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THE EFFECT OF THE TEAM GAMES TOURNAMENT LEARNING MODEL ASSISTED BY *ENGKLEK* GAMES ON THE LEARNING OUTCOMES OF ELEMENTARY STUDENT OF CULTURAL HERITAGE MATERIALS

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Abstract

The low understanding of the fifth graders of cultural heritage materials is caused by the low interest, motivation, and literacy of students, which has an impact on learning outcomes. Therefore, the purpose of this study is to determine the influence of the Team Games Tournament learning model assisted by "*Engklek Games*" on the learning outcomes of the fifth graders on cultural heritage materials. This study uses a quasi-experimental research type and a Nonequivalent Control Group Design. The research population amounted to 59 students in the fifth grade including 32 students of SDN Langgenharjo 01 as an experimental class and 27 students of SDN Bakaran Kulon 03 as a control class. Total sampling was used for sampling in this study. Data collection techniques include learning outcome tests and student activity observation sheets, while data analysis uses normality tests, homogeneity tests, t-tests, and n-gain tests. The results of the study showed (sig. 0.000 < 0.05) that the application of the Team Games Tournament learning model assisted by "*Engklek Games*" had a significant effect on learning outcomes in cultural heritage materials. The average n-gain of the experimental class was 0.7392 > 0.5909 of the control class, which showed that the improvement of learning outcomes was more optimal in the experimental class. In addition, student learning activities are in the very active category. Based on the analysis carried out, the Team Games Tournament learning model assisted by "*Engklek Games*" has proven to be effective in improving student learning outcomes.

Keywords: Cultural Heritage, Engklek Games, Learning Outcomes, Team Games Tournament Learning Model

Abstrak. Rendahnya pemahaman siswa kelas V terhadap materi warisan budaya disebabkan oleh rendahnya minat, motivasi, dan literasi siswa, yang berdampak pada hasil belajar. Oleh karena itu, tujuan penelitian ini untuk mengetahui pengaruh model pembelajaran *Team Games Tournament* berbantuan permainan engklek terhadap hasil belajar siswa kelas V pada materi warisan budaya. Penelitian ini menggunakan jenis penelitian *quasi-experimental* dan desain *nonequivalent control group design*. Populasi penelitian berjumlah 59 siswa kelas V diantaranya 32 siswa SDN Langgenharjo 01 sebagai kelas eksperimen dan 27 siswa SDN Bakaran Kulon 03 sebagai kelas kontrol. *Total sampling* digunakan untuk pengambilan sampel dalam penelitian ini. Teknik pengumpulan data meliputi tes hasil belajar dan lembar observasi aktivitas siswa, sedangkan analisis data menggunakan uji normalitas, uji homogenitas, uji *t*, dan uji *n-gain*. Hasil penelitian menunjukkan (sig. $0,000 < 0,05$) bahwa penerapan model pembelajaran *Team Games Tournament* berbantuan permainan engklek berpengaruh signifikan terhadap hasil belajar pada materi warisan budaya. Rata-rata *n-gain* kelas eksperimen $0,7392 > 0,5909$ kelas kontrol, yang menunjukkan peningkatan hasil belajar lebih optimal pada kelas eksperimen. Selain itu, aktivitas belajar siswa berada pada kategori sangat aktif. Berdasarkan analisis yang dilakukan, model pembelajaran *Team Games Tournament* berbantuan permainan engklek terbukti efektif dalam peningkatan hasil belajar siswa.

Kata Kunci: Warisan Budaya, Permainan Engklek, Hasil Belajar, Model Pembelajaran *Team Games Tournament*

Background

One of the important components that determines the progress of a country is education (Najmi et al., 2021). As stated in UU Number. 20 Year 2003 discusses the National Education System, education aims to develop the potential of students to become individuals who have faith, noble character, healthy, knowledgeable, capable, creative, and independent. The rapid development of information technology allows the widespread and adoption of culture, which has the potential to shift local cultural heritage and have an impact on reducing students' learning experiences related to that culture. Efforts to build values and character are very important in the era of globalisation and current technological advances to align technological advances with human growth (Faiz & Kurniawaty, 2022). The Merdeka Curriculum prioritises meaningful learning, character values, and love for culture in addition to academic achievements. Cultural Heritage is a subject in Natural and Social Sciences (IPAS) in primary school with the aim of teaching children to know and preserve the nation's culture. However, learning these topics is often too conventional and does not actively engage students, resulting in poor learning outcomes.

