

The Effect of the Team Accelerated Instruction Learning Model, Supported by Wordwall Media, on Students' Interest in Mathematics Learning

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Abstract

This study aims to determine the effect of the Team Accelerated Instruction (TAI) learning model, supported by Wordwall, on the interest in learning mathematics among seventh-grade students at SMP Negeri 2 Tambangan. This study employs a quantitative approach using an experimental method. Data were collected through questionnaires and analyzed using normality tests, homogeneity tests, paired t-tests, independent t-tests, and simple linear regression analysis. The results indicate that the Team Accelerated Instruction (TAI) learning model supported by Wordwall has a significant effect on students' interest in learning mathematics. Therefore, the implementation of the Team Accelerated Instruction (TAI) learning model supported by Wordwall can increase students' interest in learning mathematics.

Keywords: *Team Accelerated Instruction; Wordwall; Learning Interest; Mathematics.*

Abstrak

Penelitian ini bertujuan untuk mengetahui pengaruh model pembelajaran Team Accelerated Instruction (TAI) berbantuan media Wordwall terhadap minat belajar matematika siswa kelas VII SMP Negeri 2 Tambangan. Penelitian ini menggunakan pendekatan kuantitatif dengan metode eksperimen. Data dikumpulkan menggunakan angket dan dianalisis melalui uji normalitas, uji homogenitas, uji paired sample t-test, uji independent sample t-test, dan analisis regresi linear sederhana. Hasil penelitian menunjukkan bahwa model pembelajaran Team Accelerated Instruction (TAI) berbantuan media Wordwall berpengaruh signifikan terhadap minat belajar matematika siswa. Oleh karena itu, penerapan model pembelajaran Team Accelerated Instruction (TAI) berbantuan media Wordwall dapat meningkatkan minat belajar matematika siswa.

Kata Kunci: *Team Accelerated Instruction, Wordwall, Minat Belajar, Matematika.*

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INTRODUCTION

Learning interest is one of the important factors that influence students' success in learning. Students with high learning interest tend to be more active, enthusiastic, and able to achieve better learning outcomes. Conversely, low learning interest can reduce students' participation during the learning process (Slameto, 2015). Learning interest is influenced by internal and external factors, including learning models and instructional media used by teachers (Susanto, 2016).

Mathematics is one of the subjects that requires students' active participation. However, many students still perceive mathematics as a difficult and less interesting subject. Therefore, teachers need to apply innovative learning models to create meaningful learning experiences (Djamarah, 2018). Learning activities that involve students actively can increase students' curiosity and learning interest (Uno, 2021).

One of the cooperative learning models that can be implemented is Team Accelerated Instruction (TAI). TAI emphasizes group cooperation and individual responsibility in solving learning tasks. According to Slavin (2015), TAI combines individual learning and teamwork to improve students' understanding and participation. Furthermore, Huda (2017) explained that the implementation of TAI enables students to help each other and encourages active interaction among group members.

Besides learning models, instructional media also play an important role in increasing students' learning interest. Wordwall is a web-based application that provides interactive educational games and quizzes that make learning more interesting and enjoyable (Sherianto, 2020). Wordwall can also be used as learning media and evaluation tools to support learning activities (Asnawir & Usman, 2002).

Several previous studies have reported that the Team Accelerated Instruction model positively affects students' learning outcomes and motivation (Meneses, 2020; Julianti & Efendi, 2023). However, studies discussing the effect of the Team Accelerated Instruction (TAI) learning model assisted by Wordwall

media on students' mathematics learning interest are still limited. Therefore, this study aims to determine the effect of the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media on students' mathematics learning interest at grade VII of SMP Negeri 2 Tambangan.

