

## **The Effectiveness Of Infographics Towards Students' Reading Comprehension**

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### **Abstract**

The aims of this research are (1) to find out how to apply infographics towards students' reading comprehension; (2) to find out the effect of using infographics as learning media towards students' reading comprehension; (3) to find out students' respond to the use of infographics as learning media. This research method is quantitative with a pre-experimental research design type of one-group pretestposttest design. The instruments in this study were tests, questionnaires, and observations. The test consists of a pretest, which is a test before being given treatment, and a posttest, which is a test after being given treatment. The treatment in this study is the application of infographics as learning media in procedure text. The results show that (1) the application of infographics can be applied to a text to clarify the contents of the text because it is supported by the visual elements of the infographics. The application of infographics in this study is to apply infographics to procedure text. The procedure text is presented in infographic form supported by illustrations and visual elements on infographics. (2) there is an effect of using infographics as learning media towards students' reading comprehension. It can be seen from the results of the paired sample test. With the significant value or Sig. (2-tailed) is 0.00 which is less than 0.05 it means that  $H_0$  is accepted. Another analysis of the paired sample test by comparing the t-test with the t-table, where  $t_{test} > t_{table}$  is  $9.724 > 2.093$  it means that  $H_0$  is accepted. Supported by the pretest-posttest results, can be seen from the difference in pretest and posttest values where the pretest has a mean of 34.75 and the posttest has a higher value of 63.757. (3) there was a good response from students towards the use of infographics as learning media. Students gave a positive response from the use of infographics as an effective medium in helping reading comprehension. This can be seen from the percentage (80%) of students agreeing with the statements in the questionnaire "I feel infographics can help me understand the text". Supported by the results of observations with an average of 98%, it can be interpreted very good. Based on the analysis, it can be concluded that infographics are an effective learning media towards students' reading comprehension.

**Keywords:** Infographic, Reading, Reading Comprehension

### **Abstrak**

Tujuan dari penelitian ini adalah (1) untuk mengetahui bagaimana penerapan infografis terhadap pemahaman membaca siswa; (2) mengetahui pengaruh penggunaan media pembelajaran infografis terhadap pemahaman membaca siswa; (3) untuk mengetahui respon siswa terhadap penggunaan infografis sebagai media pembelajaran. Metode penelitian ini adalah kuantitatif dengan desain penelitian pra eksperimen tipe one group pretestposttest design. Instrumen dalam penelitian ini adalah tes, angket, dan observasi. Tes terdiri dari pretest yaitu tes sebelum diberikan perlakuan dan posttest yaitu tes setelah diberikan perlakuan. Perlakuan dalam penelitian ini adalah penerapan infografis sebagai media pembelajaran pada teks prosedur. Hasil penelitian menunjukkan bahwa (1) penerapan infografis dapat diterapkan pada sebuah teks untuk memperjelas isi teks karena didukung oleh elemen visual dari infografis tersebut. Penerapan infografis dalam penelitian ini adalah menerapkan infografis pada teks prosedur. Teks prosedur disajikan dalam bentuk infografis yang didukung oleh ilustrasi dan elemen visual pada infografis. (2) ada pengaruh penggunaan media pembelajaran infografis terhadap pemahaman membaca siswa. Itu bisa dilihat dari hasil uji sampel berpasangan. Dengan nilai signifikan atau Sig. (2-tailed) adalah 0,00 yang lebih kecil dari 0,05 berarti  $H_0$  diterima. Analisis lain uji sampel berpasangan dengan membandingkan uji-t dengan t-tabel, dimana  $t_{hitung} > t_{tabel}$  yaitu  $9,724 > 2,093$  berarti  $H_0$  diterima. Didukung dengan hasil pretest-posttest, dapat dilihat dari perbedaan nilai pretest dan posttest dimana pretest memiliki rata-rata 34,75 dan posttest memiliki nilai lebih tinggi yaitu 63,757. (3) terdapat respon yang baik dari siswa terhadap penggunaan infografis sebagai media pembelajaran. Siswa memberikan respon positif dari penggunaan infografis sebagai media yang efektif dalam membantu pemahaman bacaan. Hal ini terlihat dari persentase (80%) siswa yang setuju dengan pernyataan dalam angket "Saya merasa infografis dapat membantu saya memahami teks". Didukung dengan hasil observasi dengan rata-rata 98% dapat diartikan sangat baik. Berdasarkan analisis, dapat disimpulkan bahwa infografis merupakan media pembelajaran yang efektif terhadap Pemahaman Membaca Siswa.

