

**THE EFFECTIVENESS OF USING ANIMATION BASED ON PLOTAGON STORY IN
TEACHING ARABIC LANGUAGE VOCABULARY BASED ON THE THEORY OF
MULTIPLE INTELLIGENCES.**

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ARTICLE INFO	ABSTRACT
Article History: Received 15.08.2025 Accepted 15.10.2025 Published 15.11.2025 Keywords: Animation, Plotagon Story, Arabic Language Vocabulary Learning, Multiple Intelligences.	<i>This research is based on the problems faced by students at Pembangunan Islamic Junior High School Jakarta in learning Arabic. Based on observations, the researcher found that there is a lack of student activity in Arabic language learning. Furthermore, it was found that this school had implemented Multiple Intelligences research before the learning process began, but the Arabic teachers at this school had not applied it in the classrooms yet. This caused the teaching methods and strategies used by the teachers to be less suitable for the students' learning styles, leading to boredom and difficulty in learning. The purpose of this research is to examine the effectiveness of using animation media based on Plotagon Story in teaching Arabic language vocabulary grounded in the theory of multiple intelligences for students at Pembangunan Islamic Junior High School. This study uses a quasi-experimental design based on a quantitative method. The research population consists of eighth-grade students at Pembangunan Islamic Junior High School, totaling 178 students. The researcher selected 27 students as the experimental group and 28 students as the control group. The data collection methods used by the researcher include direct observation, personal interviews, tests, document studies, and questionnaires. After analyzing the data, the researcher found the average scores of the pre-test and post-test for teaching Arabic language vocabulary. The experimental group had a mean difference of 37.9 in Arabic language vocabulary teaching, while the control group had a mean difference of 21.2. This indicates that the mean score of the experimental group in Arabic language vocabulary teaching is higher than that of the control group. The data analysis using the t-test showed that the calculated t-value (t₀) for Arabic language vocabulary teaching was 5. The table value at a 5% significance level is 1.674 and at a 1% significance level is 2.398. This indicates that the null hypothesis (H₀) is rejected, and the alternative hypothesis (H_a) is accepted. This means that the use of animation media based on Plotagon Story in teaching Arabic language vocabulary based on the theory of multiple intelligences is statistically effective for the students at this school.</i>

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1. Introduction

Learning Arabic has its own obstacles for different reasons, including obstacles and challenges. An obstacle is the lack of foreign language proficiency in society. There is also the challenge of limited facilities, especially educational media. However, there are also other obstacles, such as teacher's ability and weak motivation of students, among others. Therefore, these obstacles and challenges must be removed so that Arabic language learning in Indonesia becomes more efficient and effective. Effective and efficient learning leads to quality Arabic language graduates. Media learning in Arabic language education must be improved in terms of type and variety of use. Learning Arabic will form clear skills for students, namely the skills of listening, speaking, reading, and writing in Arabic.¹

On the other hand, he knows that media is one way to optimize learning activities. Every learning activity in the classroom, every teacher wants their activities to have a good result in the sense of the indicators in the event lecture module. In general, if learning activities are formally held in schools, nothing is meant but to guide changes in each student in a planned way, in terms of knowledge, skills, and attitude. The interactions that take place during the learning process are influenced by the environment namely students, teachers, school library staff, school administrators, and materials or materials in the form of: Books, modules, publications, magazines, video and audio recordings and the like, and various educational resources and facilities such as: Overhead projectors, audio and video tape recorders, radio, television, computers, libraries, laboratories, learning resource centers, etc.²

In order to achieve maximum results, teachers need to consider the various supporting factors that can support the success of an education program. For this reason, the educational process needs to create an atmosphere in which students are interested and actively participate in the process. In terms of efforts to create this atmosphere, media is one of the factors that determine the success of teaching. The use of media in Arabic language teaching is based on the theory that the total percentage of the amount of knowledge, skills, and attitudes possessed by the highest and highest person through the senses sees and experiences itself directly, while the rest is through hearing and other senses.³

So that learning media can be used effectively and efficiently in achieving the goal of preparation before using it and a calm atmosphere when using it. The media used should be adapted to the students' conditions according to the material taught. The media used in learning Arabic is not just one type, as this may make students feel bored. Thus, it can be concluded that media is an integral part of the learning process that cannot be separated in order to achieve educational goals in general and learning goals in schools in particular.

