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Minat Belajar : Bagaimana Eksperimentasi Model Pembelajaran *Technology Enhanced Learning* (TEL)?

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Learning Interest: How Does the Experimentation of the Technology-Enhanced Learning (TEL) Models?

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Abstrak: Penelitian ini bertujuan untuk mengetahui efektivitas model pembelajaran Technology Enhanced Learning (TEL) terhadap minat belajar peserta didik pada mata pelajaran PAI di SMP Negeri 23 Bandar Lampung. Metode yang digunakan adalah kuantitatif dengan desain quasi-eksperimen. Sampel penelitian terdiri dari kelas VIII D sebagai kelas eksperimen dan VIII E sebagai kelas kontrol. Data dikumpulkan melalui angket dan Teknik analisis data yang digunakan adalah uji normalitas, homogenitas, dan independent sampel T- Test. Hasil penelitian menunjukkan bahwa model pembelajaran Technology Enhanced Learning (TEL) berpengaruh positif dan signifikan terhadap minat belajar peserta didik, dengan nilai signifikansi 0,000 (<0,05). Secara kelembagaan, penelitian ini berkontribusi pada pengembangan model pembelajaran yang adaptif terhadap perubahan zaman dan dapat menjadi acuan bagi sekolah maupun guru dalam mendesain kurikulum berbasis teknologi. Lebih jauh, penelitian ini memperluas literatur akademik terkait efektivitas TEL dalam konteks spesifik pembelajaran PAI, yang selama ini relatif kurang mendapat perhatian, sehingga membuka peluang kajian lanjutan di bidang inovasi pembelajaran berbasis teknologi.

Keywords:

Technology Enhanced Learning,
Learning Interest, Islamic
Education

Abstract: This study aims to examine the effectiveness of the Technology Enhanced Learning (TEL) model in increasing students' learning interest in Islamic Education (PAI) at SMP Negeri 23 Bandar Lampung. The research employed a quantitative method with a quasi-experimental design. The sample consisted of class VIII D as the experimental group and class VIII E as the control group. Data were collected using questionnaires, and the data analysis techniques included normality tests, homogeneity tests, and an independent sample t-test. The findings indicate that the TEL learning model has a positive and significant effect on students' learning interest, with a significance value of 0.000 (<0.05). Institutionally, this research contributes to the development of learning models that are adaptive to technological advancements and may serve as a reference for schools and teachers in designing technology-integrated curricula. Furthermore, this study enriches the academic literature on the effectiveness of TEL within the specific context of Islamic Education, an area that has received relatively little attention, thereby opening opportunities for further research in technology-based learning innovations.

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INTRODUCTION

Education is a fundamental asset possessed by every individual, playing a crucial role in the advancement of a nation (Desi Pristiwanti, 2022; Nada et al., 2024; Raniadini et al., 2024). Learning is the central element of the educational process (Fadilah et al., 2023; Kaniawati et al., 2023; Salsabila Salsabila et al., 2024). Aiming to establish a learning environment that nurtures students' potential for the good of individuals, society, and the nation (Akilla et al., 2024; Faizah & Kamal, 2024; Kustandi et al., 2021). The learning process involves considering several essential components, such as learning goals, instructional materials, teaching methods or strategies, educational tools, and assessment methods to measure learning outcomes (Adisel et al., 2022). Students' interest is strongly connected to their learning, as those who are highly interested typically show greater enthusiasm, participate more actively, and understand the material more effectively (Ndraha et al., 2022; Sinaga & Yunilisa, 2024; Waddi Fatimah, Perawati Bte Abustang, 2023; Widiati et al., 2022).

Interest represents a person's focused engagement, driven by curiosity or a strong willingness to take part in learning activities (Chandra et al., 2023; Pinta et al., 2024). Having a strong interest in learning is essential in the educational process, as it drives students to reach their goals and attain the best possible learning results (Nurhayati & Nasution, 2022; Reski, 2021; Sari et al., 2025). Learning interest is a psychological element that greatly impacts how an individual learns (Rina Dwi Muliani & Arusman, 2022). Students' enthusiasm for learning is impacted by internal aspects like curiosity, drive, comfort, and health, in addition to external influences such as backing from teachers, parents, and peers (Korompot et al., 2020; Mesra et al., 2021; Ntn et al., 2024)

Although learning interest is essential for the success of education, real-world conditions show that various challenges at both micro and macro levels also affect the development of a learning environment that encourages such interest. In Indonesia, educational problems can be categorized into two main types: micro-level issues, which pertain to the education system such as curriculum design, and macro-level challenges, which include major concerns like unequal access to education across regions and the high cost of schooling (Novitriani et al., 2024; Palobo & Yoenanto, 2024; Suncaka, 2023). The Merdeka Curriculum offers various types of intrakurricular learning designed to help students build a solid understanding of concepts and fully develop their competencies (F. Jannah et al., 2022; L. Jannah & Nuriana, 2024; Ningsih et al., 2024; Setiyorini & Setiawan, 2023).