**Kata Kunci:** Infographic, Reading, Reading Comprehension

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## INTRODUCTION

English is an international language, many people around the world use English as a communication tool. In Indonesia, English has become a compulsory subject that is learned in schools. Moreover, as the English Age progressed, it expanded and was attached to all aspects, related to technology, economy, social, etc. The elements of learning English are speaking, reading, writing, listening, grammar, pronunciation, and vocabulary. As we know reading is a window to the world, the more we read, the more information we will get. In learning English, reading is an important element. When reading an English text, our English skills increase such as getting new vocabulary, knowing how to write a word, and how to read an English word.

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. Reading media and methods used can affect reading comprehension. Along with the development of the times, reading media are also very diverse. Supported by increasingly sophisticated technology, the presentation of a reading text or information is increasingly interesting. One of them is infographics. Infographics are media for presenting text or information that is packaged attractively with elements that support the text such as images, graphics, tables, and others. The presentation of text or information in infographics is easy to understand because the illustrations of these supporting elements make the reader interested and easy to understand the text. Infographics can increase students' reading interest, with illustrations and animations in the infographic.

The use of infographics can help the students' reading comprehension. Infographics can facilitate students in learning. Make it easier for students when reading a text with elements in infographics. Infographics can be used as learning media with various visual elements contained in infographics. These visual elements can attract students' attention to be interested in reading a text. The visual elements in the infographic can simplify the information contained in a text, so that it is easier for students to understand the reading and remember the information.

Some relevant research was conducted related to this case. Department of Computer and Instructional Technologies Education at Ataturk University by (Yildirim, Cakir, & Askun, 2016) as cited in (Alqudah, Bidin, & Hussin, 2019) was doing the research on 59 students who expressed their thoughts on utilizing and reading infographics during the learning process filled out a questionnaire. According to the survey, students thought infographics were more helpful than text and made learning easier, especially when they presented information in a specific context. The students also expressed a desire to share infographics with friends and peers who may share their interest in graphical

technology.

Based on real conditions that occurred in SMK Al-Wutsqo during English class, students were less interested in English and felt that English was difficult to understand. Students also have difficulty reading English and understanding the contents of a text. In this case, students need interesting and effective media and learning methods as supporting elements to help students' reading comprehension.

Based on the background of the research, the researcher is interested to do the research with the title "The Effectiveness of Infographics Towards Students' Reading Comprehension".

## METHOD

The variable is a problem that has been the investigators' primary focus for analysis, variable as an attribute of a group of people or an object that exhibits variation within that group of people (Sugiyono, 2004). Based on the research title raised "The Effectiveness of Infographics Towards Students' Reading Comprehension", at the Eleventh Grade of SMK Al-Wutsqo in The Academic Year 2022/2023), the variables studied can be divided into two, namely:

1. Independent Variable (Variable X). The Independent Variable in this research is Infographics.
2. Dependent Variable (Variable Y). The dependent variable in this research is Reading Comprehension.

This research method is quantitative with a pre-experimental research design type of one-group pretest-posttest design. A pre-experimental design is one in which only one group or class receives pretest and posttest (Sugiyono, Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D, 2014). Pretest and posttest became the measure of this research. Pretest was carried out before being given treatment and posttest was carried out after being given treatment, to find out the differences and the effect of infographics on students' reading comprehension. The research pattern is a one-group pretest and posttest design according to (Sugiyono, 2013) as follows.