In teaching Arabic or a foreign language, there are general and special methods and various means that the teacher uses to achieve certain educational goals in the Arabic language. The teacher should choose the appropriate method and the appropriate conditions in all societies. As is well known, the goal of language education, whether teaching the mother tongue or teaching a foreign language, is to develop the four language skills of listening,

¹ Kisbiyanto, *Media Pembelajaran Bahasa Arab*, Jurnal Pendidikan Bahasa Arab Jurusan Tarbiyah STAIN KUDUS Vol. 3 No. 2, Juli-Desember 2011, 308.

² Azhar Arsyad, *Media Pembelajaran*, (Jakarta: PT. Raja Grafindo Persada, 2007), 1.

³ Soenjoyo Dirjo Soemarto, *Dalam Azhar Arsyad, Bahasa Arab dan Metode Pengajarannya: Beberapa Pokok Pikiran*, (Yogyakarta: Pustaka Pelajar, 2003), 75.

speaking, reading, and writing. The basis of language education is the students' ability to use the language positively and negatively.⁴

The results of interviews conducted with the Arabic language teacher at Pembangunan Islamic Middle School Jakarta, Mr. Momon Mujiburahman. Information was obtained that the teacher uses tools in the learning process, such as *Power point presentation*, TV, *tablet*, and *e-module*, but rarely uses animated videos and does not use diverse methods in the learning process, this makes some students' inclinations weak in learning Arabic language.

From the results of the interview, it was learned that students still have low interest and low participation in learning activities. To attract attention and increase students' interest in participating in learning the Arabic language, it is recommended that the teacher use an innovative teaching method in the learning process such as animation. In this school, *Multiple Intelligences Research* was applied to the students before the beginning of the learning process, but the Arabic language teachers still did not apply education based on the theory of multiple intelligences. This is a reason for the students' lack of interest in learning the Arabic language.

In this context, the use of innovative instructional media is crucial. Animation, for example, has been proven to create a more engaging and interactive learning environment. Previous studies support this claim. Oktariana (2014) demonstrated that animation can improve students' speaking skills.⁵ Thohir, Muslimah, & Musyafa'ah (2021) confirmed that Plotagon Story effectively supports Arabic speaking skills in line with KMA 183/2019 standards.⁶ Similarly, Guzman & Cuellar (2019) found that Plotagon positively influenced students' writing achievement in English.⁷ These findings suggest that Plotagon Story is a promising digital animation tool for language learning.

At the same time, Howard Gardner's theory of Multiple Intelligences (MI) provides a strong pedagogical foundation. This theory categorizes human intelligence into nine types: linguistic, logical-mathematical, visual-spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, naturalist, and existential. Kusuma (2021) showed that vocabulary instruction based on MI was highly effective, with significant N-Gain scores.⁸ Likewise, Al-Hayhi (2018) demonstrated that MI-based e-learning can enhance multiple intelligences while improving students' language learning outcomes.⁹ These findings highlight the importance of tailoring learning strategies to students' dominant intelligences.

From the reviewed studies, two key points emerge: (1) digital animation tools such as Plotagon can improve engagement and learning outcomes, and (2) MI-based strategies are effective in accommodating students' diverse learning styles. However, previous research has

⁴ Mikyal Oktariana, *Promoting the teaching of speech skill with animation to students at Darul Uloom Modern Institute Banda Aceh*, Jurnal Ilmiah DIDAKTIKA Agustus 2014, Vol. 15, No. 1, h. 100.