RESEARCH METHODS

This study employed a quantitative approach with an experimental method (Sugiyono, 2022). The research was conducted at SMP Negeri 2 Tambangan in the academic year 2025/2026. The population of this study consisted of all seventh-grade students of SMP Negeri 2 Tambangan, while the sample was selected based on the research design. The instrument used in this study was a questionnaire to measure students' mathematics learning interest. According to Arikunto (2019), questionnaires are commonly used to collect data related to attitudes, interests, and responses of research subjects. Data collection was carried out by administering questionnaires before and after the implementation of the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media. The obtained data were analyzed using IBM SPSS. Data analysis techniques included normality test and homogeneity test as prerequisite tests. Furthermore, hypothesis testing was conducted using paired sample t-test, independent sample t-test, and simple linear regression analysis to determine the effect of the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media on students' mathematics learning interest (Ghozali, 2021).

RESULTS AND DISCUSSION

The data in this study were collected through a questionnaire on interest in learning mathematics administered to seventh-grade students at SMP Negeri 2 Tambangan. The questionnaire was administered to two groups—the experimental class and the control class—both before (pretest) and after (posttest) the intervention. The experimental class received instruction using the Team

Accelerated Instruction (TAI) model supported by Wordwall, while the control class used conventional instruction.

a. Paired Sample t-Test

The paired sample t-test was conducted to determine the difference in students' mathematics learning interest before and after treatment. The results showed that the significance value was less than 0.05. Therefore, there was a significant difference in students' mathematics learning interest after applying the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media.

Table 1. Paired Sample t-Test Results

Paired Samples Test									
<i>Paired Differences</i>									
		<i>Mean</i>	<i>Std. Deviation</i>	<i>Std. Error Mean</i>	<i>95% Confidence Interval of the Difference</i>		<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>
					<i>Lower</i>	<i>Upper</i>			
Pair 1	pre_eksperimen - post_eksperimen	-20.20833	.93153	.19015	-20.60169	-19.81498	-106.277	23	<.001
Pair 2	pre_kontrol - post_kontrol	-6.04167	.85867	.17528	-6.40425	-5.67908	-34.469	23	<.001

b. Independent Sample t-Test

The independent sample t-test was conducted to compare the mathematics learning interest between the experimental class and the control class. The results showed that the significance value was less than 0.05, indicating that there was a significant difference between the two classes.

Table 2. Independent Sample t-Test Results

Independent Samples Test									
		<i>Levene's Test for Equality of Variances</i>		<i>t-test for Equality of Means</i>					
		<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	<i>Mean Difference</i>	<i>Std. Error Difference</i>	<i>95% Confidence Interval of the Difference</i>
									<i>Lower</i> <i>Upper</i>
Hasil angket	Equal variances assumed	2.210	.144	20.023	46	<.001	15.292	.764	13.754 16.829
	Equal variances not assumed			20.023	44.075	<.001	15.292	.764	13.753 16.831

c. Simple Linear Regression Test

The Model Summary table shows that the correlation coefficient (R) is 0.970, indicating a very strong relationship between the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media and students' mathematics learning interest. The coefficient of determination (R Square) is 0.942, which means that 94.2% of the variation in students' mathematics learning interest can be explained by the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media, while the remaining 5.8% is influenced by other factors.

Table 3. Model Summary of Simple Linear Regression

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.970 ^a	.942	.940	1.921
a. Predictors: (Constant), model tai berbantuan media wordwall				

Simple linear regression analysis was conducted to determine the effect of the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media on students' mathematics learning interest. The results showed that the significance value was less than 0.05, indicating that the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media had a significant effect on students' mathematics learning interest.

Table 4. ANOVA Results of Simple Linear Regression Test

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2745.188	1	2745.188	743.727	.001 ^b
	Residual	169.792	46	3.691		
	Total	2914.979	47			
a. Dependent Variable: minat belajar						
b. Predictors: (Constant), model tai berbantuan media wordwall						

The coefficients table shows that the regression coefficient of the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media is 15.125 with a significance value of less than 0.001. Since the significance value is smaller than 0.05, it can be concluded that the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media significantly

affects students' mathematics learning interest. Furthermore, the positive regression coefficient indicates that the implementation of the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media contributes positively to increasing students' mathematics learning interest.

