

## **Enhancing Students' Interest in Arabic Learning through H5P-Based Interactive E-Books**

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### **Abstract**

*The growing integration of digital technology in Islamic boarding school environments has created increasing demand for interactive learning media that can sustain students' affective engagement in Arabic language instruction. This study examines the effectiveness of Lumi Education (H5P)-based interactive e-books in enhancing junior high school students' interest in learning Arabic vocabulary, employing a quasi-experimental pretest-posttest control group design with 60 students from grades VIII–IX divided equally into experimental and control groups. Learning interest is measured through five indicators, namely pleasure, attention, interest, active involvement, and desire to learn independently. The measurement was carried out using a 25-point Likert scale questionnaire that has been tested for validity and reliability. Educators and curriculum developers working in digitally transitioning Islamic educational settings may find interactive e-books a viable instructional medium for fostering affective engagement, particularly in contexts where learner homogeneity and structured intervention conditions are present. Broader adoption should, however, account for instrument sensitivity and participant diversity to ensure that reported effects are appropriately calibrated to varied educational environments.*

## Abstrak

Meluasnya integrasi teknologi digital di lingkungan sekolah berbasis pesantren mendorong kebutuhan yang semakin tinggi akan media pembelajaran interaktif yang mampu mempertahankan keterlibatan afektif siswa dalam pembelajaran bahasa Arab. Penelitian ini mengkaji efektivitas e-book interaktif berbasis Lumi Education (H5P) dalam meningkatkan minat belajar kosakata bahasa Arab pada siswa sekolah menengah pertama (SMP), dengan menggunakan desain kuasi-eksperimen pretest-posttest kelompok kontrol yang melibatkan 60 siswa kelas VIII-IX yang terbagi secara merata ke dalam kelompok eksperimen dan kelompok kontrol. Minat belajar diukur melalui lima indikator, yaitu rasa senang, perhatian, ketertarikan, keterlibatan aktif, dan keinginan belajar mandiri. Pengukuran dilakukan menggunakan angket skala Likert 25 butir yang telah diuji validitas dan reliabilitasnya. Bagi pendidik dan pengembang kurikulum di lembaga pendidikan Islam yang tengah bertransisi ke arah digital, e-book interaktif dapat menjadi pilihan media pembelajaran yang layak untuk menumbuhkan keterlibatan afektif, khususnya dalam konteks yang ditandai oleh homogenitas peserta didik dan kondisi intervensi yang terstruktur. Penerapan yang lebih luas perlu mempertimbangkan sensitivitas instrumen dan keberagaman latar belakang peserta didik agar besaran efek yang dilaporkan dapat dikalibrasi secara tepat pada berbagai konteks pendidikan yang berbeda.

## المخلص

أفرز التوسع المتسارع في تكامل التقنية الرقمية داخل بيئات المدارس القائمة على المعهد الإسلامي حاجة متنامية إلى وسائل تعليمية تفاعلية قادرة على تعزيز الانخراط الوجداني للطلاب في تعلم اللغة العربية والحفاظ عليه. يسعى هذا البحث إلى اختبار فاعلية الكتاب الإلكتروني التفاعلي القائم على Lumi Education (H5P) في تنمية الميل نحو تعلم مفردات اللغة العربية لدى طلاب المرحلة المتوسطة، مستعينة بتصميم شبه تجريبي قائم على الاختبار القبلي والبعدي مع مجموعة ضابطة، وذلك على عينة مؤلفة من ستين طالبا من الصفين الثامن والتاسع، وزعوا بالتساوي بين

مجموعتين تجريبية وضابطة. وقد قيس الميل نحو التعلم عبر خمسة مؤشرات هي: البهجة بالتعلم، والانتباه، والاهتمام، والمشاركة الفاعلة، والرغبة في التعلم المستقل، باستخدام استبانة من خمسة وعشرين فقرة وفق تدرج ليكرت، خضعت للتحقق من صدقها وثباتها. وتجدر الإشارة إلى أن المعلمين ومطوري المناهج في المؤسسات التعليمية الإسلامية التي تسير في مسار التحول الرقمي قد يجدون في الكتاب الإلكتروني التفاعلي وسيلة تعليمية ناجعة لتنشيط الجانب الوجداني في التعلم، لا سيما في السياقات التي يسودها تجانس المتعلمين وتنظم فيها شروط التدخل التعليمي. غير أن التطبيق الأوسع ينبغي أن يراعي حساسية أدوات القياس المستخدمة وتنوع خلفيات المتعلمين، حتى تكون أحجام الأثر المبلغ عنها معيارا قابلا للتكيف مع السياقات التعليمية المختلفة.