Preliminary research carried out through observations and interviews with Mr. Rian Saputra, M.Pd, the Islamic Religious Education teacher, as well as two eighth-grade students at SMP Negeri 23 Bandar Lampung, revealed several challenges in the learning process. The issues include: (1) limited student participation due to a teacher-centered learning model, (2) varied student interest in learning influenced by their family's religious background, (3) low learning motivation caused by materials that do not align

with students' interests, (4) restricted flexibility in learning owing to conventional methods, and (5) students' low scores failing to meet the Minimum Competency Criteria (KKM), likely resulting from insufficient interaction during the learning process.



Figure 1.
Recapitulation of Pre-Research Results on Students' Learning Interest.

In Figure 1, curiosity stands out as the indicator with the highest percentage at 29%, showing that many students are intrigued by the learning material. On the other hand, participation in learning activities and paying attention have the lowest percentage, at just 15%, indicating that student engagement is still limited. Other indicators such as enjoyment (21%), unprompted learning awareness (19%), and preference expressions (16%) also reveal that motivation to learn requires enhancement. Therefore, adopting a more engaging and relevant learning model is necessary to boost students' activity, motivation, and involvement in the learning process.

In this study, the researcher aims to provide a solution to enhance the impact of learning by implementing the Technology Enhanced Learning (TEL) instructional model. This model offers a different approach compared to traditional learning methods, while maintaining the same primary objective of enhancing students' interest in learning. By employing this model, the learning process is expected to shift from conventional methods to a more active approach, where students are more engaged and better able to collaborate during discussions with their peers. The Technology Enhanced Learning (TEL) model is founded upon the principles of cognitive multimedia theory. In this study, the researcher aims to provide a solution to enhance the impact of learning by implementing the Technology Enhanced Learning (TEL) instructional model. This model offers a different approach compared to traditional learning methods, while maintaining the same primary objective of enhancing students' interest in learning. By employing this model, the learning process is expected to shift from conventional methods to a

more active approach, where students are more engaged and better able to collaborate during discussions with their peers. The Technology Enhanced Learning (TEL) model is founded upon the principles of cognitive multimedia theory. This study aims to propose a solution for improving learning effectiveness by applying the Technology Enhanced Learning (TEL) instructional model. Unlike traditional teaching methods, this model adopts a novel approach while still focusing on increasing students' interest in learning. Through the implementation of TEL, the learning process is anticipated to transition from conventional practices to a more interactive format, fostering greater student engagement and enhancing collaboration during peer discussions. The TEL model is grounded in the cognitive multimedia theory, which supports its instructional design principles. This model offers a different approach compared to traditional learning methods, while maintaining the same primary objective of enhancing students' interest in learning. By employing this model, the learning process is expected to shift from conventional methods to a more active approach, where students are more engaged and better able to collaborate during discussions with their peers. The Technology Enhanced Learning (TEL) model is founded upon the principles of cognitive multimedia theory (L. Jannah & Nuriana, 2024). The Cognitive Multimedia Theory serves as a conceptual framework that describes the way people process and understand information delivered via different media formats. The Cognitive Multimedia Theory is a theoretical framework that explains how individuals process and comprehend information presented through various types of media (AlShaikh et al., 2024). Technology-enhanced learning, or technology-based learning, is an educational approach where teachers utilize various technological tools such as videos, laptops, projectors, and e-books to facilitate and support students' learning processes (Dananjaya I Wayan Wijatmika, 2024; Dayyana et al., 2022). Integrating Technology Enhanced Learning (TEL) in education has the potential to increase students' interest and spark their curiosity, which subsequently leads to greater motivation and enthusiasm for active participation in lessons (Putri, 2020).

