CHAPTER 4
RESEARCH RESULT AND DISCUSSION

This chapter presents the findings and discussion to answer the research hypothesis. The aim of the research is to investigate the influence of Duolingo towards junior high school students' vocabulary mastery. After collecting the data, the researcher analyzed it with several steps which are descriptive statistics, normality, homogeneity, and independent sample t-test by using SPSS as follows:

4.1 Research Result

4.1.1 Descriptive Statistics

Descriptive statistics was conducted to discover the minimum and maximum score, and mean in both control and experiment class. The table below shows the finding of descriptive statistics in this research:

Table 4. 1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest Control	27	40	80	63.44	13.209
Posttest Control	27	60	100	78.52	10.832
Pretest Experiment	24	40	80	66.12	10.301
Posttest Experiment	24	73	100	85.29	10.019
Valid N (listwise)	24				

From the table above, it can be seen that the minimum score of pretest both from the control and experiment class is 40 and the maximum score of pretest both from the control and experiment is 80. They have the same minimum and maximum score.

The mean score of pretest control is 63.44 and the posttest is 78.52. In addition, the mean score of the pretest experiment is 66.12 and the posttest is

85.29. The mean score of the posttest from experiment class is higher than the control class.

4.1.2 Normality

Normality test was conducted to check whether the data is in normal distribution or not. Here is the table as the result of normality test:

Table 4. 2 Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelas	Statistic	Df	Sig.	Statistic	df	Sig.
Hasil Belajar	Pretest Control	.173	27	.038	.889	27	.008
	Posttest Control	.186	27	.017	.942	27	.134
	Pretest Experiment	.164	24	.093	.929	24	.094
	Posttest Experiment	.160	24	.116	.877	24	.007

a. Lilliefors Significance Correction

To know if the data distribution is normal or not, the researcher compared the sig value from Kolmogorov-Smirnov to $\alpha = 0.05$. If sig value > 0.05, it means the data distribution is normal. Meanwhile, if the sig value < 0.05, it means the data distribution is not normal.

From the table 4.2, all the sig values from Kolmogorov-Smirnov are higher than 0.05. As a result, the data distribution is normal and the researcher can use the statistic parametric. The researcher used an independent sample t-test because this research has two groups.

4.1.3 Homogeneity Test

Homogeneity test was conducted to discover the data whether it is homogen or not. This is the table as the result of homogeneity test:

Table 4. 3 Homogeneity

		Levene Statistic	df1	df2	Sig.
Hasil Belajar	Based on Mean	.000	1	49	.983
	Based on Median	.002	1	49	.969
	Based on Median and with adjusted df	.002	1	46.051	.969
	Based on trimmed mean	.001	1	49	.980

To check if the data is homogen or not, the researcher compared the Significance based on mean to α = 0.05. If sig based on mean > 0.05, it indicates that the variances data of posttest control and posttest experiment is homogeny. Meanwhile, if sig based on mean < 0.05, it indicates the data is not homogenous. As shown in the table, the sig based on mean 0.983 > 0.05 which means that the variances data of posttest control and posttest experiment is homogeny.

4.1.4 Independent Sample T-test

Independent sample t-test is conducted to answer the research hypothesis whether there is an influence of using Duolingo towards Junior High School Students' vocabulary mastery or not.

Table 4. 4 Independent Sample T-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Hasil Belajar	Equal variances assumed	.000	.983	-2.308	49	.025	-6.773	2.934	-12.669	-.877
	Equal variances not assumed			-2.319	48.913	.025	-6.773	2.920	-12.642	-.904

To answer the hypothesis, the researcher compared the sig (2-tailed) from equal variances assumed with α = 0.05. If the sig (2-tailed) < 0.05, it means the Hα is accepted and the Ho is rejected. Meanwhile, if sig (2-tailed) > 0.05, it means the Hα is rejected and the Ho is accepted.

From the table above, it can be seen that sig (2-tailed) from equal variances assumed is 0.025 < 0.05 it means that there is significant difference between the posttest score of control and experiment. Therefore, the alternative hypothesis (Hα) is accepted and the null hypothesis (Ho) is rejected.

4.2 Discussion

The result of the posttest from experiment class 85.29 is higher than control class 78.52. In addition, the result of an independent sample t-test showed that the sig (2-tailed) value from equal variances assumed is .025. It is lower than 0.05. It means there is a significant difference between the posttest score of control and experiment class. Therefore, the Hα is accepted and the Ho is rejected.

The use of technology tends to be crucial in language learning, it helps the students enjoy and excited to learn language (Ahmadi, 2018). In addition, mobile assisted language learning can be used as the integration of technology to teach English skills for instance listening, speaking, reading, writing, grammar, pronunciation and vocabulary (Miangah & Nezarat, 2012). Further, Irzawati (2023) she overviewed the positive effects of using Duolingo towards EFL learning activities. She pointed out that Duolingo gives good effects in mastering vocabulary, grammar, as well as language skills for instance listening, speaking, reading and writing. Additionally, it increases students' learning motivation. Thus, the researcher used Duolingo to teach vocabulary and to investigate its influence towards junior high school students at MTs in Majalengka because the teacher has not used it, the student's still lack vocabulary, feel bored and hard to learn English, and there is no research about this before at this school. The researcher used aspects in knowing words by Nation (2000) and vocabulary teaching principles by Nation (2005) in doing this research.

This research result is aligned with the previous studies which investigated Duolingo towards vocabulary mastery. Aulia, Wahjuningsih and Andayani (2020) they conducted research to investigate the effect of Duolingo on students' vocabulary mastery at Jember Junior High School. The result showed that there is a significant difference between the students who taught using Duolingo and who did not. It means that Duolingo has an effect on their vocabulary mastery. Fatah (2019) investigated the effect of using Duolingo at SMP Islam Taman Quraniyah Jakarta Selatan. His research result proved that

there is an effect by using Duolingo in developing the students' vocabulary mastery. Furthermore, Amalia (2019) investigated Duolingo at MTs Negeri 3 Medan and the result showed that Duolingo gives an effect towards the students' vocabulary.

Furthermore, Ajisoko (2020) used Duolingo to explore its influence towards the Borneo University of Tarakan students. There is significant improvement between the pre-test and post-test scores. Another research conducted by Ambara (2020) it showed that the use of Duolingo improves the students' vocabulary mastery at SMAN 2 Karangan. He pointed out that Duolingo also helps the students to memorize the vocabulary well.

Moreover, there is a qualitative research method explored about the students' perception towards Duolingo. Jaelani and Sutari (2020) pointed out that the students feel easy to understand and can improve their English vocabulary. It motivates and makes them excited during the learning activity.

From the discussion, it can be inferred that Duolingo does not only influence junior high school students' vocabulary mastery, but it also influences senior high school and college students'. Duolingo also has good effects based on the perception of the students in qualitative research.