Population is a term for the characteristics of a thing to be studied. (Surahman, Rachmat M, & Supardi S, 2016).The students in this study were all in the eleventh grade of student of SMK Al-Wutsqo in the academic year 2022/2023. There are 23 pupils in the population.

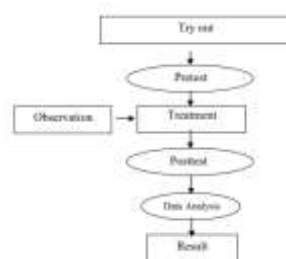


Figure 1. Procedure of The Research

The figure above is an overview of the procedure of the research which was adapted from

(Susanti, 2013). The table shows the initial process in this study, namely the try out which was carried out to test the research instrument and became a matter of pretest-posttest based on the analysis that had been carried out. The second procedure is the pretest, the pretest is carried out to determine the ability of students before being given treatment. The next procedure is treatment, students are given 3 treatments related to the material using infographics in the procedure text, and observations are also made when the treatment takes place. The next step is the posttest, which is a test carried out after treatment, the aim is to determine the effect or effectiveness of infographics on students' reading comprehension. The next procedure is data analysis, to find out the results of the research that has been done. After this, the results of the research are discussed in detail and conclusions are made.

## RESULT AND DISCUSSION

To determine the pretest and posttest questions, the researcher conducted a try-out first with class 12. The results of the try-out were then analyzed for validity, reliability, index difficulty, and distinguishing power. This try-out consists of 40 questions which are then selected based on the results of the analysis into 20 questions.

Table. 1 Recapitulation of Instrument Test

No	Validity			Reliability Value and Interpretation	Difficulty Index		Distinguishing Power	State
	Korelasi	Signifikan	Valid		Value	Interpretation		
1	0.589	Sangat Signifikan	Valid	0.39 Fair Accurate/Fair Good	73.68	Mudah	60.00	Used
2	0.693	Sangat Signifikan	Valid		63.16	Sedang	80.00	Used
3	0.598	Sangat Signifikan	Valid		52.63	Sedang	80.00	Used
4	0.64	Sangat Signifikan	Valid		47.37	Sedang	80.00	Used
5	0.43	Sangat Signifikan	Valid		5.26	Sangat Sulit	20.00	Used
6	0.609	Sangat Signifikan	Valid		71.58	Sedang	80.00	Used
7	0.579	Sangat Signifikan	Valid		68.42	Sedang	60.00	Used
8	0.684	Sangat Signifikan	Valid		47.37	Sedang	80.00	Used
9	0.429	Sangat Signifikan	Valid		36.84	Sedang	60.00	Used
10	0.403	Sangat Signifikan	Valid		15.79	Sulit	60.00	Used
11	0.403	Sangat Signifikan	Valid		15.79	Sulit	40.00	Used
12	0.441	Sangat Signifikan	Valid		47.37	Sedang	60.00	Used
13	0.795	Sangat Signifikan	Valid		36.84	Sedang	100.00	Used
14	0.511	Sangat Signifikan	Valid		42.11	Sedang	60.00	Used
15	0.331	Signifikan	Valid		10.33	Sangat Sulit	20.00	Used
16	0.466	Sangat Signifikan	Valid		31.58	Sedang	40.00	Used
17	0.665	Sangat Signifikan	Valid		26.32	Sulit	60.00	Used
18	0.33	Signifikan	Valid		42.11	Sedang	40.00	Used
19	0.45	Sangat Signifikan	Valid		5.26	Sangat Sulit	20.00	Used
20	0.309	Signifikan	Valid		21.05	Sulit	40.00	Used

Research finding shows the results of the analysis of the research that has been done. The results of the analysis are based on the research instruments that used namely test, questionnaire, and observation.