**Keywords:** Arabic language learning; affective engagement; H5P interactive e-book; learning interest; quasi-experimental design

## Introduction

The development of digital technology has encouraged changes in learning practices in various educational institutions, including the *pesantren* environment, which is gradually integrating digital media into the learning process.<sup>1</sup> This integration affects how learning is designed, delivered, and accessed by students. Technology in learning is no longer viewed merely as a complement, but as a necessity to respond to the challenges of the modern era that demand flexibility, learner independence, and active student involvement.<sup>2</sup> Digital-based learning innovations, such as interactive media,

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<sup>1</sup> Sarah Sarah et al., "Technology Integration in Arabic Language Skills Development in the Digital Era," *Al-Fusha: Arabic Language Education Journal* 6, no. 2 (2024): 74-81, <https://doi.org/10.62097/alfusha.v6i2.1735>.

<sup>2</sup> Anisa Alfurochmatin and Ahmad Muhaimin Bin Mat Jusoh, "Tren Pengembangan Media Pembelajaran Bahasa Arab di Indonesia Era 5.0," *Alsina: Journal of Arabic Studies* 6, no. 1 (2024): 1-26, <https://doi.org/10.21580/alsina.6.1.21278>.

multimedia, and online learning platforms, provide opportunities for teachers to present learning materials in more varied and contextual ways. In this regard, the development and use of interactive and adaptive digital learning media play an important role in improving the quality of students' learning processes and experiences amid the rapid dynamics of educational technology.<sup>3</sup>

Despite these developments, problems related to low student interest in learning are still found in one of the Islamic boarding schools in Bogor. This condition is characterized by limited student attention, involvement, and enthusiasm during the learning process. The problem is closely related to the dominance of conventional learning methods and one-way media use, limited interactive learning media, and the presentation of Arabic vocabulary materials that are less varied and contextual.<sup>4</sup> As a result, students' interest in learning Arabic, particularly vocabulary learning that requires continuous visualization, repetition, and independent practice, tends to decline. Moreover, students in grades VIII-IX belong to the digital native generation, whose learning characteristics demand innovations that align with their learning styles. Therefore, the use of interactive e-books based on Lumi Education (H5P) is relevant to be further examined to assess their effectiveness in increasing students' interest in learning Arabic at Ar Rohmah Insan Kamil Islamic Boarding School, so

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<sup>3</sup> Dodi Mulyadi et al., "Effects of Technology Enhanced Task-Based Language Teaching on Learners' Listening Comprehension and Speaking Performance," *International Journal of Instruction* 14, no. 3 (2021): 717–36, <https://doi.org/10.29333/iji.2021.14342a>.

<sup>4</sup> Sani Susanti et al., "Dampak Negatif Metode Pengajaran Monoton terhadap Motivasi Belajar Siswa," *Pedagogik: Jurnal Pendidikan dan Riset* 2, no. 2 (2024): 86–93, <https://doi.org/10.65311/pedagogik.v2i2.529>.

that learning can be conducted in a more engaging, adaptive, and digitally oriented manner.<sup>5</sup>

A number of previous studies have shown that the development of e-books and interactive digital media has a positive contribution to Arabic language learning. Previous research can generally be classified into three main focuses. First, studies that emphasize the development and feasibility of interactive e-books. Haniah developed an interactive e-book assisted by Heyzine Flipbook for Madrasah Aliyah students in grade X using the ADDIE R&D model and found that the developed product was valid and practical to support independent learning.<sup>6</sup> Similarly, Ishak developed an e-book for genre-based Arabic reading skills and reported a very good level of validity from material and media experts, indicating that the product was feasible to be implemented.<sup>7</sup> Second, several studies focus on the effectiveness of digital media in improving cognitive learning outcomes. Farida tested the effectiveness of digital flipbooks in improving Arabic vocabulary mastery and reported a high category N-Gain, indicating a significant improvement in students' cognitive achievement.<sup>8</sup> In addition, Armando emphasized that the use

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<sup>5</sup> Ahmat Sultoni et al., "Development of Qawā'id Learning Media Based on H5P Applications to Increase Student Enthusiasm for Learning at MTsN 1 Pringsewu," *Al Mahāra: Jurnal Pendidikan Bahasa Arab* 7, no. 2 (2021): 285–300, <https://doi.org/10.14421/almahara.2021.072-07>.

