Plotagon Story Media to Improve Learning Interest and Arabic Vocabulary Mastery: An Experimental Study

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Abstract: Arabic language learning still faces challenges, particularly students' low learning interest and limited vocabulary mastery due to the dominance of conventional and less interactive teaching methods. Previous studies have examined the use of digital learning media; however, many of them focused on either learning interest or vocabulary mastery separately. This study aims to examine the effectiveness of Plotagon Story media in simultaneously improving students' learning interest and Arabic vocabulary mastery. The study employed a true experimental design with a pretest–posttest control group. The participants were 36 students assigned to the experimental and control groups. Data were collected using a learning interest questionnaire and an Arabic vocabulary mastery test, and analyzed using ANCOVA. The findings showed that students taught using Plotagon Story demonstrated higher learning interest and better vocabulary mastery than students receiving conventional instruction. These results indicate that animation-based digital media can promote more interactive and meaningful Arabic learning. This study suggests that Plotagon Story can serve as an alternative instructional medium to strengthen Arabic language instruction, particularly in madrasah contexts.

Abstrak: Pembelajaran bahasa Arab masih menghadapi tantangan yang cukup persisten, terutama rendahnya minat belajar siswa dan terbatasnya penguasaan kosakata, yang sering dipengaruhi oleh dominasi praktik pembelajaran konvensional dan kurang interaktif. Meskipun berbagai penelitian sebelumnya telah mengkaji pemanfaatan media pembelajaran digital, sebagian besar masih menelaah minat belajar atau penguasaan kosakata secara terpisah. Oleh karena itu, penelitian ini bertujuan untuk menguji efektivitas media Plotagon Story sebagai media pembelajaran berbasis animasi dalam meningkatkan minat belajar sekaligus penguasaan kosakata bahasa Arab. Penelitian ini menggunakan pendekatan kuantitatif dengan desain true experimental melalui model pretest–posttest control group. Partisipan penelitian berjumlah 36 siswa yang dibagi secara acak ke dalam kelompok eksperimen dan kelompok kontrol. Data dikumpulkan melalui angket minat belajar dan tes penguasaan kosakata bahasa Arab. Analisis data dilakukan menggunakan Analysis of Covariance (ANCOVA) untuk mengontrol kemampuan awal siswa. Hasil penelitian menunjukkan bahwa penggunaan Plotagon Story meningkatkan minat belajar dan penguasaan kosakata secara signifikan dibandingkan pembelajaran konvensional. Temuan ini menegaskan bahwa media animasi digital mampu mendorong pembelajaran bahasa Arab yang lebih interaktif, kontekstual, dan bermakna, khususnya pada konteks madrasah.

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A. Introduction

Arabic language instruction remains an essential component of learning in Indonesian Islamic education, particularly in madrasah contexts, where Arabic serves not only as a foreign language subject but also as a key medium for religious and academic literacy. In many madrasah institutions, Arabic is expected to enhance students' understanding of Islamic sources, improve communication skills, and develop broader educational capacity. However, despite its importance, Arabic learning in schools still faces persistent challenges, particularly students' low interest in learning and limited mastery of vocabulary. These challenges frequently arise from the dominance of conventional learning practices that are less interactive, teacher-centred, and focused on memorization rather than meaningful language use.

Learning interest is an affective factor that plays a crucial role in determining students' engagement and success in the learning process (Mira et al., 2020; Susanti et al., 2020; Octaria & Erlina, 2024). Students who demonstrate high learning interest tend to show stronger attention, curiosity, and willingness to participate in learning activities, which can positively Influence their learning outcomes. In contrast, students with low interest often become passive, less attentive, and easily disengaged during classroom activities, resulting in limited learning achievement. In Arabic language learning, this issue is particularly critical because Arabic is often viewed as a challenging subject that requires consistent practice, repetitive exposure, and strong foundational knowledge. When students' interest is low, they are less likely to engage meaningfully with learning tasks, leading to minimal progress in language acquisition.