Table 5. Coefficients of Simple Linear Regression

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	63.792	.392		162.664
	model tai berbantuan media wordwall	15.125	.555	.970	27.271

a. Dependent Variable: minat belajar

After analyzing the data using IBM SPSS Statistics, the research results were interpreted based on the research questions that had been established. Based on the first research question—regarding the use of the Team Accelerated Instruction (TAI) learning model supported by Wordwall—the results showed that the learning process proceeded effectively and successfully increased students' interest in learning. This was evident from the increase in learning interest scores in the experimental group following the intervention, where students demonstrated more active engagement, better attention, and a high level of interest in participating in mathematics lessons.

Furthermore, based on the second research question—namely, whether the use of the Team Accelerated Instruction (TAI) learning model supported by Wordwall media has an effect on learning interest—the results of the statistical tests indicate that there is a significant effect. This was demonstrated through a paired-sample t-test, which showed an increase in learning interest before and after the intervention, as well as an independent-sample t-test, which revealed a significant difference between the experimental and control groups with a significance level of < 0.05 . Additionally, the results of the regression analysis also indicated that the TAI learning model supported by Wordwall significantly influences students' learning interest.

The results showed that the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media had a positive effect on students' mathematics learning interest. Cooperative learning encourages students to actively participate and interact with group members. According to Slavin (2015), cooperative learning can improve students' involvement in the learning process. Similarly, Huda (2017) stated that TAI encourages students to help each other in understanding learning materials.

In addition, the findings of this study are supported by the strengths of the Team Accelerated Instruction (TAI) model, which is cooperative and collaborative in nature, allowing students to work together and help one another understand the material. The use of the interactive, digital Wordwall platform also provides a more engaging learning experience, thereby increasing students' motivation and interest in learning.

Mathematics instruction that remains teacher-centered tends to make students less active in the learning process. This situation leads to low student engagement, which in turn results in low interest in learning. Therefore, a learning model that can actively engage students is needed. Through peer interaction, the learning process becomes more dynamic and less monotonous, thereby increasing student engagement and, consequently, their interest in learning.

This difference indicates that teaching approaches play a significant role in determining students' level of interest in learning. Teacher-centered instruction tends to make students less active, whereas instruction that directly involves students can enhance their engagement and conceptual understanding. Students' thinking processes also develop further because they are engaged in discussions and hands-on learning experiences (Widada & Herawaty, 2018), (Widada & Herawaty, 2017).

In contrast, in the experimental group, the learning atmosphere became more lively and interactive because students were given the opportunity to collaborate, discuss, and actively participate (Lubis et al., 2021). This led to a significant increase in students' interest in learning compared to the control group.

Learning designed systematically through proper planning, development, and implementation stages also enhances learning effectiveness. Thorough planning allows students to follow the learning flow more effectively, making it easier for them to understand concepts. Additionally, a conducive learning environment supports students' active engagement in the learning process.

Learning success is determined not only by the model used, but also by how effectively the learning process is designed and implemented (Lubis & Widada Wahyu, 2020) (Lubis et al., 2021). Furthermore, the results of the regression analysis show that there is a positive and significant relationship between the learning model and students' interest in learning (M Tuah Lubis & Siregar, 2024).

The use of Wordwall media also contributes to creating interactive and enjoyable learning activities. Sherianto (2020) explained that Wordwall provides various educational games that can increase students' motivation and participation. Therefore, learning mathematics becomes more interesting and less monotonous (M Tuah Lubis, 2022).

The findings of this study are supported by Meneses (2020), who found that the Team Accelerated Instruction model improves learning outcomes. In addition, Julianti and Efendi (2023) reported that TAI positively contributes to students' mathematical abilities. Thus, the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media can be used as an alternative strategy to improve students' mathematics learning interest

CONCLUSION

Based on the results of the study, it can be concluded that the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media had a significant effect on students' mathematics learning interest at grade VII of SMP Negeri 2 Tambangan. Therefore, the Team Accelerated Instruction (TAI) learning model assisted by Wordwall media can be used as an alternative learning strategy to improve students' mathematics learning interest.