<sup>6</sup> Haniah Haniah, Mahira Mahira, and Muh. Napis Djuaeni, "The Development of Interactive E-Book-Based Teaching Materials for Senior High School Students," *Arabiyatuna: Jurnal Bahasa Arab* 7, no. 1 (2023): 55–787, <https://doi.org/10.29240/jba.v7i1.6690>.

<sup>7</sup> Dina Mustika Ishak, Imam Asrori, and Nurhidayati Nurhidayati, "Development Of E-Book For Learning Arabic Reading Skills Based On A Genre Based Approach For Senior High School Students," *Ijaz Arabi Journal of Arabic Learning* 8, no. 1 (2025): 394–408, <https://doi.org/10.18860/ijazarabi.v8i1.29593>.

<sup>8</sup> Farida, P K Faiqoh, and U Faruq, "Digital Flipbook: An Innovative Medium for Arabic Vocabulary Learning," in *Proceeding International Conference on Education* (Kediri: UIN Syekh Wasil Kediri, 2025), 173–82,

of interactive media such as e-books and educational games can enhance students' enthusiasm and understanding in Arabic learning.<sup>9</sup>

However, most previous studies remain focused on media development, feasibility testing, or cognitive learning outcomes, with limited attention to learning interest as an affective aspect, particularly at the junior high school level. Empirical studies that quantitatively examine the effectiveness of interactive e-books on students' interest in learning Arabic using a quasi-experimental design are still relatively scarce.<sup>10</sup> Therefore, this study addresses the following research question: To what extent does the use of Lumi Education (H5P)-based interactive e-books affect students' interest in learning Arabic, compared to conventional learning media, among junior high school students? It is hypothesized that students in the experimental group will demonstrate a significantly higher increase in Arabic learning interest than those in the control group following the intervention. The novelty of this study lies in its explicit focus on learning interest as the main variable analyzed quantitatively, as well as in the use of Lumi Education (H5P), which integrates multimodal

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<https://jurnalfaktarbiyah.iainkediri.ac.id/index.php/proceedings/article/view/6701>.

<sup>9</sup> Gonzalez Armando, Sergeev Robert, and Gluubb Ramachandran, "Interactive Games, E-Books, and Methods to Support Arabic Language Learning Upper Secondary School State Islamic Institute," *Lingeduca: Journal of Language and Education Studies* 1, no. 2 (2023): 1-17, <https://doi.org/10.55849/lingeduca.v1i2.66>.

<sup>10</sup> Shereen Kakish, Zeyad Makhamreh, and Reem Madanat, "The Post-Pandemic Future of Digital Learning: The H5P and Interactive Learning," *Ubiquitous Learning: An International Journal* 18, no. 1 (2024): 201-17, <https://doi.org/10.18848/1835-9795/CGP/v18i01/201-217>; A.M. Mutawa, Jamil Abdul Kareem Al Muttawa, and Sai Sruthi, "The Effectiveness of Using H5P for Undergraduate Students in the Asynchronous Distance Learning Environment," *Applied Sciences* 13, no. 8 (2023): 4983, <https://doi.org/10.3390/app13084983>.

interactive activities to support students' active engagement and interest in learning.

This study uses a quantitative approach with a quasi-experimental pretest-posttest control group design to test the effectiveness of an interactive e-book based on Lumi Education (H5P) on students' interest in learning Arabic. The research subjects consisted of students in grades VIII-IX at one of the Islamic boarding schools in Bogor with a total of 60 students, which were divided into two groups, namely the experimental group (30 students) who participated in learning using an interactive e-book based on H5P and the control group (30 students) who participated in learning using conventional learning media. The selection of subjects was conducted using purposive sampling by considering the equality of academic characteristics and grade level to ensure relatively balanced initial conditions between the two groups. This sampling technique was chosen due to practical and contextual considerations, including the fixed class structure within the *pesantren* setting and the need to maintain the natural learning environment during the intervention. Although purposive sampling may introduce selection bias and limit the generalizability of the findings, this limitation was addressed by applying a pretest–posttest control group design to control for initial differences between groups and strengthen internal validity.<sup>11</sup>

The main instrument in this study is a questionnaire of interest in learning Arabic which was developed based on five indicators, namely feelings of pleasure, attention, interest, active involvement, and desire to learn independently. The questionnaire consisted of 25 statements with a five-level

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<sup>11</sup> Ulva Putri Ramadani et al., "Strategi Penentuan Populasi dan Sampel dalam Penelitian Pendidikan: Antara Validitas dan Representativitas," *Jurnal QOSIM: Jurnal Pendidikan Sosial & Humaniora* 3, no. 2 (2025): 574–85, <https://doi.org/10.61104/jq.v3i2.1021>.

