process in which readers actively construct meaning by integrating information from the text with their own background knowledge and employing a range of cognitive and linguistic skills. However, Siahaan et al. (2022), stated that the difficulty of reading comprehension can be influenced by both internal and external variables. Lack of familiarity with the reading material, difficulties applying reading strategies, Students struggle with reading comprehension due to internal factors such as difficulty memorizing material, limited vocabulary, and poor fluency. Outside variables, such as the family and school environment, contributed to reading comprehension issues.

In Summary, reading is one of the four key language skills that plays a crucial role in learning English. It's more than just recognizing words; it involves understanding and interpreting the meaning behind the text. Reading comprehension is an active process where readers use their background knowledge, vocabulary, grammar, and various strategies to make sense of what they read. This skill helps students gain knowledge from different sources like textbooks, novels, and newspapers. Overall, reading comprehension is essential for students to fully understand and connect with the material they read.

### **2.3 Aspect of Reading**

According to Nuttall (1982), there are five aspects in reading comprehension that students must understand., those are determining the main idea, finding specific details, making inferences, identifying references, and understanding the meaning of vocabulary. This aspect of reading comprehension can help students improve their comprehension skills.

1. Determining the main idea

Main idea is the most important in a paragraph. “Main idea has two parts; a topic and controlling ideas” (Oshima & Hogue, 2007, p.39). The main point or most significant message that the author wants to communicate in a paragraph or passage is known as the main idea.

2. Finding specific details

Finding specific details involves locating particular facts, details, or data within a text. According to Grabe (2009), this aspect requires scanning the text efficiently to pick out relevant information without reading every word. This skill is commonly used when readers have a specific goal, such as answering questions or verifying information.

3. Making inferences

Making inferences plays a crucial role in reading, particularly when readers need to understand information that is implied rather than explicitly stated. Fluency in reading allows readers to seek out additional information and support it with text comprehension (Davoudi, 2005). The readers are expected to draw a conclusion and make meaning from the text.

4. Identifying references

Determining reference refers to the ability to identify what pronouns, demonstratives, or other referring expressions relate to in a text. This skill helps maintain coherence and understanding of relationships between ideas.

5. Understanding the meaning of vocabulary

Understanding vocabulary is essential for reading comprehension because it allows readers to make sense of the text. Ditha (2009) in Rahmasari, et al. (2023) stated that students' reading skills improve as they learn more about words. Students who can read well and understand what they're reading are more likely to read well themselves.

This aspect must be applied by teachers in the process of learning reading comprehension. students must be aware of the importance of mastering this aspect to facilitate understanding a text.

## 2.4 Stages of Teaching Reading

Reading is a complex skill that requires more than just decoding words. To help students become proficient readers, the reading process should be taught systematically through distinct stages that guide learners from initial exposure to reflective comprehension. According to Grabe and Stoller (2011), the teaching of reading is most effective when it follows three pedagogical stages: Pre-Reading, While-Reading, and Post-Reading.

### 1. Pre-reading

The pre-reading stage aims to prepare students to understand the text by activating their background knowledge and generating interest. At this stage, teachers introduce the topic, key vocabulary, and ask guiding questions that encourage prediction and anticipation. pre-reading activities help learners build expectations about the text and facilitate schema activation. This mental preparation allows students to engage more meaningfully with the material, as they can anticipate what the text will be about and connect it with what they already know.

### 2. While-reading

This stage involves students in active reading and comprehension. The goal is to support learners as they process and understand the content, structure, and meaning of the text. Teachers may ask questions, guide students to find main ideas, or encourage annotation. while-reading activities are essential because they help learners process the content in real time and monitor their own understanding. This stage ensures that reading is not a passive activity but one that demands engagement and critical thinking.

### 3. Post-reading

The post-reading stage consolidates understanding and allows students to reflect, respond, and apply what they have learned. After completing the reading, students may be asked to summarize the text, participate in discussions, create graphic organizers such as infographics or mind maps, or write a personal response.

Each stage has its own purpose and helps guide students before, during, and after reading. When teachers use these stages well, students can become more confident and better at reading. These steps also make it easier to use different tools, like infographics, to help students learn in a fun and clear way.

## **2.5 Visual Media**

Visual media in education refers to any material or tool that uses visual elements such as images, videos, diagrams, charts and infographics. Visual media can help students understand and remember information more effectively. These tools support learning by engaging the visual senses, making abstract or complex ideas easier to understand (Heinich et al. 2002).