⁵ Mikyal Oktariana, *Promoting the teaching of speech skill with animation to students at Darul Uloom Modern Institute Banda Aceh*, Jurnal Ilmiah DIDAKTIKA Agustus 2014, Vol. 15, No. 1,

⁶ Muhammad Thohir, Kiki Cahya Muslimah, Nihayatin Musyafa'ah. *Prelude Aplikasi Plotagon Story Untuk Keterampilan Berbicara Pada Pembelajaran Bahasa Arab Sesuai Kma 183 Tahun 2019*. Tadarus: Jurnal Pendidikan Islam. No 1, Vol 10/2021, h. 3

⁷ Thomas, P. *Garaging students writing: High-stakes testing, computer, and human touch*. English Journal 94, 2005, h28..

⁸ Handoyo Kusuma, *Designing Instructional Models Based on the Theory of Multiple Intelligences in Vocabulary Teaching*, Faculty of Education, Sharif Hidayatullah Islamic State University Jakarta 2021

⁹ Al-Shima Ahmed Aliyan Al-Hayhi, *The impact of using e-learning on the development of multiple intelligences in English among primary five students in Amman*, 2018. Pp. 14-15.

largely examined these two approaches separately. Few studies have specifically integrated Plotagon Story with MI-based strategies in Arabic vocabulary learning.

This study seeks to fill that gap by examining the effectiveness of using Plotagon Story animation designed according to MI theory in teaching Arabic vocabulary at the junior high school level. It is expected that the findings will not only demonstrate improved vocabulary acquisition but also provide a more engaging, interactive, and intelligence-based model of Arabic language instruction.

2. Previous studies

1. Ahmad Ashfia (2022) – Bachelor's thesis on the effectiveness of Plotagon Story-based animation in teaching speaking skills. Quantitative method with a quasi-experimental design. Results show the experimental group's average score (44.08) is higher than the control group's (25.48). The t-test result ($6.6 > t\text{-table } 5\% (1.677) \text{ and } 1\% (2.408)$), thus H_0 is rejected and H_a is accepted. Conclusion: the use of Plotagon Story is statistically effective.¹⁰
2. Handoyo Kusuma (2021) – Master's thesis on designing instructional models based on multiple intelligences theory for vocabulary teaching. Research and development method. N-Gain results for Let's Learn Arabic book: Part 1 = 0.86 (strong effectiveness) and Part 2 = 0.79 (strong effectiveness). One sample t-test shows H_a is accepted, H_0 rejected. Conclusion: the instructional model is highly effective.¹¹
3. Dirli Yulit Gusman Gamz & Johanni Andrea Morneau Golar (2018) – Journal article on using Plotagon to improve English writing skills of elementary school students. Action research. Initial average score was 23 (28%), increased to 33 (gain of 0.07). Conclusion: Plotagon use resulted in a slight improvement in writing skills, with consideration of students' interests, language levels, and difficulties in designing suitable learning activities.¹²

The researcher summarized from the previous studies that there are similarities and differences in the research topic that the researcher conducted. The similarities are in the use of Plotagon Story-based animation, and there are also similarities in Howard Gardner's theory of multiple intelligences. It is possible to differ from them in the use of Plotagon Story-based animation by the researcher and the research method, as well as in the Arabic language course based on the theory of multiple intelligences. Therefore, what distinguishes the study from previous studies is the effectiveness of Plotagon Story-based animation in teaching vocabulary based on the theory of multiple intelligences.

3. Research methodology and tools

In this research, the researcher used a quantitative research approach. Quantitative research is research that collects, analyzes, and interprets data. The approach used is the

¹⁰ Ahmad Ashfia, *The effectiveness of using Plotagon Story-based animation in speech instruction*, Faculty of Education, Sharif Hidayatullah Islamic State University Jakarta 2022.