### 1. Quantitative Data Analysis

In this section are the results of the pretest and posttest. The pretest was given before treatment and the posttest was given after treatment, to find out the effectiveness of infographics on students' reading comprehension skills. The following are the results of the pretest and posttest in this study.

Table 2. The Result of Pretest-Posttest

Students	Pretest	Posttest
1	50	80
2	50	80
3	15	25
4	35	70
5	20	30
6	20	40
7	45	65
8	25	60
9	50	75
10	35	80
11	10	55
12	45	60
13	20	55
14	25	50
15	55	65
16	10	70
17	45	85
18	50	90
19	35	65
20	55	75

The table above is the existing pretest and posttest results followed by 20 students. The results of the pretest and posttest have been analyzed through normality and homogeneity test. The test aims to find out whether variables or data are normally distributed or not and the data is homogeneous.

Table 3. Normality Test and Homogeneity Test

One-Sample Kolmogorov-Smirnov Test			Test of Homogeneity of Variances					
		Unstandardized Residual			Levene Statistic	df1	df2	Sig.
N		20	nilai test	Based on Mean	.005	1	38	.945
Normal Parameters <sup>a,b</sup>	Mean	.0000000		Based on Median	.000	1	38	1.000
	Std. Deviation	11.32062222		Based on Median and with adjusted df	.000	1	32.765	1.000
Most Extreme Differences	Absolute	.129	Based on trimmed mean	.001	1	38	.970	
	Positive	.066						
	Negative	-.129						
Test Statistic		.129						
Asymp. Sig. (2-tailed)		.200 <sup>c,d</sup>						

Based on the normality test results above, it can be seen that the pretest and posttest normality tests are 0.200, which means that the data are normally distributed and homogeneity tests are 0.970, which means that the data are homogeneous.

2. Result of Data Analysis

To find out the average difference between the 2 samples, a paired samples test was carried out. In this study is to look at the differences in pretest and posttest scores before and after being given treatment. Based on the criteria of the hypothesis of the paired sample test.

- a. Pretest and posttest scores before and after being given treatment. Based on the criteria of the hypothesis of the paired sample test.
- b. If the value (p) < Sig (0,05) it's mean that Ha is accepted

Table 4. Paired Samples Test

Paired Samples Test									
		Paired Differences					T	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pre – post	-29.000	13.338	2.982	-35.242	-22.758	-9.724	19	.000

There are several ways to analyze the results of the paired sample test, the researcher uses 2 analyzes. The first is to compare Sig. (2-tailed) with the criteria of the hypothesis of the paired sample test and the second is to compare the t-test with the t-table.

The table results show that the significance value or Sig. (2-tailed) is 0.00 which is less than 0.05, its mean that Ha is accepted. Where Ha: There is a significant effect towards students' reading comprehension at the Eleventh grade of student of SMK Al-Wutsqo in the academic year 2022/2023. It can be concluded that there is a significant effect of the use of infographics on students' reading comprehension.

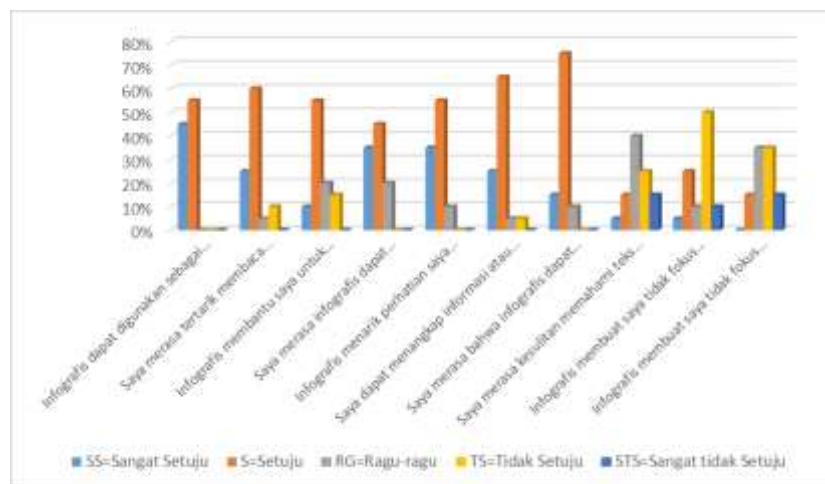
Table 5. T-test

Component	t-test	t-table	Description
Reading Comprehension	9.724	2.093	Significance