According to Sudarmaji et al. (2020), the use of visual materials is visual resources improve the effectiveness of learning. Using visual elements like photos and flash cards was beneficial. Using media in education enhances student learning and efficiency. Using media makes concrete content interesting and understandable. The use of media enhances the teacher's ability to effectively communicate with students. There are various benefits to employing media in the teaching and learning process. According to Senjaya et al. (2018) as cited in Sofian and Anggraeni (2021), effective teaching involves increasing student motivation, avoiding boredom, simplifying information, and creating a systematic learning process.

## **2.6 Infographic**

An infographic is a visual representation of data or ideas to convey effectively communicate difficult information to an audience in a clear and understandable manner. Infographics can be used by a wide variety of individuals and organizations to enhance their communication. Infographics can be found in traditional media such as newspapers and magazines, as well as in digital platforms, where social media has contributed to an explosion in their popularity. With all of this visual "hardwiring" in place, it stands to reason that processing infographics would be easier than processing pure text. One of the reasons humans can process images faster than words is due to the way the brain processes information. The system

handles image data at the same time whereas text is processed linearly. By using infographic to communicate it can help readers relate to and engage with the information (Smiciklas, 2012).

According to Shanks, et al (2017) Infographic texts are visually appealing because they incorporate evidence-based data, readable fonts, and attractive color schemes, which facilitate the effective delivery of information to readers. Infographics can be classified into two main types: quantitative and qualitative. Quantitative infographics are data-driven and tend to be more narrative in nature, as they present information in a structured manner that helps readers interpret the visuals. In contrast, qualitative infographics may consist of simple elements such as titles, visuals, and brief instructions, enabling audiences to grasp essential information without extensive narrative context. Qualitative infographics are designed to engage and entertain readers; however, despite their creative nature, they must still convey the intended message clearly (Lankow 2014:134).

Infographics can improve students' reading comprehension. Infographics can enhance student learning. Make it easy for students to read texts with infographics. Infographics can be utilized as learning media since they incorporate a variety of visual elements. These visual components can grab students' attention and pique their interest in reading a text. Infographics can help students grasp and retain text content by simplifying it through visual components (Lestari and Purnama 2023).

In summary, Infographics are visual tools designed to communicate complex information clearly and efficiently by combining images, data, and text. Their popularity has grown with the rise of digital and social media, as the human brain processes visual information more quickly than text. In education, infographics serve as effective teaching aids due to their engaging design and ability to simplify information, making it easier for students to understand and remember content. Infographics can be quantitative, focusing on data and narrative, or qualitative, aiming to entertain and engage while still delivering a message. By incorporating visual elements, infographics capture students' attention and support improved reading comprehension.

## **2.7 Procedures of Teaching Reading Through Infographics**

Teaching reading through infographics involves integrating visual and textual elements to enhance students' comprehension skills. Infographics serve as tools to simplify complex information and present it in a visually engaging manner. The following procedures outline a typical teaching process using infographics:

1. The teacher provided material and choose a reading text appropriate for students' level (e.g., procedure, descriptive, or explanation).
2. After that, the teacher distributed or displayed the infographics for the students to observe.
3. The teacher asked students individually to identify the infographic titles, captions, or headings to predict the content by connecting it with their prior knowledge.
4. After individual thinking, students pair up with a partner to discuss their predictions. They compare what they expect to read and clarify any unfamiliar elements together.
5. In pairs, students discuss their understanding, confirm or revise predictions, and help each other interpret difficult parts of the infographic. They may use guiding questions from the teacher to focus the discussion (e.g., "What is the main idea?" or "What do the images represent?").
6. With pairs they share their findings with the class. The teacher facilitates a class discussion to compare the different, correct misconceptions, and highlight important points from the infographic.
7. After class discussion, the teacher gave them post-reading tasks such as comprehension questions, short discussions, or summarizing activities. While checking the students' responses, the teacher noted which aspects improved after using infographics as reading materials.
8. The teacher gave comments and scores for their reading comprehension performance and gave feedback for further improvement.

This approach uses infographics to enhance reading comprehension by focusing on the interaction between the students and the text, helping students engage with infographics meaningfully.