Likert scale and was used as a pretest and posttest in both groups. Before use, the instrument is tested for validity and reliability to ensure the feasibility of measuring learning interest variables. The treatment was conducted over six instructional sessions across three consecutive weeks, with each session lasting approximately 45 minutes, following the regular class schedule. During this period, the experimental group used an interactive e-book based on Lumi Education (H5P) that contained multimedia elements and interactive activities, while the control group participated in the same learning topics using conventional learning media without interactive digital support.<sup>12</sup>

The data obtained were analyzed using descriptive and inferential statistical techniques. Prerequisite tests include normality and homogeneity tests to determine advanced analysis techniques. Furthermore, hypothesis testing was carried out using an independent sample t-test to determine the difference in learning interest between the experimental group and the control group after the treatment was given. In addition, the effect size calculation was carried out to determine the magnitude of the influence of the use of interactive e-books on students' interest in learning Arabic. All data analysis was carried out with the help of SPSS 27 statistical software to ensure the accuracy and objectivity of the research results.<sup>13</sup>

Therefore, this study aims to empirically test the effectiveness of Lumi Education (H5P)-based interactive e-books in increasing the interest in learning Arabic of students in grades VIII–IX SMP through a quasi-experimental approach.

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<sup>12</sup> Ardiansyah, Risnita, and Muhammad Syahran Jailani, "Teknik Pengumpulan Data dan Instrumen Penelitian Ilmiah Pendidikan pada Pendekatan Kualitatif dan Kuantitatif," *Jurnal IHSAN : Jurnal Pendidikan Islam* 1, no. 2 (2023): 1–9, <https://doi.org/10.61104/ihsan.v1i2.57>.

<sup>13</sup> Syofian Siregar, *Statistik Parametrik untuk Penelitian Kuantitatif* (Jakarta: Bumi Aksara, 2020). P. 22.

The results of this research are expected to make an empirical contribution to the development of Arabic learning media that is oriented towards improving the affective aspects of students in the digital era.

## Result

### *Instrument Validity and Reliability Test*

Before the learning interest questionnaire instrument is used in the research, a validity and reliability test is carried out to ensure that the instrument is suitable for use as a data collection tool. The validity test was carried out on 60 respondents with a significance level of 5%, so that a table  $r$  value of 0.254 was obtained. The test criteria state that an item of a statement is declared valid if the value  $r$  is calculated  $> r$  of the table. Based on the results of the analysis, all the statements in the questionnaire show that the value of  $r$  is greater than the  $r$  of the table, so it can be concluded that all questionnaire items are valid and able to measure the construct of interest in learning Arabic correctly.

Furthermore, a reliability test was carried out to determine the level of internal consistency of the Arabic language learning interest questionnaire used in this study. Reliability testing was carried out using the Cronbach's Alpha coefficient on the data from filling out the questionnaire by 60 respondents. An instrument is declared reliable if Cronbach's Alpha value  $> 0.60$ . Table 1 presents the results of the reliability test of the Arabic learning interest questionnaire.

*Table 1*  
*Reliability test of Arabic learning interest*

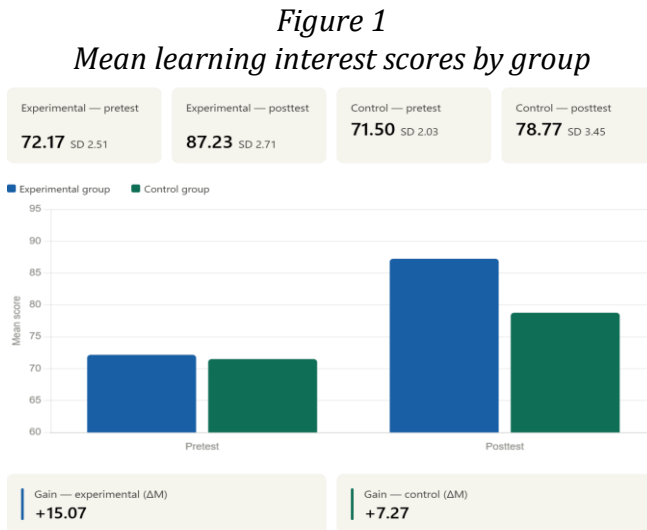
<b>N</b>	<b>Significance Level</b>	<b>rTable</b>	<b>rCount (Cronbach's Alpha)</b>
<b>60</b>	5% (0,05)	0,254	0,87

Based on the results presented in Table 1, the Cronbach's Alpha value was 0.87. This value is greater than the minimum reliability threshold of 0.60, indicating that the Arabic learning

interest questionnaire has a high level of reliability. Thus, the questionnaire used in this study was declared reliable, stable, and consistent in measuring students' interest in learning Arabic. The instrument is suitable for data collection at the pretest and posttest stages in research on the effectiveness of interactive e-books based on Lumi Education (H5P).