¹¹ Handoyo Kusuma, *Designing Instructional Models Based on the Theory of Multiple Intelligences in Vocabulary Teaching*, Faculty of Education, Sharif Hidayatullah Islamic State University Jakarta 2021

¹² Derly Yuleith Guzman Gamez & Johana Andrea Moreno Cuellar, *The Use of Plotagon Story to Enhance the English Writing Skill in Secondary School Students*, Universidad de la Amazonia Florencia Colombia, Jan-Jun 2019, Vol. 21, No. 1

empirical approach, and empirical research is research that seeks to conduct experiments or trials to test hypotheses.¹³

The researcher uses quasi-experimental research (*nonequivalent group design*), which means a type of experimental method that aims to express a causal relationship in a way that the experimental group and the control group are the same.¹⁴ In the study approach, the researcher chose two classes with two groups, an experimental and a control group.

This research will take place in eighth grade at Pembangunan Islamic Middle School Jakarta. The researcher will start this research in August 2024 until October 2024. The study population in this research is eighth grade students from the school for the academic year 2024/2025. In this study approach, the researcher selected two classes from two groups; a control group (Grade 8, Division: E) and an experimental group (Grade 8, Division: F).

The researcher's argument for selecting the sample from these two classes is as follows:

1. The two Arabic language teachers of these classes have the same qualifications, both being graduates of the Arabic Language Education Department.
2. The same subject matter is taught in Arabic, namely vocabulary and dialogue with the theme of daily activities.
3. These two classes are Bilingual Science Classes.
4. The dominant learning intelligence of most students in these classes is visual-spatial intelligence.

The sources for this research are divided into two parts:

1. The primary data, eighth graders at the school, observed the teaching process and the researcher conducted pre and post-tests.
2. Secondary data, interview results, documents, books, internet and journals.

The method of data collection in this research is direct observation, interview, tests, and documentary study.

The data analysis method used by the researcher in this research is the T-test, which is as follows:

$$t_0 = \frac{M_1 - M_2}{\sqrt{\left(\frac{\sum x_1^2 + \sum x_2^2}{N_1 + N_2 - 2}\right) \left(\frac{N_1 + N_2}{N_1 \cdot N_2}\right)}}$$

Observation:

- t_0 : Degree of difference
 M_1 : Average for the experimental group.
 M_2 : Average for the control group.
 $\sum x_1^2$: The dataset for the experimental group.
 $\sum x_2^2$: Data set for the control group.
 N_1 : The sample set for the experimental group.

¹³ Izzuddin Musthafa dan Acep Hermawan, *Metodologi Penelitian Bahasa Arab*, (Bandung: Remaja Rosdakarya, 2020), h. 84.

¹⁴ Moh. Ainin, *Metodologi Penelitian Bahasa Arab*, (Surabaya: Hilal Pustaka, 2010), Hlm. 92.

N_2 : The sample set for the control group.¹⁵

This rule, which the researcher used to analyze the question, has two groups of one sample, where the first group means the experimental group (*experiment class*) and the second group means the control group (*controlled class*).

This analysis is based on the conclusion of a t-test:

- 1) If t_0 is greater than t_t , the alternative hypothesis is accepted, which means that the difference between the two groups indicates a difference in outcome.
- 2) If the result of t_0 is less than t_t , the alternative hypothesis is rejected, meaning that the difference between the two groups does not indicate a difference in outcome.

Table 3.1 Interpreting the effectiveness score

No.	Result criteria	Interpretation
1	0,00 - 2,50	Weak effectiveness (weak impact)
2	2,51 - 5,00	Moderately effective (medium impact)
3	5,01 - 7,50	Effectiveness (strong impact)
4	7,51 - 10,00	Very effective (very strong impact)

After analyzing the data, the researcher presents two hypotheses:

- 1) Alternative Hypothesis (H_a) There is a statistically significant effectiveness of using *Plotagon* Story-based animation based on the theory of multiple intelligences in teaching vocabulary to eighth grade students in this school.
- 2) The null hypothesis (H_0) is that there is no statistically significant effectiveness of using *Plotagon* Story-based animation based on the theory of multiple intelligences in teaching vocabulary to eighth grade students in this school.