Based on the results of the table above it is known that the t-test is 9.724 and t-table is 2.093 which means  $t\text{-test} > t\text{-table}$   $9.724 > 2.093$ . It can be concluded that the hypothesis or Ha is accepted, namely that there is a significant effect of the use of infographics on students' reading comprehension.

### 3. Analysis Attitude Data

The questionnaire consists of 20 questions related to students' opinions regarding the use of infographics on students' reading comprehension. Students answered questions based on predetermined score criteria, namely strongly agree, agree, undecided, disagree, and strongly disagree.



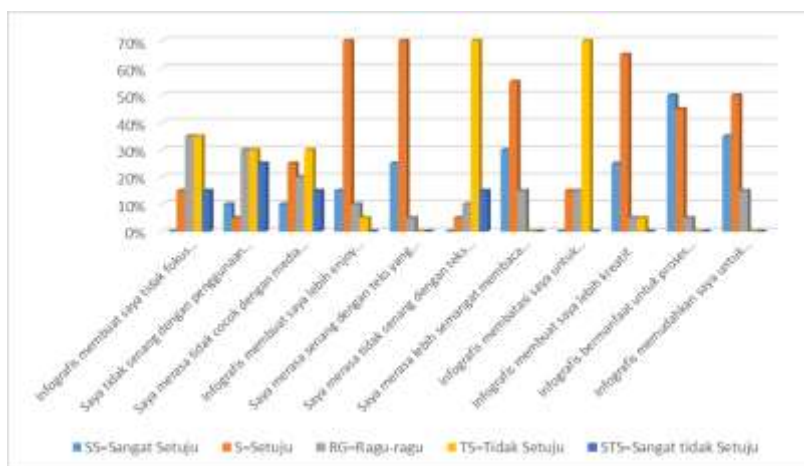


Figure 2. Result of Students' Questionnaire

The Effectiveness of Infographics Towards Reading Comprehension

4. Observation Analysis

The observation consisted of 20 questions related to activities that occurred in class during the research. Students answered questions based on predetermined score criteria, namely strongly agree, agree, doubt, disagree, and strongly disagree.

Table 6. The Result of Teacher Activities Observation

No	Observation Criteria	Meetings		
		1	2	3
<b>I</b>	<b>Preparation</b>			
1.	Guru mempersiapkan Rencana Pelaksanaan Pembelajaran (RPP)	5	5	5
2.	Guru mempersiapkan media pembelajaran.	5	5	5
<b>II</b>	<b>Introduction</b>			
3.	Guru membuka pelajaran dengan berdo'a	5	4	5
4.	Guru menjelaskan tujuan pembelajaran pada pertemuan tersebut.	5	4	5
5.	Guru memotivasi/menarik perhatian siswa untuk mengikuti proses pembelajaran.	5	5	5
<b>III</b>	<b>Core Activities</b>			
6.	Guru menjelaskan materi Teks Prosedur	5	5	4
7.	Materi pembelajaran sesuai dengan tujuan yang hendak dicapai.	5	5	5
8.	Guru memberikan kesempatan untuk siswa mengidentifikasi materi.	5	5	5
9.	Guru mempersilahkan siswa untuk mengajukan pertanyaan	5	4	5
10.	Guru memperhatikan kemampuan siswa dalam membaca teks prosedur	5	5	5
11.	Guru menggunakan Teknik pembelajaran yang menarik untuk siswa.	5	5	5
12.	Guru memulai pembelajaran menggunakan Teknik pembelajaran yang digunakan.	5	5	5
13.	Guru dan siswa memahami isi bacaan suatu teks prosedur dengan menggunakan teknik pembelajaran yaitu infografis	5	5	5