In Arabic language instruction, low learning interest often correlates with limited vocabulary mastery, even though vocabulary underpins all language skills. Vocabulary mastery is essential for students to comprehend texts, understand instructions, and express ideas in both spoken and written forms. Learners who lack adequate vocabulary tend to experience difficulties understanding reading materials, recognizing meanings, and constructing correct sentences, which ultimately affects overall language proficiency (Azizah, 2020; Fakhruddin et al., 2021; Hula et al., 2024). Research has shown that various teaching approaches, including cooperative learning strategies such as word-matching games, can effectively improve students' Arabic vocabulary mastery (Hanifah et al., 2024). This issue becomes more problematic when vocabulary instruction is conducted through isolated word lists and translation methods without contextual support. As a result, students may memorise words temporarily but fail to retain or apply them in meaningful communication.

The problems of low learning interest and limited vocabulary mastery in Arabic language learning have serious pedagogical implications. These conditions reduce students' participation in learning activities and hinder the development of higher-order language skills such as reading comprehension, communication fluency, and writing accuracy. If such problems persist, Arabic language instruction risks becoming ineffective and disconnected from students' communicative needs, particularly in madrasah contexts where Arabic plays

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a central role in religious and academic learning (Rini et al., 2023; Khalid et al., 2023). In other words, the inability to cultivate students' interest and vocabulary competence may weaken the overall quality of Arabic education and limit students' potential to achieve meaningful learning outcomes.

Given these challenges, educational innovation is needed to improve Arabic language teaching strategies, especially by shifting from conventional approaches toward more interactive, contextual, and learner-centred practices. One potential solution to this problem is the integration of digital learning media that can create interactive and engaging learning experiences. Digital learning media offer opportunities to present learning content through multiple sensory channels (visual, auditory, and textual), making instruction more engaging and supporting deeper comprehension. Moreover, digital media can provide contextual learning environments that improve students' motivation, attention, and participation (Kholis et al., 2022; Pagarra et al., 2022). In language learning contexts, digital media can facilitate vocabulary acquisition by providing contextual exposure, pronunciation support, and interactive reinforcement through multimodal learning.

In recent years, animation-based learning media have attracted increasing attention for their potential to enhance student engagement and facilitate meaningful learning. Plotagon Story is a digital animation-based medium that allows teachers to present learning content through three-dimensional animated narratives (Rahmawati & Hikmah, 2022; Alivi, 2024). This medium enables teachers to create stories, characters, and dialogues that represent real-life situations or contextual learning scenarios. In Arabic language learning, Plotagon Story can present vocabulary items in meaningful contexts, allowing students to learn not only word forms but also their functions and uses in authentic communication. Plotagon Story also integrates visual, textual, and audio elements, enabling students to process information through multiple channels while maintaining interest and engagement throughout the learning process.

From a theoretical perspective, the effectiveness of animation-based learning media can be explained by constructivist and multimedia learning theories. Constructivist learning emphasizes that learners actively construct knowledge through interaction, exploration, and contextual learning experiences. By presenting vocabulary in story-based contexts, Plotagon Story may encourage students to build meaning and connect new vocabulary to familiar situations actively. Additionally, multimedia learning theory suggests that learning becomes more effective when information is presented through both verbal and visual channels, provided the learning design supports coherent and relevant processing (Mayer, 2024). Because Plotagon Story uses narration, visuals, and contextual storylines, it may enhance comprehension, retention, and interest by promoting meaningful cognitive processing and reducing monotony in learning.

Previous studies have shown that animated and digital learning media can enhance interest in learning and vocabulary mastery in language-learning contexts. Research on digital learning media indicates that students often demonstrate greater motivation, enthusiasm, and participation when learning materials are delivered through interactive

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platforms and multimedia formats (Ardiansyah et al., 2022; Mubarak & Santoso, 2023). Animation-based learning has also been found to support vocabulary development by providing contextual representations of meanings and increasing students' attention during instruction (Shidqi et al., 2024). These findings imply that integrating digital animation into language instruction may strengthen both affective engagement and cognitive learning outcomes.

However, despite the growing body of evidence regarding digital learning media, most existing studies have examined learning interest or vocabulary mastery separately. There is still a lack of experimental Research that simultaneously investigates the effects of Plotagon Story media on both affective outcomes (learning interest) and cognitive outcomes (vocabulary mastery) within a single true experimental design, particularly in madrasah education settings. This limitation creates an important Research gap because language learning effectiveness is shaped by both engagement and competence. Therefore, measuring only one aspect may provide incomplete conclusions about the impact of digital learning interventions.