### ***Implementation and Final Results of Learning***

Descriptive statistical analysis was conducted to characterize students' initial and final levels of interest in learning Arabic across both groups. Figure 1 summarizes the mean scores and standard deviations for the experimental and control groups at pretest and posttest, along with the mean gain ( $\Delta M$ ) for each group.



The experimental group showed a substantially higher mean gain ( $\Delta M= 15.07$ ) compared to the control group ( $\Delta M= 7.27$ ), despite comparable pretest scores (72.17 and 71.50). This divergence suggests that the H5P-based interactive e-book produced a stronger affective response than conventional learning media, providing an initial basis for the inferential analyses that follow.

### Prerequisite Test

Before examining the effectiveness of the treatment, the data were analyzed through prerequisite statistical tests. A normality test was conducted to determine whether the data from both the experimental and control groups were normally distributed. In addition, a homogeneity test was applied to examine whether the variances of the two groups were equal. The results of these tests indicated that the data met the assumptions of normality and homogeneity, confirming that parametric statistical analysis could be appropriately used.

The normality test was carried out as a prerequisite test of analysis to determine whether the Arabic language learning interest score data in the experimental group and the control group were normally distributed. The fulfillment of normality assumptions is an important basis for the use of parametric statistical analysis, especially independent sample t-tests, which require data to come from a normally distributed population. In this study, normality tests were performed on pretest and posttest data in both groups using the Shapiro-Wilk test with the help of SPSS software. The study refers to the Shapiro-Wilk value because the number of samples in each group is less than 50 respondents, so this test is considered more accurate in testing the normality distribution of data. Table 2 presents the results of the normality test for Arabic learning interest scores in both the experimental and control groups.

*Table 2*  
*Normality test of Arabic learning interest*

Class	Shapiro-Wilk		
	Statistic	df	Sig.
Result			
Pretest Control Class	.964	30	.385
Posttest Control Class	.962	30	.341
Pretest Experimental Class	.955	30	.234
Posttest Experimental Class	.962	30	.340

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the results of the normality test in Table 2, the significance value (Sig.) Shapiro-Wilk for all data, both in the experimental group and the control group, was above the significance level of 0.05. The significance values of Shapiro-Wilk in the pretest and posttest data of the experimental group were 0.234 and 0.340, respectively, while in the control group it was 0.385 for the pretest and 0.341 for the posttest. These results show that all Arabic language learning interest data in this study is normally distributed. Thus, the assumption of normality is fulfilled and the data is feasible to analyze using parametric statistical tests at a later stage.

The variance homogeneity test was conducted as part of the analysis prerequisite test to ensure that the variance of Arabic language learning interest data in the experimental and control groups was homogeneous. Similarity of variance is an important assumption in the use of parametric statistical tests, particularly independent sample t-tests, which require that variance between groups does not differ significantly. In this study, the homogeneity test was carried out using the Levene test with the help of SPSS software. The Levene test is the most widely used method to test these assumptions because it is robust, that is, it still provides reliable results even though the data is not completely distributed normally. Therefore, the Levene test is seen as safer and more stable than other homogeneity tests. Table 3 presents the results of the homogeneity test of variance for Arabic learning interest scores in the experimental and control groups.

*Table 3*  
*Variance of Arabic learning interest scores*

		Levene Statistic	df1	df2	Sig.
Result	Based on Mean	1.452	1	58	.233
	Based on Median	1.554	1	58	.218
	Based on Median and with adjusted df	1.554	1	54.222	.218
	Based on trimmed mean	1.505	1	58	.225

Based on the results of the homogeneity test in Table 3, the significance value (Sig.) of the Levene test based on mean is 0.233, which is greater than the significance level of 0.05 (Sig. > 0.05). These results showed that there was no significant difference in variance between the experimental group and the control group. Thus, the Arabic language learning interest data in this study was declared homogeneous and met the homogeneity assumption, so it is suitable for further analysis using the independent sample t-test.

### ***Effectiveness Test***

To evaluate the effectiveness of the treatment, this study employed two types of statistical analysis. First, an independent samples t-test was conducted to determine whether there was a statistically significant difference in students' interest in learning Arabic between the experimental group and the control group after the intervention. Second, an effect size analysis was performed to measure the magnitude and practical impact of the Lumi Education (H5P)-based interactive e-book on students' learning interest. The combination of these two analyses provides a comprehensive assessment of both statistical significance and the strength of the treatment effect.