The statistical hypothesis is detailed as follows:

- If the arithmetic t_0 is greater than the tabular t_t , the null hypothesis is rejected, meaning that the difference between the two groups is statistically significant.
- If the arithmetic t_0 is smaller than the tabular t_t , the null hypothesis is accepted, which means that the difference between the two groups is not statistically significant.

4. Results of the study

The researcher collected data through personal interview, observation, and testing among the 55 pupils of Grade 8 F and E in Pembangunan Islamic Middle School South Tangerang 2024/2025, numbering 55 pupils. The researcher conducted this research from August 12, 2024, until October 28, 2024, and the researcher observed all students in grade 8 F and E in this school before using the *Plotagon* Story-based animation method to teach Arabic to find out the conditions of the educational process in the school.

Upon direct observation, the researcher found how teaching and learning takes place in this school. The teacher uses the repetition method in teaching vocabulary and dialog, where the teacher reads the vocabulary and dialog first and then the students follow the teacher and repeat what the teacher reads. In addition, the teacher uses traditional and technologically modern videos and games, such as Puzzle, Kahoot, Blooket, etc.

¹⁵Anas Sujiono, *Pengantar Statistik Pendidikan*, (Jakarta: Pt. Raja Grafindo Persada, 2012), Cet. Ke-24, h. 318

The disadvantage of this education is that there is no education in the classroom based on multiple intelligence. In this school, multiple intelligences were tested before the beginning of the education process so that teachers, parents, and students know what the dominant intelligence of the students is.

Based on the observation, the teaching process using the Plotagon Story-based animation tool based on the theory of multiple intelligences was as follows:

1. Teaching and learning vocabulary and dialog using the Plotagon Story-based animation tool based on the theory of multiple intelligences

A. Executing the search process

This research was conducted in sixteen lectures (eight lectures in the experimental class means teaching and learning vocabulary and dialog using the Plotagon Story-based animation method based on the theory of multiple intelligences and eight lectures in the control class means teaching and learning vocabulary and dialog without using the presentation method).

In the first meeting (in both classes), the researcher administered the pre-test, then in the second meeting until the fourth meeting, the researcher taught vocabulary using the Plotagon Story animation based on the Theory of Multiple Intelligences in the experimental class and taught vocabulary without using any presentation in the control class on October 8, 14, and 15, 2024. Then, in the fifth through seventh meetings, he taught dialogue using the Plotagon Story-based animation based on the Theory of Multiple Intelligences in the experimental classroom and taught dialogue without using any presentation in the control classroom on October 21, 22, and 28, 2024.

B. The process of teaching vocabulary using the Plotagon Story-based animation based on the theory of multiple intelligences

The researcher applied the Plotagon Story-based animation method in the process of teaching vocabulary and dialog based on the theory of multiple intelligences. The purposes of this instruction are for students to master and improve in comprehending vocabulary and dialog in Arabic about daily activities.

The school's face-to-face teaching process began with the following steps:

The first meeting in vocabulary instruction

- 1) The researcher greets the students, asks them how they are doing, asks the students to say a prayer before learning in a group, and then checks the students' attendance.
- 2) The researcher must clarify the learning objectives
- 3) The researcher should talk about the topic that the students will learn using the Plotagon Story-based animation method to teach vocabulary, namely our diary.
- 4) The researcher divides students into groups (linguistic, musical, visual-spatial, and kinesthetic) to study vocabulary related to daily activities.
- 5) The researcher shows Plotagon Story-based animations of each group's daily activity vocabulary.
- 6) Students in all groups listen to Plotagon Story-based animations. His links are as follows:

https://youtu.be/yLk5TFP-DV0?si=zcZiGlswwZmvF2us 	https://youtu.be/QepGsOhb56Q?si=StNVgyiv9vXKj0Pp 	https://youtu.be/G3u2Lnxtewo?si=bDN9IGSQEp7LHMAa 
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- 7) Have students write down what they have heard and seen from the Plotagon Story-based animation
- 8) The researcher explains the activity that each group will do after listening to the Plotagon Story-based animation as an assignment for the next meeting.
- 9) The teacher should provide reinforcement on the material that has been learned.
- 10) Give students a chance to ask questions if something doesn't make sense.
- 11) The researcher must draw conclusions with the students about the material that has been learned.
- 12) The researcher should conclude with a prayer.

Second Meeting on Vocabulary Instruction

- 1) tied for the first point in the first meeting.
- 2) The researcher should deliver the lessons that the students have learned in the previous meeting.
- 3) The researcher asks each group to listen to a Plotagon Story-based animation about vocabulary in everyday activities.
- 4) The researcher asks each group to do the activity that the researcher explained in the previous meeting.
- 5) **Linguistic group:** Simple words are created and developed using vocabulary that they may hear from Plotagon Story-based animations.
- 6) **Visual-Spatial group:** Designs the background, creation and scenery in the Plotagon Story app that looks for vocabulary in everyday activities.
- 7) **Kinesthetic Group:** Memorize vocabulary with movements in the Plotagon Story video
- 8) **Musical group:** Memorize the song about the vocabulary they have seen and heard in the Plotagon Story video.
- 9) The researcher should explain the activity that each group will do after doing the activities that took place in this meeting.
- 10) The teacher should provide reinforcement on the material that has been learned.
- 11) Give students a chance to ask questions if something doesn't make sense.
- 12) The researcher must draw conclusions with the students about the material that has been learned.
- 13) The researcher should conclude with a prayer.

Third Meeting on Vocabulary Instruction

- 1) Tied for the first point in the first meeting
- 2) The researcher should deliver the lessons that the students have learned in the previous meeting.
- 3) The researcher asks each group to do the activity that the researcher explained in the previous meeting.
- 4) Have **the linguistic group** discuss and present in front of the class to explain the vocabulary and words used in the Plotagon Story video.
- 5) **The visual-spatial group** will present the animation you created in the Plotagon Story app to the class to demonstrate how a visual element can support vocabulary and word understanding of everyday activities.
- 6) **The kinesthetic group** applies the movement in the Plotagon Story video in front of the class.
- 7) **The music group** shows the song about vocabulary in daily activities found in the Plotagon Story video.
- 8) When presenting, the other group watches the presentation and then makes comments and suggestions.
- 9) The teacher should provide reinforcement on the material that has been learned.
- 10) Give students a chance to ask questions if something doesn't make sense.
- 11) The researcher must draw conclusions with the students about the material that has been learned.
- 12) The researcher should conclude with a prayer.

After describing the implementation of the vocabulary teaching process for the students of this school using Plotagon Story, which is based on the theory of multiple intelligences. The researcher explained by providing statistical calculations to obtain the mean and deviation in the pre-test and post-test results of the control group and the experimental group in vocabulary instruction.

Table 4.1 Pre and Post Test Score

Test	Class	
	Control	Eksperiment
Pre-Test	53,1	52,2
Post-Test	74,3	90,1

Table 4.2 Statistical calculations for mean and standard deviation in vocabulary learning outcomes

Number	Degree		X1	X2	X1 ²	X2 ²
	X1	X2	(X1-M1)	(X2-M2)		
1.	20	33	-17,9	11,8	320,41	139,24
2.	40	27	1,2	5,8	4,41	33,64
3.	13	27	-24,9	5,8	620,01	33,64