Furthermore, previous studies often employ quasi-experimental designs without sufficient control for pre-existing group differences. As a result, the validity of treatment effects may be weakened because students' initial abilities can Influence posttest results. To address this methodological issue, a true experimental design with random assignment and statistical control is necessary to provide stronger evidence on the effectiveness of Plotagon Story. In this study, the use of Analysis of Covariance (ANCOVA) is relevant because it enables researchers to control for students' initial ability, as measured by pretest scores, thereby allowing more accurate interpretation of treatment effects on posttest outcomes.

Another important aspect that requires further exploration is the madrasah context itself. Madrasah education has distinctive characteristics due to the integration of religious curriculum orientation and the role of Arabic as an academic language for Islamic studies. Therefore, empirical evidence regarding the effectiveness of digital learning media in madrasah Arabic instruction is needed to ensure that innovations are contextually relevant and practically applicable. Investigating Plotagon Story in madrasah settings can contribute not only to the development of Arabic learning Research but also to educational practice by providing a realistic alternative learning solution that fits the needs of students and teachers.

Therefore, this study aims to examine the effectiveness of Plotagon Story media in simultaneously enhancing students' learning interest and Arabic vocabulary mastery, drawing on constructivist and multimedia learning perspectives that emphasise active, meaningful learning experiences (Susanti et al., 2020; Mayer, 2024). The novelty of this study lies in its integration of affective and cognitive learning outcomes within a true experimental design in Arabic language education, specifically within a madrasah context. By combining measurements of learning interest and vocabulary mastery, this study provides a more comprehensive understanding of how animation-based digital media influences both students' engagement and learning achievement. In addition, this Research contributes to the growing literature on digital learning media by offering empirical evidence about

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Plotagon Story as a relevant instructional alternative for improving Arabic language teaching and learning. Based on these purposes and the identified Research gap, this study formulates the following Research question: (RQ1) Does the use of Plotagon Story media significantly increase students' interest in Arabic language learning compared to conventional instruction? (RQ2) Does the use of Plotagon Story media significantly improve students' Arabic vocabulary mastery compared to conventional instruction? Moreover, (RQ3) Is Plotagon Story media effective in simultaneously improving students' learning interest and Arabic vocabulary mastery when controlling for students' initial ability (pretest scores)?

B. Method

This study employed a quantitative approach using a true experimental pretest–posttest control group design. The Research procedure consisted of administering a pretest, implementing instructional treatment using Plotagon Story media for the experimental group and conventional media for the control group, administering a posttest, analyzing the data using ANCOVA, and interpreting the results.

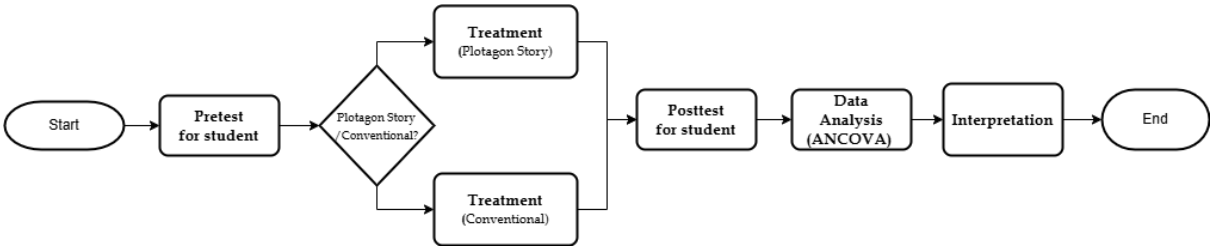

Figure 1. Research Flow

Figure 1 (Research Flow) illustrates the overall procedure for this true experimental study, which uses a pretest–posttest control-group design. The Research begins by administering a pretest to all participating students to measure their initial level of learning interest and Arabic vocabulary mastery. After the pretest, students are assigned to two groups: the experimental group, taught using Plotagon Story media, and the control group, taught using conventional instruction. Once the treatment phase is completed, a posttest is administered to both groups to assess changes in learning interest and vocabulary mastery after the intervention. The collected pretest and posttest data are then analyzed using ANCOVA to compare posttest outcomes between groups while controlling for students' initial ability, and the results are interpreted to conclude the effectiveness of Plotagon Story media in improving students' learning interest and Arabic vocabulary mastery.