The independent samples t-test in this study was carried out to find out whether there was a significant difference in interest in learning Arabic between students who participated in learning using Lumi Education-based interactive e-books (H5P) and students who participated in learning with conventional learning media. Given that the data has met the assumptions of normality and homogeneity, hypothesis testing is carried out using an independent sample t-test. Table 4 presents the results of the independent samples t-test comparing Arabic learning interest between the experimental group and the control group after the implementation of the Lumi Education-based interactive e-book (H5P).

*Table 4*  
*Independent sample t-test of Arabic learning interest*

		Levene's Test		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Result									Lower	Upper
	Equal variances assumed	1.452	.233	10.210	58	.000	8.267	.810	6.646	9.887
	Equal variances not assumed			10.210	54.542	.000	8.267	.810	6.644	9.890

Based on the results of the independent sample t-test in Table 4, a significance value (Sig. (2-tailed)) of  $< 0.001$  was obtained, which is smaller than the significance level of 0.05 ( $p < 0.05$ ). These results suggest that there was a significant difference in interest in learning Arabic between the experimental group and the control group after the treatment was given. The t-value of 10.210 with a degree of freedom (df) of 58 and a mean difference of 8.267 showed that the experimental group had a significantly higher level of interest in learning than the control group. Thus, the null hypothesis ( $H_0$ ) is rejected and the alternative hypothesis ( $H_1$ ) is accepted.

This Independent Samples Effect Sizes test aims not only to see statistically significant differences, but also to measure how strong the effect of the treatment given is. The effect size was calculated using three approaches, namely Cohen's d, Hedges' correction, and Glass's delta, to provide a more comprehensive picture of the power of the impact of interactive e-books on students' learning interests. Table 5 presents the results of the effect size analysis, which was conducted to determine the magnitude of the effect of the Lumi Education-based interactive e-book (H5P) on students' Arabic learning interest.

The results of the effect size analysis in table 5 show that the use of interactive e-books based on Lumi Education (H5P) has a very large influence on increasing students' interest in learning. Cohen's d value of 2.636, Hedges' correction of 2.602, and Glass's delta of 2.356 indicate the size of the effect that falls into the very high category. The 95% confidence interval range

that is well above zero also shows that the influence is consistent and convincing. These findings confirm that the integration of H5P-based interactive e-books is able to significantly increase students' interest, engagement, and learning motivation compared to learning without the use of interactive media. Thus, the Lumi Education (H5P) interactive e-book can be declared effective as a learning medium that is oriented towards increasing students' interest in learning.

*Table 5*  
*Effect size of Lumi Education-Based Interactive E-Book (H5P) on learning interest*

Result	Standardizer <sup>a</sup>	Point Estimate	95% Confidence Interval	
			Lower	Upper
Cohen's d	3.136	2.636	1.933	3.327
Hedges' correction	3.177	2.602	1.908	3.283
Glass's delta	3.508	2.356	1.560	3.135

- a. The denominator used in estimating the effect sizes.  
 Cohen's d uses the pooled standard deviation.  
 Hedges' correction uses the pooled standard deviation, plus a correction factor.  
 Glass's delta uses the sample standard deviation of the control group.

## Discussion

The findings of this study demonstrate that the Lumi Education (H5P)-based interactive e-book has a statistically significant and substantively strong effect on students' interest in learning Arabic, as evidenced by a highly significant difference between the experimental and control groups ( $p < 0.001$ ) and an exceptionally large effect size (Cohen's  $d = 2.636$ ). However, the magnitude of these effect sizes warrants critical examination. Values of Cohen's  $d = 2.636$ , Hedges' correction = 2.602, and Glass's delta = 2.356 substantially exceed conventional thresholds for a "large" effect ( $d \geq 0.80$ ). These values are mathematically explicable given the narrow within-group standard deviations ( $SD \approx 2.03-2.71$ ) alongside a considerable between-group mean difference ( $\Delta M = 8.267$ ), as effect size statistics are acutely sensitive to within-group variability. Several contextual factors likely contributed to this

pattern: the single-*pasantren* sampling produced a homogeneous participant pool that compressed score variance, the 25-item Likert instrument may have introduced ceiling and floor effects between groups, and the tightly controlled six-session intervention minimized within-group performance variation. Contextualizing these values transparently assists readers in calibrating the practical implications for broader educational settings with greater participant heterogeneity.<sup>14</sup>