## **2.8 Advantages and Disadvantages Teaching Reading Through Infographics**

Using infographics as a medium for teaching reading offers several benefits, particularly in engaging students visually and simplifying complex information. This method aligns with the principles of multimedia learning, which propose that students learn more effectively from a combination of words and images than from words alone (Mayer, 2009). However, like any instructional strategy, it also has its limitations. The following are the main advantages and disadvantages:

### ***2.8.1 Advantages***

1. Enhanced Engagement and Motivation

Infographics combine visuals and concise text, making reading materials more engaging and appealing to students. This increased engagement can lead to higher motivation and interest in the reading task, especially for visual learners.

2. Support for Diverse Learners

Infographics cater to different learning styles, particularly benefiting students who struggle with traditional text-heavy materials. By presenting information in multiple formats (images, charts, icons, and brief text), infographics can make content more accessible to a wider range of learners.

3. Improved Comprehension and Retention

Visual representations help students better understand and remember complex information. Infographics can simplify dense or abstract content, making it easier for students to grasp main ideas and relationships between concepts.

4. Promotes Critical Thinking

Analyzing an infographic requires students to interpret data, make inferences, and connect visual cues with written content, which develops higher-order thinking skills.

### ***2.8.2 Disadvantages***

1. Limited Textual Content

Infographics usually contain short texts or key phrases, which may limit students' exposure to full reading passages, affecting their ability to engage with complex syntax and vocabulary.

## 2. Design Quality Varies

Poorly designed infographics can confuse students more than help them. If visuals are not clear or logically organized, comprehension may be hindered.

## 3. Limited Application for Certain Text Types

Infographics are most effective for informational or factual content. They are less suitable for literary texts, argumentative passages, or texts requiring in-depth analysis, which demand more extensive reading and interpretive skills.

In summary, teaching reading through infographics can enhance engagement and comprehension by combining visuals with text. However, it also has limitations, such as oversimplifying content and lacking depth for complex texts. Thus, infographics should be used as a complementary tool, not a replacement for traditional reading materials.

## **2.9 Theoretical Assumption**

Based on the theories and findings reviewed in the previous subchapters, it can be theoretically assumed that the use of infographics as visual media has the potential to improve students' reading comprehension. Infographics simplify difficult material, highlight key ideas, and visually organize knowledge, allowing learners to better grasp and retain what they read. While reading comprehension involves understanding main ideas, identifying supporting details, and making inferences, the use of infographics provides scaffolding that can guide students through these processes more effectively.

Furthermore, the integration of visual aids in reading activities can increase students' motivation and engagement. According to Mayer's (2009) cognitive theory of multimedia learning, students obtain a better understanding when they

actively analyze both text and visuals. As a result, utilizing infographics in reading classes is predicted to improve comprehension while also providing more engaging learning experiences.

Therefore, the theoretical assumption of this study is that teaching reading through infographics will improve students' reading comprehension by clarifying material, enhancing engagement, and supporting students in processing and retaining content more efficiently.

### **2.10 Hypotheses**

Considering the issue that was discovered in the preceding chapter of this study, the hypotheses is:

There is a significant difference between the students' reading comprehension before and after using infographics.

This chapter already discuss about previous studies, the concept of reading, aspects of reading, stages of teaching reading, infographic, procedures of teaching reading through infographics, advantages and disadvantages teaching reading through infographics, theoretical assumption, hypotheses.

### III. METHODS

This chapter discussed the research design, variable of the research, data of the research, data collecting technique, validity and reliability of instrument, level of difficulty, discrimination power, data analysis, hypothesis testing and scoring system.

#### 3.1 Design

The purpose of this study aimed to examine how infographics could help students improve their reading comprehension. To accomplish this, the researcher used a quantitative research design. The quantitative part included numerical data collection through pre-test, post-test, and treatments. Therefore, the researcher used:

$$\boxed{G = T1 X T2}$$

G : The group (one class)

T1 : Pre-test for students' reading before getting any treatment.

T2 : Post-test for students' reading after getting treatment.

X : Teaching reading using infographic.

(Setiyadi 2018)

This research used this design for the research question, which was to find out whether the use of infographics as visual media could improve students' reading comprehension.

### **3.2 Variable of the Research**

According to Setiyadi (2018) defines variable as a term that represents variation within a class of objects, such as achievement, motivation, behaviour, gender, and environment. There are two types of variables: independent (X) and dependent (Y). The variables used by the researchers in this study are shown below:

1. The independent variable is the use of infographic since it will be measured to see its use in teaching students' reading ability.
2. The dependent variable is the students' reading comprehension which going to be investigated through pre-test and post-test.