The Research was conducted at a madrasah, namely MTsN 2 OKU Timur. The population consisted of 124 students, of whom 36 were selected using simple random sampling to ensure that each student had an equal opportunity to be included in the study. The sample size was determined by referring to Arikunto (2013) sampling guidance, which

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states that when the population exceeds 100, researchers may take approximately 10–15%, 20–25%, or more of the population, depending on Research feasibility and design requirements. In this study, 30% of the population was selected, resulting in 36 participants. To implement a true experimental design, the selected participants were randomly assigned to two groups using a random allocation procedure: an experimental group (n = 18) and a control group (n = 18). This random assignment was used to reduce selection bias and strengthen internal validity by ensuring that both groups had comparable baseline characteristics.

This study employed a true experimental Research design using a pretest–posttest control group model. Both groups received a pretest to measure their initial interest in learning and Arabic vocabulary mastery before the intervention. The experimental group was taught using Plotagon Story media, which presented vocabulary content through animated story-based learning scenarios that combine visual, audio, and textual elements. The control group, on the other hand, received conventional instruction, characterized by teacher explanation, textbook-based learning, translation activities, and routine exercises without animation-based media. The learning objectives, topic coverage, and time allocation were kept consistent across both groups to minimize confounding variables. Furthermore, the learning activities were conducted within the same school setting, under similar classroom conditions, and within the same instructional period to reduce threats to validity such as unequal learning exposure or treatment contamination.

The Research instruments consisted of (1) a learning interest questionnaire containing 20 items designed to measure students' learning interest based on the indicators of attention, interest, and learning engagement; and (2) an Arabic vocabulary mastery test consisting of 25 multiple-choice items aligned with the instructional Material. The questionnaire items were scored using a Likert-scale response format, and the total score represented students' level of learning interest. The vocabulary test measured students' understanding and recognition of Arabic vocabulary, including their ability to identify meanings and apply words appropriately. Instrument validity was examined through expert judgment to ensure content relevance and clarity, followed by empirical testing to confirm that the items functioned properly. Instrument reliability was evaluated using Cronbach's Alpha, with results indicating reliability values exceeding 0.70, suggesting acceptable internal consistency for Research purposes.

Data analysis was conducted using Analysis of Covariance (ANCOVA) to examine the effect of Plotagon Story media on students' learning interest and Arabic vocabulary mastery while controlling for students' initial ability (pretest scores). Prior to ANCOVA, several statistical assumptions were tested, including normality, homogeneity of variance, linearity, and homogeneity of regression, to ensure that the data met the requirements for valid ANCOVA interpretation (Sahir, 2022). A significance level of $\alpha = 0.05$ was applied in hypothesis testing. Ethical considerations were also addressed by obtaining permission from the school, ensuring that students' participation was voluntary, and maintaining confidentiality by anonymizing participant data throughout the Research process.

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Accordingly, this study aims to investigate the effectiveness of Plotagon Story media in improving students' learning interest and Arabic vocabulary mastery at MTsN 2 OKU Timur, based on the Research background, previous empirical findings, relevant theoretical frameworks, and the applied methodology.

C. Result

This study aims to determine the effectiveness of Plotagon Story media in enhancing students' interest in learning and their mastery of Arabic vocabulary. The Research instruments employed in this study have undergone validity and reliability testing, indicating that they are appropriate for data collection. These tests ensure that the instruments are valid and reliable for measuring the Research variables, thereby producing accurate data.

Descriptive Analysis

Prior to treatment, both the experimental and control groups were administered a pretest (Santoso & Mosik, 2019). Data analysis began by comparing the mean scores of the pretest and posttest for both groups. The mean pretest and posttest scores of students' Arabic learning interest in the experimental and control groups are presented in the following table:

Table 1. Students' Learning Interest Scores in Experimental and Control Groups

Group	Mean		Gain
	Pretest	Posttest	
Control	71,94	78,06	6,12
Experimental	74,39	88,00	13,62