The substantial mean gain in the experimental group ( $\Delta M = 15.07$ ) relative to the control group ( $\Delta M = 7.27$ ) suggests that conventional learning media provide limited affective stimulation for Arabic vocabulary learning. Unlike static, teacher-centered approaches, the H5P-based interactive e-book embeds quizzes, instant feedback, and task-based activities directly within multimodal content, requiring students to respond, reflect, and make decisions throughout the learning process. This active engagement supports constructivist learning theory, which posits that learning interest develops when learners are cognitively and behaviorally involved in constructing knowledge through meaningful interaction with materials.<sup>15</sup>

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<sup>14</sup> Abdillah Mahbubi, "Conventional and Contemporary Arabic Language Teaching Methods: A Comparative Analysis," *Alsina : Journal of Arabic Studies* 6, no. 2 (2024): 205–28, <https://doi.org/10.21580/alsina.6.2.23307>; Eduardo Nacimiento-Garcia, Carina Gonzalez-González, and Cándio Caballero-Gil, "Amsawal: H5P-Based Learning Application. A Practical Example for Learning Tamazight," in *Ninth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'21)* (New York: ACM, 2021), 173–78, <https://doi.org/10.1145/3486011.3486441>.

<sup>15</sup> Raswan Raswan, Muhib Abdul Wahab, and Syaiful Hakki, "Simplifikasi Morfologi Arab (Sharf) dengan Pendekatan Konstruktivisme dan Analogi," *Arabi : Journal of Arabic Studies* 7, no. 1 (2022): 25–37, <https://doi.org/10.24865/ajas.v7i1.485>; Ahmad Farhan Rif'an Najib, "Integrasi Game Edukatif dalam Pembelajaran Bahasa Arab: Analisis

The improvement observed across all five indicators of learning interest: feelings of pleasure, attention, interest, active involvement, and independent learning desire can be mapped onto two complementary theoretical frameworks. From a constructivist perspective, the feelings of pleasure indicator reflects the intrinsic reward of meaning-making through multimodal interaction, while the attention indicator is sustained by interactive prompts embedded at intervals throughout the H5P content that continuously disrupt passive reading patterns. The interest indicator, understood as a sustained dispositional orientation toward the subject, is reinforced when learning environments connect new material to contextual and interactive encounters. From the perspective of self-determination theory (SDT), the independent learning desire indicator corresponds to the satisfaction of autonomy needs, as the H5P interface allows students to navigate content at their own pace. Meanwhile, the active involvement indicator maps onto the competence need, as task-based activities such as drag-and-drop exercises and scored quizzes provide repeated opportunities for students to experience measurable progress, further reinforced by immediate corrective feedback that closes the gap between student responses and target knowledge in real time.<sup>16</sup>

Moreover, the interactive tasks embedded in the e-book encourage active involvement, as students are required to respond, choose answers, match vocabulary, and receive immediate feedback. Immediate feedback is a critical factor in

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Efektivitas, Tantangan, dan Strategi Implementasi," *EDUTECH* 24, no. 2 (2025): 774–87, <https://doi.org/10.17509/e.v24i2.80544>.

<sup>16</sup> Damayanti Nababan, Masito Pangarbuan, and Lilis Surbakti, "Strategi Pembelajaran Afektif (SPA)," *Jurnal Pendidikan Sosial dan Humaniora* 2, no. 2 (2023): 786–91, <https://publisherqu.com/index.php/pediaqu/article/view/185>; Nurul Makrifah, "Inovasi Pemecahan Pembelajaran Bahasa Arab di Madrasah Ibtidaiyah," *Syaikhuna: Jurnal Pendidikan dan Pranata Islam* 11, no. 1 (2020): 16–30, <https://doi.org/10.36835/syaikhuna.v11i1.3840>.

enhancing learning motivation because it allows learners to recognize their progress and correct errors autonomously.<sup>17</sup> This supports self-determination theory, which posits that autonomy and competence are essential psychological needs that foster intrinsic motivation. The H5P-based interactive e-book fulfills these needs by allowing students to control their learning pace and interact directly with learning content.<sup>18</sup>

These findings are consistent with prior research confirming that interactive digital media enhance affective engagement in language learning contexts. However, this study extends existing evidence by quantitatively demonstrating a strong affective effect specifically at the junior high school level using a controlled quasi-experimental design. Such a methodological contribution has received limited attention in Arabic language learning research.<sup>19</sup>

Despite these positive findings, this study has certain limitations. The research focused solely on learning interest as an affective variable and did not examine long-term retention