4.	27	13	-10,9	-8.2	118,81	67,24
5.	27	20	-10,9	-1,2	118,81	1.44
6.	40	20	1,2	-1,2	4,41	1.44
7.	20	27	-17,9	5,8	320,41	33,64
8.	40	20	1,2	-1,2	4,41	1.44
9.	47	13	9,1	-8.2	82,81	67,24
10.	67	20	29,1	-1,2	846,81	1.44
11.	67	13	29,1	-8.2	846,81	67,24
12.	20	20	-17,9	-1,2	320,41	1.44
13.	60	14	22.1	-7.2	488,41	51,84
14.	40	27	1,2	5,8	4,41	33,64
15.	67	20	29,1	-1,2	846,81	1.44
16.	7	27	-30,9	5,8	954.81	33,64
17.	20	20	-17.9	-1,2	320,41	1.44
18.	74	13	36.1	-8.2	1303,21	67,24
19.	53	20	15,1	-1,2	228,01	1.44
20.	47	20	9,1	-1,2	82,81	1.44
21.	27	27	-10,9	5,8	118,81	33,64
22.	40	20	1,2	-1,2	4,41	1.44
23.	20	20	-17,9	-1,2	320,41	1.44
24.	40	33	1,2	11,8	4,41	139,24
25.	27	20	-10,9	-1,2	118,81	1.44
26.	40	13	1,2	-8.2	4,41	67,24
27.	33	20	-4,9	-1,2	24.01	1.44
28.		27		5,8		33,64
Total	1023	594	-	-	8433	920,7
Average	37,9	21,2			312,3	32,88

From the previous data, the researcher analyzed the data to reveal the existence of the effectiveness of using the Plotagon-based animation medium in teaching vocabulary based on the theory of multiple intelligences to eighth grade students in this school. The researcher used the *t-test* as follows:

$$t_0 = \frac{M_1 - M_2}{\sqrt{\left(\frac{\sum x_1^2 + \sum x_2^2}{N_1 + N_2 - 2}\right) \left(\frac{N_1 + N_2}{N_1 \cdot N_2}\right)}}$$

M_1	: 37,9
M_2	: 21,2
$\sum x_1^2$	: 8433
$\sum x_2^2$	: 32,88
N_1	: 27
N_2	: 28

The researcher then analyzed the data on Fisher's Law as follows:

$$\begin{aligned} t_0 &= \frac{37,9 - 21,2}{\sqrt{\left(\frac{84,33 + 32,88}{27 + 28 - 2}\right) \left(\frac{27 + 28}{27 \cdot 28}\right)}} \\ t_0 &= \frac{16,7}{\sqrt{\left(\frac{8465,88}{53}\right) \left(\frac{55}{756}\right)}} \\ t_0 &= \frac{16,7}{\sqrt{(159,7)(0,07)}} \\ t_0 &= \frac{16,7}{\sqrt{11,179}} \\ t_0 &= \frac{16,7}{3,34} \\ t_0 &= 5 \end{aligned}$$

The next step is to look at the result of the t-test, and the researcher knows the degree of freedom (*Degrees of Freedom/DF*):

$$\begin{aligned} &= n_1 + n_2 - 2 \\ &= 27 + 28 - 2 \\ &= 53 \end{aligned}$$

$$t_t = 5\% = 1,674$$

$$t_0 = 5$$

$$t_t = 1\% = 2,398$$

$$df = 53$$

The results of the study showed a significant improvement in the students' skills. The average pre-test score of the experimental group in vocabulary instruction was (52.2), indicating that their ability is weak. However, after applying the teaching process using Plotagon Story based on the theory of multiple intelligences, the average post-test score increased to (90.1), with a mean difference of (37.9). This proves the effectiveness of this teaching method in improving vocabulary skills.