Based on Table 1, the pretest results indicate that the initial level of students' learning interest in both the experimental and control groups was relatively comparable. The mean pretest score of learning interest in the control group was 71.94, which increased to 78.06 in the posttest. Meanwhile, the experimental group had a mean pretest score of 74.39, which increased to 88.00 in the posttest. The difference in score improvement indicates that the experimental group experienced a 13.62-point increase in learning interest, which was higher than the control group's 6.12-point increase. These findings indicate that Plotagon Story media is more effective than conventional instructional methods at enhancing students' learning interest, as it facilitates more engaging, interactive, and contextual learning. The mean scores of students' Arabic learning interest are illustrated in the following bar chart:

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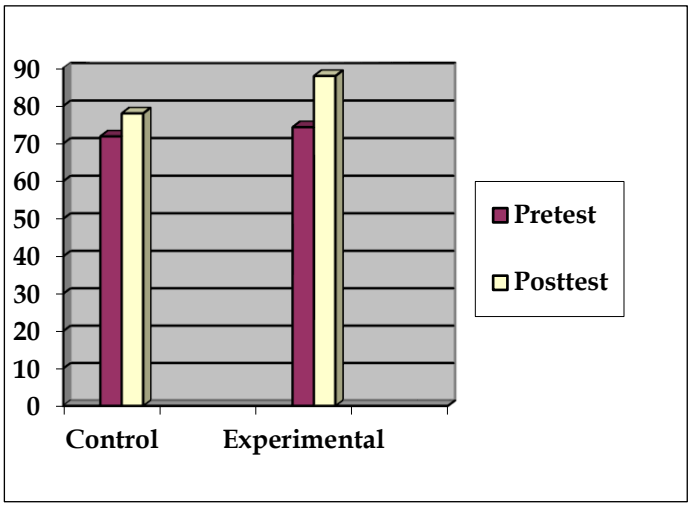

Figure 2. Comparison of Students' Learning Interest Scores

Figure 2 (Comparison of Students' Learning Interest Scores) visually illustrates the change in students' learning interest from pretest to posttest in both the control and experimental groups. The figure shows that both groups had relatively comparable baseline conditions, indicating that students' initial interest in learning was generally similar before the intervention. After the learning treatment was implemented, both groups demonstrated an upward trend; however, the experimental group displayed a more pronounced improvement pattern than the control group, suggesting that Plotagon Story media fostered stronger engagement and attention during the learning process. This visual comparison supports the descriptive evidence that animation-based digital learning can create a more interactive and meaningful classroom experience, which may lead to greater interest in Arabic learning compared to conventional instruction, and the statistical confirmation of this difference is further strengthened by ANCOVA analysis that controls for students' initial ability.

Table 2. Arabic Vocabulary Mastery Scores in Experimental and Control Groups

Group	Mean		Gain
	Pretest	Postest	
Control	42,50	58,89	16,39
Experimental	44,17	77,22	33,05

Table 2 (Arabic Vocabulary Mastery Scores in Experimental and Control Groups) presents descriptive statistics for students' Arabic vocabulary mastery in both groups across the pretest and posttest. The table shows that the control group had a mean pretest score of 42.50, which increased to 58.89 in the posttest, yielding a gain of 16.39 points. Meanwhile, the experimental group achieved a slightly higher pretest mean of 44.17, which rose substantially to 77.22 in the posttest, yielding a much larger gain of 33.05 points. Overall, these results indicate that although both groups improved after instruction, students who

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learned through Plotagon Story media demonstrated significantly greater improvement in Arabic vocabulary mastery compared to those who received conventional instruction. Consistent with these findings, Figure 3 (Comparison of Students' Arabic Vocabulary Mastery Scores) visually confirms the trend, showing a more pronounced increase in the experimental group from pretest to posttest. In contrast, the control group shows a smaller improvement. This visual comparison supports the descriptive claim that Plotagon Story supports vocabulary learning more effectively, likely by providing contextualized, engaging animated learning experiences that facilitate students' understanding and retention of Arabic vocabulary.