Findings from various studies, including those by Patriasya (2025), Sulastri (2025), Yustisiani (2023), the findings demonstrate that the implementation of Technology Enhanced Learning (TEL) effectively improves educational quality at various levels. In early childhood education, TEL makes religious learning more captivating and assists children in comprehending Islamic values in an enjoyable and meaningful manner. In medical education, TEL aids students in acquiring clinical skills through simulations, digital games, and computer-based training. At the junior high school level, TEL has been found to boost students' interest in Islamic Religious Education (IRE) by delivering content in a more interactive and engaging way, reducing monotony. This study is important because, despite numerous prior studies showing that technology enhances both learning quality and student engagement, there is limited research specifically investigating how the integration of presentation methods within IRE especially when supported by technology can comprehensively enhance students'

learning interest. This research contributes originality by examining the use of the TEL model in relation to students' interest in learning Islamic Religious Education, an area not thoroughly explored in the previous studies mentioned.

This study makes a unique contribution by specifically investigating the effectiveness of the Technology Enhanced Learning (TEL) model in enhancing students' interest in Islamic Religious Education (IRE) at the junior high school level. Unlike previous research that has generally discussed TEL across various educational stages, this study focuses on how technology-based presentation methods can be integrated into the context of IRE instruction, which has traditionally been delivered through conventional approaches. By combining technology with more interactive pedagogical strategies, this research offers an innovative and adaptive approach that aligns with the demands of digital-era education particularly in fostering students' interest and motivation to understand religious values.

The significance of this research stems from the necessity to establish the Technology Enhanced Learning (TEL) model which includes technology-assisted learning, e-learning, mobile learning, online learning, and web-based instruction as a practical approach in contemporary education. This study aims not only to deepen the understanding of TEL's role in boosting students' interest in Islamic Religious Education (IRE) but also to provide a foundation for creating more innovative and forward-looking teaching methods. The research underscores the importance of incorporating technology into IRE teaching and calls for educators to implement policies that encourage creative and relevant learning approaches. The results are anticipated to expand knowledge about how the TEL model affects students' enthusiasm for IRE and to offer new perspectives on how blending technology with traditional instructional methods can improve learners' comprehension and skills development.

This study seeks to evaluate the effectiveness of the Technology Enhanced Learning (TEL) model in boosting students' interest in Islamic Religious Education (IRE) at the junior high school level. The research specifically investigates how integrating technology into the learning process can promote active student participation and increase their motivation to comprehend IRE content. Using a quantitative methodology with a quasi-experimental design, the study aims to provide empirical evidence that supports the development of innovative and relevant teaching approaches suitable for the digital age. Additionally, the results are intended to guide educators in creating flexible instructional strategies that meet the needs and learning styles of modern students.

METHOD

This research is planned to take place in the first semester of the 2024/2025 academic year at SMP Negeri 23 Bandar Lampung. Considering the nature of the data and the analytical methods applied, the study utilizes a quantitative methodology with a quasi-experimental framework. It is classified as a quasi-experimental study due to its objective of investigating the cause-and-effect relationship between the independent

and dependent variables.

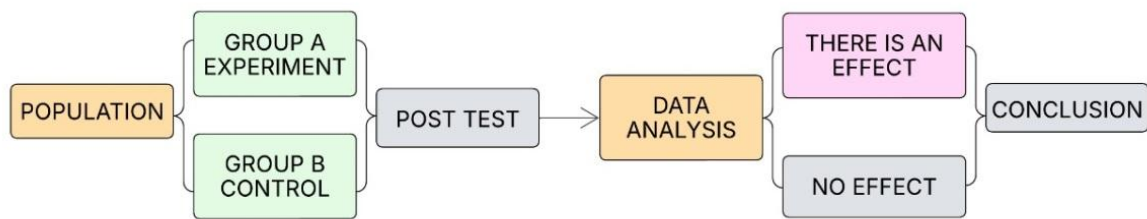


Figure 2.
Quasy Experimental Design

The population of this study included all eighth-grade students, totaling 250 individuals distributed across eight classes. The research sample was drawn from two specific classes: Class VIII D, consisting of 30 students assigned to the experimental group, and Class VIII E, consisting of 31 students as the control group. The participants were chosen using a simple random sampling method. To gather the necessary data, the researcher utilized a questionnaire based on the Likert scale, which offered five response options: strongly agree, agree, neutral, disagree, and strongly disagree. The primary variable measured through this instrument was students' learning interest, which was evaluated using a post-test conducted in both the experimental and control group.