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<sup>17</sup> Sahkholid Nasution and Zulheddi Zulheddi, "Pengembangan Model Pembelajaran Bahasa Arab Berbasis Teori Konstruktivisme di Perguruan Tinggi," *Arabi: Journal of Arabic Studies* 3, no. 2 (2018): 121-44, <https://doi.org/10.24865/ajas.v3i2.96>; Tri Tami Gunarti, "Pengembangan Media Pembelajaran Bahasa Arab Berbasis Audio Visual untuk Meningkatkan Maharah Istima' pada Siswa-siswi Madrasah Ibtidaiyah," *Awwaliyah: Jurnal PGMI* 3, no. 2 (2020): 122-29, <https://doi.org/10.58518/awwaliyah.v3i2.598>.

<sup>18</sup> M. Abdul Hamid, Danial Hilmi, and M. Syaiful Mustofa, "Pengembangan Bahan Ajar Bahasa Arab Berbasis Teori Belajar Konstruktivisme untuk Mahasiswa," *Arabi: Journal of Arabic Studies* 4, no. 1 (2019): 100-114, <https://doi.org/10.24865/ajas.v4i1.107>; Ahmad Fadilah Khomsah and Muassomah Muassomah, "Penerapan E-learning dalam Pembelajaran Bahasa Arab di Masa Pandemi," *Tarbiyatuna: Jurnal Pendidikan Ilmiah* 6, no. 1 (2021): 1-14, <https://doi.org/10.55187/tarjpi.v6i1.4300>.

<sup>19</sup> Renta Leinvarben Sihombing and Urbanus Sukri, "Pengaruh Strategi Pembelajaran Afektif terhadap Karakter Mahasiswa," *Skenoo: Jurnal Teologi dan Pendidikan Agama Kristen* 1, no. 2 (2021): 116-27, <https://doi.org/10.55649/skenoo.v1i2.6>.

or cognitive learning outcomes.<sup>20</sup> In addition, the sample was limited to a single Islamic boarding school context, and the homogeneous nature of the participant pool, as reflected in the narrow within-group score distributions, may limit the generalizability of the findings to more diverse educational settings. Future studies are encouraged to integrate affective and cognitive variables simultaneously, apply longitudinal designs, involve broader and more heterogeneous educational contexts, and consider instruments with wider score ranges to produce more moderate and generalizable effect size estimates.<sup>21</sup>

Overall, this study confirms that the integration of Lumi Education (H5P)-based interactive e-books significantly enhances students' interest in learning Arabic. The results highlight the importance of interactive digital media in fostering affective engagement, particularly in foreign language learning. Therefore, educators and curriculum developers are encouraged to adopt interactive e-books as part of innovative instructional strategies to create more engaging, student-centered, and motivating Arabic language learning environments in the digital era.

## Conclusion

This study confirms that the use of a Lumi Education (H5P)-based interactive e-book has a significant and meaningful impact on students' interest in learning Arabic, as evidenced by a statistically significant difference between the

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<sup>20</sup> Moh Ismail, Fairuz Subakir Ahmad, and Muhammad Alamuddin Ma'ruf, "The Impact of Learning Management System 'Arabi.Id' Web-Based Application on Developing Arabic Language Skills," *Al-Ta'rib : Jurnal Ilmiah Program Studi Pendidikan Bahasa Arab IAIN Palangka Raya* 11, no. 2 (2023): 213-32, <https://doi.org/10.23971/altarib.v11i2.6591>.

<sup>21</sup> Agus Yasin et al., "Aṣar al-Yūtyūb Kawasilah Ta'limiyyah Tafā'uliyyah fi Tanmiyyah Mahārah al-Kalām Ladāi Ṭullāb al-Marḥalah al-Mutawassitah," *Aphorisme: Journal of Arabic Language, Literature, and Education* 6, no. 1 (2025): 636-48, <https://doi.org/10.37680/aphorisme.v6i1.7754>.

experimental and control groups ( $p < 0.001$ ) accompanied by a large practical effect. The findings indicate that integrating structured interactivity, multimodal content, and immediate feedback can enhance learners' affective engagement and support active knowledge construction in line with constructivist learning principles. These results highlight the pedagogical value of interactive e-books as more than supplementary digital tools, positioning them as effective instructional media capable of fostering the motivational and emotional dimensions of language learning in contemporary educational environments. Future studies are recommended to investigate long-term effects on both affective and cognitive outcomes, involve more diverse learner populations, and examine other Arabic language skills to further strengthen the generalizability of these findings.

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