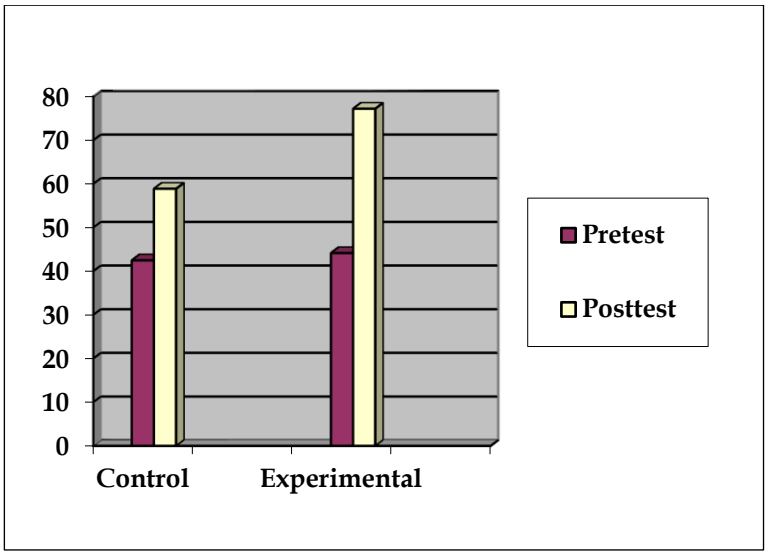

Figure 3. Comparison of Students' Arabic Vocabulary Mastery Scores

The figure shows that both groups improved after the learning intervention; however, the experimental group shows a noticeably steeper upward trend than the control group, indicating greater progress in vocabulary mastery. This visual pattern suggests that the use of Plotagon Story media contributed to a more substantial learning impact, as the animation-based approach appears to support students in understanding and retaining vocabulary through more engaging, contextual, and meaningful learning experiences than conventional instruction.

Assumption Testing and Inferential Analysis (ANCOVA)

Prior to conducting inferential statistical analysis using ANCOVA, several statistical assumptions (prerequisites) were tested, namely normality, homogeneity of variance, linearity, and homogeneity of regression. Before drawing inferential conclusions, a series of statistical assumption tests must be satisfied. The normality test was conducted using the Shapiro–Wilk test because the sample size was fewer than 100 students. The significance values for each variable are presented as follows:

Table 3. Normality Test Results

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Variable	Group	Pretest (Sig.)	Posttest (Sig.)	Data Conclusion
Y_1 (Learning Interest)	Control	0,165	0,214	Normal
Y_1 (Learning Interest)	Experimental	0,938	0,096	Normal
Y_2 (Vocabulary Mastery)	Control	0,068	0,170	Normal
Y_2 (Vocabulary Mastery)	Experimental	0,560	0,221	Normal

Based on Table 3, the results of the normality test indicate that the pretest and posttest data for the variables of learning interest and vocabulary mastery are not significantly different (p> 0.05). Therefore, the Research data are normally distributed and meet one of the prerequisites for conducting further statistical analysis using parametric tests. Subsequently, the homogeneity of variance was tested using Levene's Test, the results of which are presented in the following table:

Table 4. Homogeneity of Variances Test Results

Variable	N	Sig.	Data Conclusion
Learning Interest (Y_1)	36	0,136	Homogeneous
Vocabulary Mastery (Y_2)		0,767	Homogeneous

The results of the homogeneity test in Table 4 indicate that the significance value of Levene's Test is greater than 0.05. This finding suggests that the variances across the experimental and control groups are homogeneous; therefore, the data are suitable for ANCOVA analysis. Subsequently, a linearity test was conducted to determine whether a linear relationship exists between the two variables. Ideally, the data should exhibit a linear relationship between the independent variable (X) and the dependent variable (Y). The results of the linearity test are presented in the following table:

Table 5. Linearity Test Results

Variable	Group	N	Sig.	Data Conclusion
Y_1 (Learning Interest)	Control	36	0,481	Linear
Y_1 (Learning Interest)	Experimental		0,606	Linear
Y_2 (Vocabulary Mastery)	Control		0,557	Linear
Y_2 (Vocabulary Mastery)	Experimental		0,978	Linear

Based on Table 5, the results of the linearity test indicate that the relationship between the covariate (pretest scores) and the dependent variable in this study is linear, as evidenced by the Deviation from Linearity p-value being greater than 0.05. This finding suggests that changes in pretest scores are proportionally associated with changes in posttest scores; thus, the assumption of linearity, a prerequisite for ANCOVA, has been met. Subsequently, a homogeneity-of-regressions test was conducted. This test is crucial in ANCOVA to ensure that the relationship between pretest and posttest scores has the same