REFERENCES

- Arikunto, S. (2019). *Prosedur Penelitian: Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.
- Asnawir, & Usman, B. (2002). *Media Pembelajaran*. Jakarta: Ciputat Pers.
- Djamarah, S. B. (2018). *Psikologi Belajar*. Jakarta: Rineka Cipta.
- Ghozali, I. (2021). *Aplikasi Analisis Multivariate dengan Program IBM SPSS*. Semarang: Badan Penerbit Universitas Diponegoro.
- Huda, M. (2017). *Cooperative Learning: Metode, Teknik, Struktur, dan Model Terapan*. Yogyakarta: Pustaka Pelajar.
- Julianti, D., & Efendi, A. R. (2023). Improving Student Mathematics Learning Outcomes in Algebraic Factorization Material Using the Method Team Accelerated Instruction. *Daengku: Journal of Humanities and Social Sciences Innovation*, 3(5), 865–873.
- Khairunisa. (2021). Pemanfaatan Media Wordwall dalam Pembelajaran. *Jurnal Pendidikan*, 5(2), 45–52.
- Lubis, A. N. M. T., & Widada Wahyu. (2020). Kemampuan Problem Solving Siswa melalui Model Pembelajaran Matematika Realistik Berorientasi Etnomatematika Bengkulu. In *JPMR* (Vol. 05, Number 01). <https://ejournal.unib.ac.id/index.php/jpmr>
- Lubis, A. N. M. T., Widada, W., Herawaty, D., Nugroho, K. U. Z., & Anggoro, A. F. D. (2021). The ability to solve mathematical problems through realistic mathematics learning based on ethnomathematics. *Journal of Physics: Conference Series*, 1731(1). <https://doi.org/10.1088/1742-6596/1731/1/012050>
- M Tuah Lubis, A. N. (2022). PENGARUH MODEL PEMBELAJARAN MATEMATIKA REALISTIK BERORIENTASI ETNOMATEMATIKA BENGKULU TERHADAP KEMAMPUAN PEMBUKTIAN PRINSIP-PRINSIP MATEMATIKA. *Jurnal MATH-UMB.EDU*, 9(2), 69–75.
- M Tuah Lubis, A. N., & Siregar, S. (2024). Students' Thinking Characteristics in Concepts Understanding on Basic Statistics Courses That Reviewed From The Extended Level Triad ++. *Jurnal Ilmu-Ilmu Pendidikan Dan Sains*, 12, 103–112. <https://doi.org/https://doi.org/10.24952/logaritma.v12i01.11646>
- Meneses, F. D. C. (2020). Penerapan Model Pembelajaran Kooperatif Tipe Team Accelerated Instruction untuk Meningkatkan Hasil Belajar Bahasa

- Indonesia. Indonesian Journal of Educational Development, 1(2), 201–202.
- Purnami, N., et al. (2018). The Effect of Team Accelerated Instruction on Students' Learning Outcomes. *Journal of Mathematics Education*, 7(1), 15–22.
- Sherianto. (2020). Pemanfaatan Aplikasi Wordwall sebagai Media Pembelajaran Interaktif. Padang: Universitas Negeri Padang.
- Slameto. (2015). Belajar dan Faktor-Faktor yang Mempengaruhinya. Jakarta: Rineka Cipta.
- Slavin, R. E. (2015). Cooperative Learning: Theory, Research and Practice. Boston: Allyn and Bacon.
- Sugiyono. (2022). Metode Penelitian Kuantitatif, Kualitatif, dan R&D. Bandung: Alfabeta.
- Susanto, A. (2016). Teori Belajar dan Pembelajaran di Sekolah Dasar. Jakarta: Prenadamedia Group.
- Uno, H. B. (2021). Teori Motivasi dan Pengukurannya. Jakarta: Bumi Aksara.
- Widada, W., & Herawaty, D. (2017). Dekomposisi Genetik tentang Hambatan Mahasiswa dalam Menerapkan Sifat-sifat Turunan. *Jurnal Didaktik Matematika*, 4(2), 136–151.
- Widada, W., & Herawaty, D. (2018). The Effects of the Extended Triad Model and Cognitive Style on the Abilities of Mathematical Representation and Proving of Theorem. *Advances in Social Science, Education and Humanities Research*, 89–95.