From the analysis of the previous data, the researcher found that the arithmetic t-value is equal to (5), then they set the value of the t-table by looking for the result of the degree of freedom (df), which is (53), and then found it in the table determined for the 5% significance level (1,674) and the result of the 1% significance level (2,398), as this data showed the arithmetic t-value, which was (5), which is greater than the 1% significance level result (2,398) and the 5% significance level (1,674). Based on the t-test rule, is read as follows:

1. If the t-count (t_0) is greater than the t-table (t_t), the null hypothesis is rejected. is greater than the t-table (t_t), the null hypothesis is rejected, meaning that the difference between the two groups is statistically significant.

2. If the t-count (t_0) is smaller than the t-table (t_0), the null hypothesis is accepted, meaning that the difference between the two groups is not statistically significant.

The researcher recognized that the t-test is greater than the t-test, which is evidence that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. Therefore, this result explains that the use of the Plotagon Story-based animation medium is effective in vocabulary instruction based on the theory of multiple intelligences.

The improvement observed in the experimental group can be explicitly linked to the integration of Multiple Intelligences (MI) into the intervention. Each intelligence type contributed differently to the success of vocabulary learning. The linguistic group demonstrated significant progress in writing and constructing simple sentences using the new vocabulary. The musical group remembered words effectively by turning them into simple songs, which enhanced retention through rhythm and melody. The bodily-kinesthetic group showed strong performance in memorizing vocabulary by associating each word with physical movements, which supported long-term memory. Meanwhile, the visual-spatial group benefited from designing backgrounds and characters in Plotagon, allowing them to internalize vocabulary through visual representation. These differentiated activities confirm that the improvement was not merely the result of using animation, but rather the alignment of tasks with students' dominant intelligence.

To illustrate more clearly how each intelligence type was integrated into the intervention and contributed to the learning outcomes, the following table summarizes the activities and results observed in each group.

Table 4.3 Integration of Multiple Intelligences in Vocabulary Learning Activities

Intelligence Type	Activity in Intervention	Observed Learning Outcome
Linguistic	Writing down vocabulary from Plotagon videos and constructing simple sentences (e.g., أنا أستيقظ من (النوم في الساعة الخامسة صباحاً)	Improved ability to recall and use vocabulary in written form; better sentence construction.
Musical	Creating simple songs with target vocabulary (e.g., يستحم، يستيقظ، (يدرس)	Stronger retention through rhythm and melody; faster recall of words.
Bodily-Kinesthetic	Using gestures or movements to represent words (e.g., mimicking opening a book for (يدرس)	More effective memorization through movement association; higher engagement during practice.
Visual-Spatial	Designing characters, backgrounds, and scenes in Plotagon with target vocabulary	Better understanding of vocabulary through visualization; words more easily grasped in context.

In conclusion, the results of this study show that using Plotagon Story for vocabulary instruction based on the theory of multiple intelligences has a significant impact on improving students' skills. This application not only improves educational outcomes but also provides a more exciting and interactive learning experience. Therefore, it is recommended that Plotagon Story be used more widely in Arabic language teaching, with modifications to suit the different levels of students. Future studies could focus on exploring the use of this tool in other language

skills, such as reading or writing, and analyzing its impact on students' multiple intelligences more deeply.

5. Conclusion

With the advancement of technology, many online interactive educational platforms and learning curricula have emerged that can be used to support vocabulary learning. Plotagon Story and the Theory of Multiple Intelligences is one of these educational tools and curricula that offer a range of educational tools designed to make the learning process more enjoyable and interactive. After the researcher applied the use of this platform in the process of teaching Arabic vocabulary to eighth grade students from the mentioned school, the researcher found that the average value of the experimental group was (37.9), and the average value of the control group was (21.2), which indicates that the average value of the experimental group is greater than the average value of the control group. She found that analyzing the data according to the significance level test "t-test" gave a statistically significant ratio, which indicates that the null hypothesis (H_0) is rejected, and that the alternative hypothesis (H_a) is accepted. The researcher recommends adopting such interactive tools in education curricula to enhance the Arabic language skills of students in Islamic schools.

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