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slope across groups. The results of the homogeneity of regression test for both variables are presented in the following table:

Table 6. Homogeneity of Regression Slopes Test Results

Variable	N	Sig.	Data Conclusion
Learning Interest (Y_1)	36	0,308	Homogeneous
Vocabulary Mastery (Y_2)		0,355	Homogeneous

Based on Table 6, the results of the homogeneity of regression test indicate that the interaction between the covariate (pretest) and the treatment is not statistically significant, with a significance value greater than 0.05. This finding demonstrates that the regression slopes for the experimental and control groups are parallel; therefore, the assumption of homogeneity of regression is satisfied, and ANCOVA can be validly conducted.

Analysis of Covariance (ANCOVA)

After all assumptions were met, an ANCOVA was conducted to examine the effect of Plotagon Story media on learning interest and vocabulary mastery, while controlling for students' initial ability (pretest).

Table 7. ANCOVA Results on Students' Learning Interest & Arabic Vocabulary Mastery

Variable	Sig.	Data Conclusion
Y_1 (Learning Interest)	0,000	H_0 rejected, H_a accepted
Y_2 (Vocabulary Mastery)	0,000	H_0 rejected, H_a accepted

The ANCOVA results indicate that using Plotagon Story media has a statistically significant effect on students' learning interest and Arabic vocabulary mastery, after controlling for initial ability ($p < 0.05$). The partial eta squared (η^2p) values for both variables indicate moderate to large effect sizes, indicating that Plotagon Story media makes a meaningful contribution to improving both the affective and cognitive aspects of Arabic language learning.

D. Discussion

The findings of this study explicitly address the Research questions by confirming that Plotagon Story media is effective in improving students' learning interest and Arabic vocabulary mastery compared to conventional instruction. In relation to RQ1, students who learned through Plotagon Story demonstrated greater improvement in learning interest, indicating that animation-based storytelling can foster stronger attention, enthusiasm, and classroom engagement. This result suggests that Plotagon Story provides a learning environment that is more attractive and interactive than conventional instruction, which often relies on explanation, translation, and memorization. Regarding RQ2, the experimental group also achieved higher gains in Arabic vocabulary mastery, showing that

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Plotagon Story supports students in acquiring and retaining vocabulary more effectively. Furthermore, addressing RQ3, the ANCOVA results confirm that Plotagon Story has a significant simultaneous effect on both learning interest and vocabulary mastery even after controlling for students' initial ability. This strengthens the causal interpretation of the intervention effect, as the observed posttest differences are not simply due to baseline variation but are associated with the instructional treatment.

The positive impact of Plotagon Story can be explained by the Cognitive Theory of Multimedia Learning, which emphasises that learning is optimised when students process information across integrated visual, audio, and textual channels (Mayer, 2024). Plotagon Story provides three-dimensional animated content that captures learners' attention, sustains engagement, and reduces monotony, thereby enhancing the affective dimension of learning interest. At the same time, multimedia elements support deeper cognitive processing by presenting vocabulary in meaningful, contextualized scenes rather than as isolated word lists. This contextualization helps learners connect word forms to meanings and communicative functions, thereby strengthening comprehension and retention. In other words, Plotagon Story does not merely "entertain" students, but facilitates meaningful learning by guiding students to process vocabulary through narrative context and multimodal input, supporting both motivation and achievement simultaneously (Mayer, 2024).

These findings align with prior studies demonstrating that digital animation media can improve students' engagement and learning outcomes. Ardiansyah et al (2022) reported that animation-based digital media contributes positively to students' interest and achievement, supporting the current finding that interactive media can increase students' participation and enthusiasm in learning activities. This is further supported by Margaretha Saragih & Sirait (2023), who found that the use of Plotagon-based animation media significantly improved students' learning outcomes, demonstrating the effectiveness of this particular digital tool in educational settings. The consistency between the present results and those of Ardiansyah et al (2022) strengthens the argument that motivation-related improvement is not incidental but rather emerges because digital animation facilitates attention and active engagement. Similarly, the present results reinforce the findings of Rahmawati & Hikmah (2022) and Rini et al (2023), who reported that the Plotagon application can support student engagement and vocabulary-related learning outcomes. However, while previous studies commonly focused on either engagement or specific learning achievement, this study makes a more comprehensive contribution by evaluating both learning interest (affective outcome) and vocabulary mastery (cognitive outcome) simultaneously within a true experimental framework, thereby offering stronger evidence of effectiveness.