### **3.3 Data Source**

This study was conducted at a vocational high school and focused on second-grade students, as the researcher believed that this grade aligns well with the selected basic competencies.

#### ***3.3.1 Population and Sample***

The study focused on 11<sup>th</sup> grade students at SMKN 4 Bandar Lampung that followed the Kurikulum Merdeka during the 2025/2026 academic year. One class acted as the experimental group and was selected using cluster random sampling, which receives infographic-based reading instruction. The researcher selected class 11<sup>th</sup> Hospitality 2 based on several considerations. Students have a strong need to understand English-language texts related to the workplace, such as service information, procedures, and explanations. Based on the results of observation or pre-test, students need improvement, particularly in understanding the main ideas, detailed information, and the meanings of vocabulary in the text. This research used a quantitative method to improve the generalizability of the findings across similar student populations. The group had about 25-30 students, which was the optimum sample size for identifying statistically significant effects. This sample size enabled reliable data collection and analysis, as well as sufficient statistical power to detect any significant improvement in reading comprehension caused by the intervention.

### 3.3.2 Setting

The study was conducted at vocational high school, focused on second grade, from class XI PHT (hospitality) 2. The students that consist of around 25 to 30 students during the academic year 2025/2026.

### 3.4 Instrument

The instrument used in this study was a multiple-choice reading comprehension test. The test was administered twice: as a pre-test and a post-test. The reading materials in the test were adapted to the level of second-grade senior high school students and were presented through infographics designed to support visual learning. A total of 50 questions were developed and first administered in a tryout session conducted by the researcher. Conducting a tryout before the pre-test serves as an effective way to assess and prepare students, as well as to provide the researcher with insights into students' initial comprehension levels and potential progress. The questions focused on key aspects of reading comprehension, including identifying main ideas, finding specific details, making inferences, recognizing references, and understanding vocabulary in context. The texts and information used in the questions were derived from infographic-based materials created to enhance students' engagement and understanding of the reading content.

In certain cases, researchers conducted a tryout test to assess the validity and reliability of the pre-test procedure. Researchers modified certain questions to improve their relevance to students.

*Table 3. 1 Specification of Reading Test*

| No.   | Reading Comprehension Aspect            | Number of items | Number of the test   |
|-------|---|-----------------|--|
| 1.    | Determining the main idea               | 5               | 1, 11, 21, 31, 41  |
| 2.    | Finding specific details                | 19              | 2, 4, 5, 9, 13, 16, 18, 19, 23, 24, 26, 28, 29, 32, 33, 34, 43, 44, 48 |
| 3.    | Making inferences                       | 5               | 8, 14, 24, 38, 46  |
| 4.    | Identifying references                  | 6               | 10, 15, 25, 35, 36, 47   |
| 5.    | Understanding the meaning of vocabulary | 15              | 3, 6, 7, 12, 17, 20, 22, 27, 30, 37, 38, 39, 42, 45, 49                |
| Total |   | 50              |  |

### **3.5 Data Collecting Technique**

The data in this study were collected through a reading comprehension test composed of multiple-choice questions, given to students before and after the instructional treatment. The objective was to measure significant changes in students' reading comprehension performance after they were taught using infographic-based materials. In addition to measuring overall achievement, the test also evaluated specific components of reading comprehension based on Nuttall's (1982) framework, which included determining the main idea, finding specific information, making inferences, identifying references, and interpreting vocabulary in context. These stages were integrated into the use of infographics to support students in activating prior knowledge, engaging with visual input during reading, and reflecting on content understanding after reading.

#### **1. Pre-test**

Before giving the treatment, a pre-test was conducted to assess students' reading comprehension ability. The test consisted of 40 multiple-choice questions, with three exemptions and one correct answer for each question.

#### **2. Treatment**

After completing the pre-test, students received a treatment that involved the use of infographics as visual media during the reading lesson.

#### **3. Post-test**

After the treatment session was over, a post-treatment test was conducted to find out to what extent the students' reading comprehension ability had improved as a result of the treatment. The post-test consisted of 40 multiple-choice items, each with four answer options. Although the topics covered in the post-test were the same as those in the pre-test, the questions were presented in a randomized order.