This situation has implications for students' low mastery of cultural heritage materials, which ultimately affects low learning outcomes. Based on preliminary observations conducted at SD Negeri Langgenharjo 01 and SD Negeri Bakaran Kulon 03, it was found that students' interest and motivation to learn are still low, students' understanding of the concept of cultural heritage, including the distinction between tangible and intangible cultural heritage, is still limited, and students' low literacy skills also detain material comprehension so that it has an impact on students' learning outcomes. If this problem will not be solved

immediately, cultural heritage learning has a potential to lose meaning and fail to meet the planned learning objectives.

Therefore, learning innovations are required that are able to overcome those problems by conducting a more interesting, interactive, and contextual classroom atmosphere. The cooperative learning model emphasizes collaboration between students through academic game activities. With this learning model, students are not only encouraged to be active and motivated, but also have a fun and meaningful learning experience.

The Team Games Tournament (TGT) learning model is a competition game in which students compete in turns to get points (Nuriana, 2020). The TGT learning model makes students enthusiastic about learning because they can interact and exchange ideas to solve problems (Alawiyah et al., 2023). Ethics and tolerance between students and teachers increase because students learn to respect the opinions of their peers (Hasan & Aziz, 2023). This research uses the “Engklek Game”, a traditional game that has cultural value as a learning support. The game involves aspects of knowledge, physical activity, and social, so that students can gain many benefits, such as increasing focus on learning in tournaments, improving motoric activity, and improving communication and cooperation between players (Yuisman et al., 2021). Therefore, the use of traditional games not only provides entertainment, but also includes regional history and strong local wisdom values (Sundari & Siregar, 2023).

Previous research has shown that the Team Games Tournament learning model assisted by “Engklek Games” is effective in improving student learning outcomes. Research conducted by (Maulana et al., 2023) Previous research has shown that the Team Games Tournament learning model assisted by “Engklek Games” is effective in improving student learning outcomes. Research conducted by (Armidi, 2022) entitled *The Application of the Teams Games Tournament Type Cooperative Learning Model to Improve Social Studies Learning Outcomes for the Sixth-Graders Primary School Students* shows that social studies learning outcomes of the sixth-graders primary school students have increased significantly by applying the TGT-type cooperative learning model. Research conducted by (Wulandari et al., 2022) entitled *The Influence of the Teams Games Tournament (TGT) Cooperative Learning Model on Social Studies Learning Interest of the fourth-graders of SD Negeri 125138 Pematangsiantar* showed that the TGT learning model increased social studies learning interest. Research conducted by (Lestari et al., 2024) entitled *The Influence of the TGT Model Assisted by Image Pull Media in Improving the Sosial Science Achievement of the Fifth-Graders of SD Negeri Tawangmas 01* shows that the TGT model assisted by image drawing media can improve students' cognitive learning outcomes of the fifth-graders of natural and social science studies material effectively. Research conducted by (Nisa et al.,

2024) entitled *The Influence of the TGT (Teams Games Tournament) Learning Model Reviewed from the Critical Thinking Ability in Natural and Social Science Learning at SDS Cendana Duri* shows that the use of the TGT learning model has an effect on students' critical thinking skills in the 4th of Natural and Social Science learning at SDS Cendana Duri in the 2023/2024 Academic Year.

Previous research generally still focuses on specific subjects, so further research is still required that specifically examines the influence of the Team Games Tournament learning model assisted by "Engklek Games" on cultural heritage materials in primary school of the fifth-graders of natural and social science subjects. Based on this description, the formulation of the problem in this study is how does the learning model of Team Games Tournament assisted by "Engklek Games" affect the learning outcomes of the fifth-graders on cultural heritage materials at SD Negeri Langgenharjo 01?.

This study aims to determine the influence of the Team Games Tournament learning model assisted by "Engklek Games" on the learning outcomes of the fifth-graders on cultural heritage materials at SD Negeri Langgenharjo 01. Learning outcomes are the main aspect that needs to be considered during the learning process, especially in deepening students' knowledge of the subject matter. As the final result of the learning process, learning outcomes describe what students have understood and mastered (Hamna & Windar, 2022). This research is intended as an innovative learning solution while contributing to improving the quality of meaningful and local culture-based natural and social science learning.

Method

This study uses a quasi-experimental quantitative research type. This study applies a nonequivalent control group design consisting of two groups, namely the experimental and control classes. According to (Sugiyono, 2019) the experimental research method is a quantitative method that is carried out through experiments. This method is used to determine the extent of the influence of the free variable (treatment) on the bound variable (outcome) with implementation in a controlled situation.

Treatment in the form of the application of the TGT learning model assisted by "Engklek Games" was given to the experimental class, while conventional learning (teacher-centred learning) was given to the control class. This design was chosen because the researcher could compare the learning outcomes between the experimental class and the selected control based on almost the same characteristics.