In the madrasah context, the implications of these findings become even more relevant. Arabic learning in madrasah is often perceived as difficult and predominantly theoretical, and students may struggle due to heterogeneous learning characteristics and limited exposure to innovative learning media. Consequently, Plotagon Story offers a

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pedagogical alternative that aligns with the learning preferences of the digital generation by presenting language-learning content in a communicative, interactive format. This approach can reduce students' boredom and anxiety, making vocabulary learning more approachable and meaningful. Moreover, Plotagon Story can be designed to remain consistent with madrasah values and learning goals, ensuring that technological innovation supports, rather than replaces, the core identity of Arabic instruction in the institution.

Compared to conventional instruction, Plotagon Story appears to create a learning experience that is more student-centred and context-driven, which supports not only improved vocabulary acquisition but also sustained learning interest. This pattern supports multimedia learning theory and highlights the potential of animation-based digital media to strengthen the quality of Arabic instruction through both affective and cognitive pathways (Mayer, 2024). Overall, the findings of this study confirm that Plotagon Story media constitutes an effective instructional strategy for Arabic language learning, particularly in madrasah settings, by simultaneously enhancing students' interest in learning and their vocabulary mastery. Therefore, the integration of digital animation media deserves serious consideration as a practical innovation to improve Arabic learning experiences, increase student engagement, and strengthen vocabulary mastery in Arabic classrooms.

E. Implication

Theoretically, this study contributes to the field of Arabic language education by reinforcing the application of multimedia learning theory, particularly in the use of digital animation media to simultaneously enhance learning interest and vocabulary mastery. These findings extend previous Research on Arabic language instructional media, which has tended to examine individual learning aspects in isolation.

In practice, the findings of this study offer Arabic language teachers an alternative for designing more interactive, context-based learning through the use of Plotagon Story media. This media has the potential to enhance student engagement and reduce boredom in Arabic language learning, which remains predominantly conventional.

From a social and educational policy perspective, the findings of this study support the digital transformation of learning in madrasah settings. They may serve as a reference for policy development and teacher training programs that promote the use of innovative instructional media in Arabic language learning.

F. Limitation and Suggestion for Further Research

This study has several limitations that should be considered when interpreting the findings. First, the Research sample was limited to a single school; therefore, generalization of the results to broader contexts should be approached with caution. Second, the duration of the experimental implementation was relatively short, which may not fully capture the long-term effects of using Plotagon Story media on students' learning interest and Arabic

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vocabulary mastery. Third, this study focused solely on two variables, learning interest and vocabulary mastery and did not examine the effects of Plotagon Story media on other Arabic language skills.

Given these limitations, future Research is recommended to expand the sample by including more than one school to enhance the generalizability of the findings. In addition, future studies should extend the duration of the experimental intervention to understand the effectiveness of Plotagon Story media better. Further Research is also encouraged to examine the effects of this media on productive Arabic language skills, such as speaking. Moreover, a mixed-methods approach can yield deeper insights into students' learning processes and experiences.

G. Conclusion

This study examined the effectiveness of Plotagon Story media in enhancing students' interest in learning and their mastery of Arabic vocabulary in a madrasah context. The findings demonstrate that Plotagon Story has a significant positive effect on learning outcomes compared to conventional instruction, indicating that animation-based digital media can simultaneously strengthen students' affective engagement and cognitive achievement. These results suggest that presenting Arabic vocabulary through interactive, contextually rich animated narratives promotes a more meaningful learning experience, encourages active participation, and supports better vocabulary retention. Therefore, Plotagon Story can be considered a relevant instructional alternative to improve the quality of Arabic language learning, particularly in madrasah environments where students often show low interest and limited vocabulary development. Future Research is recommended to involve larger samples, longer intervention periods, and additional variables, such as speaking performance, reading comprehension, and long-term retention, to confirm further and extend the effectiveness of Plotagon Story in Arabic language education.

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