### **3.6 Validity and Reliability of Instrument**

To ensure the quality of the reading comprehension test, the researcher conducted a tryout before administering the actual pre-test. This tryout was essential for

evaluating the validity and reliability of the test items. According to Setiyadi (2018), a good instrument should meet both the criteria of validity and reliability to ensure the accuracy and trustworthiness of research data.

### **3.6.1 Validity**

The reading comprehension test used in this study was carefully designed to ensure content validity. Validity in research refers to the extent to which an instrument accurately measures what it is intended to measure (Creswell, 2018). As indicated by Setiyadi (2018) to determine the validity of the test, the following two categories of validity will be used:

#### 1. Content validity

Content validity assesses how well each item in a measurement instrument represents what it was supposed to measure as a whole, ensuring that all content-related aspects were covered. For content validity, the test material had to align with the curriculum, specifically the English Merdeka curriculum and the syllabus for second year senior high school students.

#### 2. Construct validity

Construct validity is concerned with whether the test truly measures the theoretical construct or concept it claims to measure. In reading comprehension, this means the test must assess actual comprehension abilities, such as understanding the main idea, finding specific information, making inferences, identifying references, and interpreting vocabulary in context. Construct validity was ensured by having the test reviewed and validated by an expert, Prof. Dr. Cucu Sutarsyah, M.A., a lecturer in English Education Study Program at the University of Lampung (Appendix 13).

### **3.6.2 Reliability**

Reliability refers to the consistency and stability of the test results over time. In this study, the reliability of the reading comprehension test is measured through a try-out test conducted before the pre-test. The reliability of the reading comprehension test is measured using Product Moment Correlation formula. Using split half method. The test was divided into odd and even (Appendix 6).

Product Moment Correlation can be calculated using the following formula:

$$r = \frac{n(\sum XY) - (\sum X)(\sum Y)}{\sqrt{[n\sum X^2 - (\sum X)^2][n\sum Y^2 - (\sum Y)^2]}}$$

Notes:

r : test reliability coefficient  
 X : Score on odd  
 Y : Score on even  
 n : Number of students

The criteria of reliability are as follows:

0.90 – 1.00 = high  
 0.50 – 0.89 = moderate  
 0.00 – 0.49 = low

(Hatch & Farhady, 1982)

Based on the calculation using the Product Moment formula, the obtained correlation coefficient (r) is 0.997. After applying the Spearman-Brown formula, the reliability coefficient is 0.998. This indicates that the instrument has a very high level of reliability (Appendix 6).

### 3.7 Item Analysis

#### 3.7.1 Level of Difficulty

The difficulty level of each test item was evaluated using a difficulty index, calculated based on pilot test data. Items that are too easy or too difficult may be revised or removed to ensure a balanced distribution of questions that can effectively measure variations in reading comprehension skills among students in the target age group.

$$P = \frac{R}{T} \times 100$$

Notes:

P : the percentage who answer the item correctly  
 R : the number who answered the item correctly  
 T : the total of number of subjects

the criteria were:

0% – 30% = difficult

31% – 70% = moderate

71% – 100% = easy

*Table 3. 2 Level of difficulty*

| No. | Items  | LD        | Criteria  |
|-----|--|-----------|-----------|
| 1.  | 0  | <0.3      | difficult |
| 2.  | 3, 5, 6, 14, 17, 22, 25, 28, 35, 37, 42,<br>46, 47, 48.  | 0.3 – 0.7 | Moderate  |
| 3.  | 1, 2, 3, 7, 8, 9, 10, 11, 12, 13, 15, 16,<br>18, 19, 20, 21, 23, 24, 26, 27, 29, 30,<br>31, 32, 33, 34, 36, 38, 39, 40, 41, 43,<br>44, 45, 49, 50. | >0.7      | Easy      |

It was found out that were 0 items considered difficult, 14 items considered moderate, and 36 item considered easy.

### **3.7.2 Discrimination Power**

Discriminating power measures how well a test item distinguishes between students with high and low levels of knowledge. Determine the test's discriminating power.

The researcher utilized the following formula (Shohamy 1985):

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

Notes:

DP : Level of difficulty

U : The total of correct answer of the higher group

L : The total of correct answer of the lower group

N : Total number of students

The criteria were:

1. 0.00 – 0.20 = Poor discrimination

2. 0.21 – 0.40 = Fair discrimination

3. 0.40 – 0.70 = Good discrimination
4. 0.71 – 1.00 = Excellent discrimination
5. (Negative) = Bad items

(Shohamy, 1985)

There were 50 multiple choice question that were calculated. From the calculation, the discrimination power analysis shows that most of the test items fall into the good category, while several items are categorized as fair. The result can be seen in Appendix 7.