No	Observation Criteria	Meetings		
<b>IV</b>	<b>Closing</b>			
14.	Guru memberikan kesempatan bertanya untuk siswa.	5	4	5
15.	Guru memberikan arahan untuk pertemuan selanjutnya	5	4	5
16.	Guru menutup pembelajaran dan salam.	5	4	5
<b>V</b>	<b>Atmosphere</b>			
17.	Siswa merasa nyaman dan relaxed.	5	5	5
18.	Waktu sesuai alokasi.	5	5	5
19.	Guru antusias dalam mengajar	5	5	5
20.	Pembelajaran berjalan lancar sesuai RPP.	5	5	5
<b>Total</b>		100	94	99
<b>Percentage</b>		100%	94%	99%

Based on the results of the calculation of observations made by the assessor's observations in the class when the research took place, it can be described that at the first meeting with a percentage result of 100%. The results show that the researcher can carry out the learning process in accordance with the existing lesson plan, then the researcher has prepared learning media. Learning material is conveyed well, so that students understand the material. Researchers provide space for students to ask questions, the class situation is conducive. The introduction of new learning materials and media can be understood by students.

The second meeting, with the results of the observation percentage of 94%. The results showed that the researcher explained the learning material according to the learning objectives, where at this meeting the researcher focused on the application of infographics to procedure text. So that students understand the material and learning media in the classroom. However, the observation researcher considered that the researcher focused on learning materials and media, so that the class situation was not active.

At the third or last meeting, with a percentage of 99%. The observer assessed that the researcher was able to convey the learning material and the students understood the learning. Students look enthusiastic with the newly applied learning media. At the third meeting there was an increase from the meeting at the second treatment.

Based on the results of calculations and analysis, the average results of observations of activities in the class get a median value of 98%. It can be interpreted Very Good. The observer considers that infographics are one of the effective learning media for students' reading comprehension.

### **Discussion**

Based on the results of the research, it can be concluded that there is an effect of using infographics on students' reading comprehension. This is based on several analysis results, one of which shows a significant difference in the pretest and posttest scores. Posttest scores increased or were better than pretest scores. The analysis results showed the pretest there were 9 students or 45% classified the poor category, 11 students or 55% classified the very poor category. In the posttest 1



student or 5% classified excellent category, 6 students or 30% classified good category, 7 students or 35% classified fairly category, 3 students or 15% classified poor category, 3 students or 15% classified very poor category. It means that there are differences in the results of the pretest and posttest, where the posttest score is higher than the pretest score.

Then, from the results of the paired sample test, it can be seen that the significance value or Sig. (2-tailed) is 0.00 which is less than 0.05, it means that  $H_a$  is accepted. Where  $H_a$ : There is a significant effect towards students' reading comprehension at the Eleventh grade of student of SMK Al-Wutsqo in the academic year 2022/2023. Then analyze the paired sample test by comparing the t-test with the t-table, where the t-test > t-table is  $9,724 > 2,093$  with the criteria If the t-test > t-table it's mean that  $H_a$  is accepted, if the t-test < t-table it means that  $H_a$  is rejected. Based on the results of the paired sample test analysis, it can be concluded that the hypothesis in this study is accepted.

Based on the results of the questionnaire analysis, it can be concluded that students feel the benefits and give good responses from the use of infographics as learning media. One of the statements in the questionnaire is "I feel that infographics help me understand the text". Based on percentage (80%) students agree with the statement. Meanwhile, as many as 20% of students answered undecided to this statement. Interpretation of the results of the questionnaire students feel helped by the use of infographics on their reading comprehension, but some students have undecided about that. This is in line with research conducted by (Yildirim, Cakir, & Askun, 2016) stated the learning process can be aided by the use of infographics, which have features that are engaging and easy to understand.