The questionnaire measured the variable of learning interest and was administered as a post-test to students in both the experimental and control groups. Initially, the questionnaire consisted of 15 statements that were validated by expert validators. The questionnaire was first trialed in a class where the TEL model had not yet been introduced. Data from this pilot test were processed using SPSS version 27 to assess item validity, which resulted in 10 items meeting the validity criteria. An item was deemed valid if its correlation coefficient exceeded the critical r-value or if the significance level (Sig.) was below 0.05. Subsequently, a reliability analysis was conducted, yielding a Cronbach's Alpha score of 0.676. This indicates that the instrument is reliable, as reliability is established when the Cronbach's Alpha value surpasses 0.6.

The questionnaire, having been validated and confirmed reliable, was then administered to both the experimental and control groups. The gathered data from the questionnaires were organized and examined using SPSS version 27. Initial analysis involved testing assumptions, including a normality test to check if the data followed a normal distribution and a homogeneity test to evaluate the equality of variances across groups. Ultimately, an independent samples t-test was performed to assess the impact of the treatment on the study's results. The implementation of the Technology Enhanced Learning (TEL) model involved several steps:

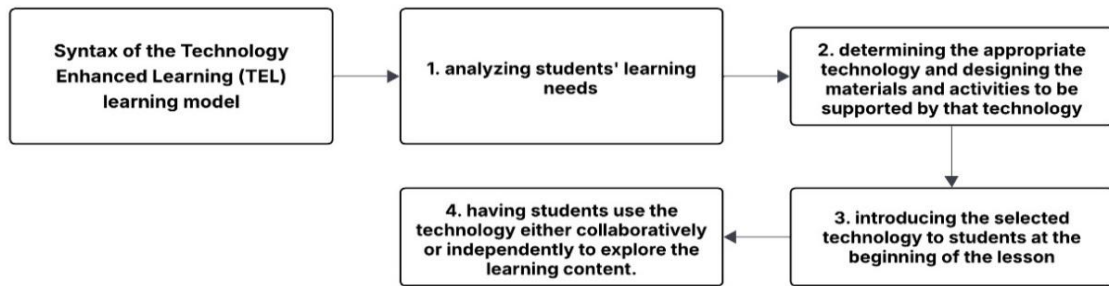


Figure 3.
Instructional Syntax of Technology Enhanced Learning (TEL) Model

RESULTS AND DISCUSSION

Results

Data gathered from eighth graders at SMP Negeri 23 Bandar Lampung demonstrate that the research centers on students' motivation to learn. The post-test results were obtained from both the experimental and control groups. Prior to conducting the t-test, the data were examined for normality and variance equality. The following are the outcomes of these assessments along with the hypothesis analysis :

Assumption Test

1. Normality Test

The A normality test was conducted to verify whether collected data follow a normal distribution pattern. Data are considered normal if significance value (sig) exceeds 0.05. Results of normality testing on learning interest of eighth-grade students at SMP Negeri 23 Bandar Lampung are presented in Table 1.

Table 1.
Results of the Normality Test
Tests of Normality

Kelompok	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Hasil Eksperimen	.132	30	.196	.970	30	.549
Kontrol	.109	31	.200*	.955	31	.211

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

a. Lilliefors Significance Correction

Based on the table, the normality test using the Shapiro-Wilk method yielded significance values of 0.594 and 0.211. According to the criteria, since the significance values are greater than 0.05, the data can be considered normally distributed

2. Homogeneity Test

The homogeneity test is performed to determine if the data have equal (homogeneous) or unequal (heterogeneous) variances. Data are considered homogeneous when the significance level (sig) is greater than 0.05.

Table 2.
Homogeneity Test Results
Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Hasil	Based on Mean	1.017	1	59	.317
	Based on Median	.952	1	59	.333
	Based on Median and with adjusted df	.952	1	57.587	.333
	Based on trimmed mean	1.005	1	59	.320

The table shows that the homogeneity test yielded a significance value of 0.317. Since this value is greater than 0.05, the data are considered homogeneous.

3. Hypothesis Testing

This hypothesis test utilized a t-test to assess the impact of the independent variable on the dependent variable. The results of the t-test concerning the learning interest of students at SMP Negeri 23 Bandar Lampung are displayed in Table 3.

Table 3.
Hypothesis Test Results

		Levene's Test for Equality of Variances		Independent Samples Test						
		F	Sig.	t-test for Equality of Means			95% Confidence Interval of the Difference			
				t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Hasil	Equal variances assumed	1.017	.317	5.738	59	.000	6.1720	1.0757	4.0196	8.3245
	Equal variances not assumed			5.756	57.631	.000	6.1720	1.0724	4.0252	8.3189

The results of the independent samples t-test showed a significance level (p-value) of 0.000, which is below the 0.05 threshold. This result supports the acceptance of the alternative hypothesis (H_a) and the rejection of the null hypothesis (H_0). This indicates that, in this study, the Technology Enhanced Learning (TEL) model has a significant effect on students' learning interest.