### **3.8 The Report of Treatment**

This research was conducted with eleventh grade of SMKN 4 Bandar Lampung from September 24 to 15 October 2025. The procedure included the pretest, treatment sessions, and posttest.

1. First meeting (September 24, 2025)

A pretest was conducted for the eleventh-grade students of class XI PHT 2. The pretest took 45 minutes, and during the test it was ensured that students did not use their mobile phones. After the pretest, the next 45 minutes to do the treatment session. In this session, descriptive text was taught using infographics as a visual media. After explaining the material, the students were divided into several groups. Each group received an infographic paper containing a descriptive text about a hotel lobby. The students then discussed the content of the infographic within their groups. After that, some questions were asked to each group to check their understanding and improve their reading comprehension. Once all students understood the infographic, they were given several questions to answer. After completing the questions, feedback was provided, and the session was concluded with a summary of what had been learned in the first meeting.

2. Second meeting (October 1, 2025)

A treatment session was conducted for  $2 \times 45$  minutes during the lesson. In this meeting, procedure text was taught using infographics as a visual

medium. As in the previous meeting, triggering questions were given to find out how well the students understood the procedure text. After explaining the material, the students were divided into several groups and were given an infographic. The infographic contained a procedure text about how to clean shoes. The students discussed the infographic with their group members for about 15 minutes. After that, each group was asked several questions about the information in the infographic. After ensuring that the students understood the material, a worksheet was given to each student to answer individually. After finishing the worksheet, the answers were discussed together with the students.

3. Third meeting (October 8, 2025)

The last treatment session was conducted with the students for  $2 \times 45$  minutes during the lesson. In this meeting, explanation text was taught using infographics as a visual medium. The session started with triggering questions to introduce the explanation text that would be learned. After that, the material was explained, and the students were divided into groups as usual. Each group received an infographic about how an earthquake happens. The students discussed the infographic in their groups for about 15 minutes. After the discussion, several questions related to the infographic were asked to check the students' understanding. Then, some questions were given to be answered together as a class. Before closing the lesson, the students' understanding of the material was checked.

4. Fourth meeting (October 15, 2025)

This was the last meeting. In this session, a posttest was given to the students with a duration of 45 minutes. During the test, it was ensured that the students did not use their mobile phones. After 45 minutes, the students were instructed to submit their posttest papers.

### **3.9 Data Analysis**

The data in this study are analyzed quantitatively to determine the effectiveness of using infographics as visual media in teaching reading comprehension. The analysis begins by scoring the students' responses from both the pre-test and post-test. Each

correct answer receives a score of 1, while each incorrect answer is scored 0. After scoring, the total scores of all students are calculated to find the mean, standard deviation, and gain scores.

To evaluate whether there is a significant difference between the students' reading comprehension performance before and after the treatment, the researcher uses a paired sample t-test. This statistical test is conducted using SPSS (Statistical Package for the Social Sciences) software. The t-test is chosen because it is suitable for comparing the means of two related groups—in this case, the same group of students before and after the use of infographics.

### 3.10 Hypothesis Testing

In this study, hypothesis testing is conducted to determine whether there is a significant difference between students' reading comprehension scores before and after the use of infographics as visual media in the teaching process.

The hypotheses are formulated as follows:

Paired sample t-test

$$t = \frac{\underline{d}}{S_d/\sqrt{n}}$$

$t$  : t-test.

$\underline{d}$  : Mean difference between paired observations.

$S_d$  : Standard deviation of the difference.

$N$  : Number of paired observations (students)

Null Hypothesis ( $H_0$ ): There is no significant difference between the students' reading comprehension scores before and after using infographics.

Alternative Hypothesis ( $H_1$ ): There is a significant difference between the students' reading comprehension scores before and after using infographics.

The significance level ( $\alpha$ ) is set at 0.05. If the Sig. (2-tailed) value obtained from the paired sample t-test using SPSS is less than 0.05, the null hypothesis is rejected, indicating that the use of infographics has a significant effect on students' reading comprehension. Conversely, if the p-value is greater than 0.05, the null hypothesis is accepted, meaning that the treatment did not result in a statistically significant improvement in students' performance.