Another statement in the questionnaire "I have difficulty understanding the text presented in an infographic". It showed that some students (40%) found it easier to understand text presented in infographics. 40% of students are unsure about the statement "I have difficulty understanding the text presented in an infographic". The percentage results (20%) of students find it difficult with the text presented in infographics. As in previous finding on (Yildirim, Cakir, & Askun, 2016) that the message design rules for the use of a combination of text and visuals should be taken into consideration while creating material in order to leverage this feature of infographics. It needs to be considered and prepared when using infographics, so that the message or information contained in the text is conveyed and understood properly by the reader. The average result of class activity observations during the treatment of 3 meetings was 98%. It can be interpreted very good. It can be concluded that when researchers carry out the treatment in the core class, the lessons are conveyed well and students understand the learning material. Infographics are one of the effective learning media for students' reading comprehension based on analysis.

## **CONCLUSION**

This research concerns the effectiveness of infographics on students' reading comprehension. The application of infographics in this study through English learning materials, namely text

procedure. Procedure text itself is a text that contains steps to achieve the desired goal, such as how to make something or how to use something. This procedure text can be presented using infographics, and infographics help clarify the contents of the procedure text through the visual effects in the infographics. Student responses were good towards the use of infographics in the procedure texts they read. One of the formulations of the problem in this study is “How is the infographics applied towards students' reading comprehension?”. The answers from the research formulation are answered in the description above.

Based on the results of the analysis of the research, there is an effect of using infographics on students' reading comprehension. The posttest value is greater than the pretest value, where the pretest has a mean of 34.75 and the posttest has a higher value of 63.757. The analysis results showed the pretest there were 9 students or 45% classified the poor category, 11 students or 55% classified the very poor category. In the posttest 1 student or 5% classified excellent category, 6 students or 30% classified good category, 7 students or 35% classified fairly category, 3 students or 15% classified poor category, 3 students or 15% classified very poor category. It means that there are differences in the results of the pretest and posttest, where the posttest score is higher than the pretest score.

Next, from the results of the paired sample test. With the significance value or Sig. (2-tailed) is 0.00 which is less than 0.05. Based on the criteria of the hypothesis of the paired sample test. If the value  $(p) > \text{Sig} (0.05)$  it means that  $H_a$  is rejected and if the value  $(p) < \text{Sig} (0.05)$  it means that  $H_a$  is accepted. Supported by paired sample test analysis by comparing t-test with t-table, where t-test > t-table is  $9.724 > 2.093$  with criteria if t-test > t-table it means that  $H_a$  is accepted, if t-test < t-table it means that  $H_a$  is rejected. It can be concluded that the hypothesis in this study is accepted. The hypothesis in this study is  $H_a$ : There is a significant effect towards students' reading comprehension at Eleventh grade of student of SMK Al-Wutsqo in the academic year 2022/2023.  $H_0$ : There is no significant effect towards students' reading comprehension at Eleventh grade of student of SMK Al-Wutsqo in the academic year 2022/2023. The above statement answers the second formulation of the problem in this study, namely “How is the effect of using infographics as learning media towards students’ reading comprehension?”.

The conclusion from the results of the Attitude Data Analysis, namely the questionnaire and observation, received a positive response. In the questionnaire, students gave good responses to infographics. Students felt helped by using infographics. Students feel interested in the elements contained in infographics, so students are more enthusiastic about reading. Based on the results of observations with an average of 98%, it can be interpreted very good. The researcher got a good response from the observation assessor and the delivery of material in class to students was conveyed well. The explanation above can answer the third problem formulation in this study, namely “How do the students’ respond to the use of infographics as learning media?”

Based on the analysis of all instruments, it can be concluded that infographics are an effective learning media to help students' reading comprehension

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