Discussion

The research results show that using the Technology Enhanced Learning (TEL) model in Islamic Education has a strong positive effect on getting students more involved in learning. Adding technology into lessons makes students more interested and curious, which encourages them to take part actively in class. Using digital tools in teaching makes learning more fun and effective. With this method, students don't just listen they also use technology as part of their learning. (Dananjaya I Wayan Wijatmika, 2024). Technology-enhanced learning is not confined to the classroom, as this approach can also be utilized independently by students through the use of their own technological devices (Nadya et al., 2025; Patriasya et al., 2025), Therefore, it is essential for everyone to learn how to use technology properly and effectively (Dubey & Sahu, 2021; Lailan, 2024; Sitompul, 2022).

Moreover, observations conducted during the study revealed that students actively participated in the Islamic Education learning process, which served as the primary focus of the instructional activities. These findings show that using Technology-Enhanced Learning (TEL) can increase students' interest in learning. TEL also helps students understand the lessons more clearly, especially in Islamic Religious Education, which improves their academic results.

Furthermore, this study differs from previous research on the TEL learning model, such as those conducted by (Bergdahl, N., Nouri, J., & Fors, 2020), (Durall, E., Bauters, M., Hietala, I., Leinonen, T., & Kapros, 2020), dan (Shadiev, R., & Yang, 2020), lies in the scope of Technology Enhanced Learning (TEL) implementation. Past research mostly focused on how Technology-Enhanced Learning (TEL) was used Unlike earlier studies, this research adds something new by focusing on students' interest in learning through technology-based Islamic Education. The TEL model increases students' excitement for learning by using fun and interactive media. Through TEL, students are able to see, hear, and even directly interact with the material, which facilitates better comprehension of the lessons. The involvement of multiple senses in the learning process increases student interest and motivation to participate actively in class. Moreover, the classroom atmosphere becomes more dynamic and less monotonous, stimulating students' curiosity. Mastery of technology is also essential to make learning more relevant and enjoyable for today's generation.

Using the TEL model can help make students more interested in learning by including fun and interactive media. This model can be a better option than traditional teaching methods because it gets students more involved in learning, especially in Islamic Education (PAI). Teachers also need to use different teaching strategies to make lessons more interesting for their students. (Sihombing et al., 2024). This approach keeps students from getting bored quickly and motivates them to take a more active role in learning, which leads to greater interest and involvement. (Azizah et al., 2025; Nada et al., 2024).

This study shows that using the Technology-Enhanced Learning (TEL) model can greatly improve students' interest and active participation in learning Islamic Religious

Education (IRE). The findings suggest that teaching methods should include technology to make lessons more engaging, support teamwork, and meet the needs of students in today's digital world. TEL not only makes students more curious but also helps them understand the material better by using different types of media and learning styles. This research can help schools and teachers create modern, tech-based learning models that match current trends. It also adds to the academic discussion about TEL, especially in the field of IRE, which has not been widely explored yet. This opens up new opportunities for future research on using technology in education.

CONCLUSION

The research results show that students in the experimental class had a greater increase in learning interest after using the Technology Enhanced Learning (TEL) model, compared to those taught with traditional methods. A normality test on the post-test scores gave values of 0.196 and 0.200, showing the data was normally distributed. The homogeneity test gave a value of 0.317, which is above 0.05, meaning the differences in learning interest between the two groups were similar. The hypothesis test gave a result of 0.000, which is less than 0.05, so the null hypothesis was rejected. This means there was a clear difference in students' interest in Islamic Education (PAI) between those who learned with the TEL model and those who used regular teaching methods. In conclusion, the TEL model is more effective in increasing students' learning interest. These findings support the original idea that TEL helps boost student interest, likely because it is easier for students to engage with and makes learning more enjoyable.

Given the limitation of this study, which examined only a single instructional model Technology Enhanced Learning (TEL) within one subject area and a restricted scope, future research is recommended to consider the simultaneous or comparative use of two instructional models. For instance, combining TEL with cooperative, contextual, or project-based learning models could provide insights into their synergy and comparative effectiveness in enhancing students' interest and learning outcomes. Such an approach may not only enrich the analysis but also offer new perspectives on how the integration of dual pedagogical strategies can more adaptively and contextually meet the learning demands of the 21st century. Therefore, future research could help create new and innovative teaching approaches for different grade levels and subjects.

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