### 3.11 Scoring System

The scoring system used in this study is based on students' answers to the multiple-choice reading comprehension test. Each question has four options, with only one correct answer. The scoring criteria are as follows:

1. Correct answer: 1 point
2. Incorrect answer or unanswered question: 0 points

The total score for each student is the sum of the points from all questions. Since the test consists of 40 questions, the maximum score a student can achieve is 40. To facilitate data analysis and interpretation, raw scores are converted into percentages using the formula:

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

- S : Score of the test  
 C : Total correct answers  
 N : Total number of questions

The criteria

|          |           |
|----------|-----------|
| 80 – 100 | Excellent |
| 70 – 80  | Good      |
| 60 – 70  | Fair      |
| 40 – 50  | Poor      |
| < 40     | Very poor |

This chapter already discuss about the research design, variable of the research, data of the research, data collecting technique, validity and reliability of instrument, level of difficulty, discrimination power, data analysis, hypothesis testing and scoring system.

## **V. CONCLUSION AND SUGGESTION**

### **5.1 Conclusion**

The purpose of this research was to examine whether the use of infographics as visual media could improve students' reading comprehension at SMKN 4 Bandar Lampung. Based on the findings and discussion presented in this study, it can be concluded that infographics had a positive and significant effect on students' reading comprehension performance.

Overall, the use of infographics successfully helped students improve their reading comprehension. The visual support made reading easier to understand, reduced students' difficulties, and encouraged them to become more engaged and confident readers. This study shows that infographics are an effective and meaningful teaching medium for enhancing reading comprehension in vocational high school students.

### **5.2 Suggestion**

Based on the results of this research, several suggestions can be offered to English teachers who want to integrate infographics into reading instruction.

#### ***5.2.1 Suggestion for Teachers***

Teachers are encouraged to incorporate infographics as part of their teaching materials. Infographics can be used before, during, or after reading activities to support students in recognizing the structure of the text and understanding its key points. Although infographics help students process information more easily, teachers still need to provide additional reinforcement for areas where students commonly struggle, such as vocabulary and inference. Supporting media like shor

reading passages, vocabulary games, or guided questioning can be used to strengthen students' comprehension before they begin reading more complex texts.

It is also essential for teachers to pay attention to the stages of the reading process. Some students may continue to face difficulties identifying main ideas, specific information, and implied meanings even after using infographics. Therefore, constructive feedback is important. Teachers should guide students not only by pointing out incorrect answers but also by explaining the reasons behind them and offering strategies to avoid the same mistakes in the future.

Infographics often make lessons more enjoyable and engaging, but teachers must ensure that students stay on task. Setting clear instructions, time limits, and group roles can help students remain focused during the activity. When managed effectively, the classroom becomes a supportive space where students feel comfortable sharing ideas and working collaboratively.

Teachers are also recommended to select or create infographics that match students' reading level and interests. Infographics with familiar topics will make students more connected to the material and make comprehension easier. For vocational school contexts, teachers can choose topics that relate to students' majors so the learning experience becomes more relevant and meaningful.

### ***5.2.2 Suggestion for Future Researcher***

Although this study has shown that infographics can improve students' reading comprehension, several points may be considered for future research. First, future researchers are encouraged to carry out the study over a longer period of time. The treatment in this research was conducted within a limited number of meetings, which may not have been sufficient for students to demonstrate their full development. A longer intervention would allow students to become more accustomed to using infographics and apply reading strategies more consistently, leading to more stable improvements in comprehension.

Another interesting finding was that some students heavily relied on their prior knowledge as stated by Sutarsyah (2015) to understand the infographic, but they did not always relate it properly to the reading text. This sometimes caused

misunderstanding or incomplete interpretation. For this reason, future researchers may want to include explicit strategy training, such as teaching students how to connect visual clues with textual information effectively.

In addition, future researchers may consider integrating technology-based tools, such as digital infographic makers, online learning platforms, or interactive reading applications. Technology may help students become more engaged and make the learning process more dynamic. It may also make it easier to collect students' responses, monitor progress, and support collaborative learning.

Lastly, future studies would benefit from including qualitative data such as interviews, student journals, classroom observations, or teacher reflections. These sources can provide richer information about students' behavior, motivation, and challenges when learning with infographics. Qualitative data can also help researchers understand how and why infographics influence students' comprehension processes.

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