The subjects of the study are all of the fifth-graders of SD Negeri Langgenharjo 01 and SD Negeri Bakaran Kulon 03, Juwana Subdistrict, Pati Regency, Central Java, in the 2025/2026 academic year. The number of research subjects was 59 students, consisting of

32 students as experimental class and 27 students as control class. This study uses a sampling technique in the form of total sampling. Total sampling is the sampling in a study that comes from all members of the population (Amin et al., 2023).

The research instruments consist of test and non-test instruments. The measurement of student learning outcomes in the cognitive domain is carried out using test instruments in the form of multiple-choice questions given in the form of pre-test and post-test. Non-test data collection was carried out using instruments in the form of observation sheets used to observe the implementation of the Team Games Tournament learning model assisted by “Engklek Games” and student learning activities during the learning process. The test instrument is arranged in the form of 20 multiple-choice questions with four answer choices for each question item. The question indicators are compiled by referring to the theory of learning outcomes according to Bloom, in (Angelia, 2024) which includes aspects of knowledge, understanding, application, analysis, synthesis, and evaluation. The grid of test instruments indicator is presented as follows.

Table 1. Test Instrument Indicator

Aspects	Indicator
Knowledge	1. Students are able to define cultural heritage. 2. Students are able to mention examples of cultural heritage in their area. 3. Students are able to recall the characteristics of cultural heritage.
Understanding	1. Students' understanding is able to re-explain the meaning of cultural heritage. 2. Students are able to classify cultural heritage based on its type, regional origin, and why.
Implementation	Students are able to implement ways to preserve cultural heritage in school activities.
Analysis	The student analysis is able to outline examples of cultural heritage recognised by UNESCO.
Synthesis	Students are able to plan new ideas to introduce cultural heritage in schools.
Evaluation	1. Students are able to assess the importance of preserving cultural heritage based on its benefits. 2. Students are able to argue why cultural heritage needs to be preserved.

The test instrument has gone through validity, reliability, difficulty index, and discrimination power tests using SPSS version 27, while the observation instrument was validated using expert judgment.

Data collection is carried out through several stages. The first stage was pre-tested on both sample groups to obtain data on students' initial ability standards. Then, the treatment of the Team Games Tournament learning model was assisted by the “Engklek Game” in the experimental class, while the conventional learning treatment (teacher-centred learning) was in the control class. After the treatment is completed, both classes are given a

post-test to find out the final learning outcomes of students. In addition, observation of learning activities and documentation is carried out as data to support the research.

Data analysis was tested with descriptive and inferential statistics with the help of SPSS version 27. Descriptive analysis is used to describe the average grade, minimum grade, and maximum student learning outcomes. Before the hypothesis test, the prerequisite test used, namely the normality test was carried out with the Shapiro–Wilk test and the homogeneity test was carried out with the Levene's Test. The hypothesis test was carried out through an independent samples t-test to analyse the learning outcomes between the experimental class and the control class. In addition, the N-gain test is used to determine the student's learning outcomes score after the treatment is given. The data from the observation of learning activities were analysed by calculating the percentage of student activity during learning activities.

Result and Discussion

Result

The test instrument is declared valid if it meets several criteria, namely content validity, construct validity, empirical validity, and prediction validity (Arikunto, 2018). The test instruments are analysed through validity, reliability, difficulty index, and discrimination power tests. The implementation of the analysis of this test instrument aims to obtain qualified question items so that the instrument is suitable for use as a data collection tool in research. Questions that have met the criteria of validity, reliability, difficulty index, and discrimination power are determined as test instruments for the implementation of the pre-test and post-test.

The preliminary data (pre-test) and final data (post-test) of students in the experimental and control classes are presented as follows.

Table 2. Experimental and Control Class Pre-test Data

Class	Number of Students	Min Score	Max Score	Mean
Experimental	32	30	85	59,06
Control	27	30	75	53,88

Source: Data Processing Results in 2026

Table 3. Experimental and Control Class Post-test Data

Class	Number of Students	Min Score	Max Score	Mean
Experimental	32	75	100	88,75
Control	27	60	100	80,37

Source: Data Processing Results in 2026

The normality test aims to test whether the data used in the study comes from a normal distribution (Sintia et al., 2022). The normality test of the pre-test data used the Shapiro Wilk

test with the help of SPSS version 27. The Shapiro–Wilk test is used as a normality testing method, especially effective for small samples, namely less than 50 data (Sianturi, 2025). The normality test obtained the following results.

Table 4. Results of the Preliminary Data Normality Test

		Shapiro-Wilk		
Class		Statistic	df	Sig.
Pre-test	Control	0.957	27	0.323
	Experimental	0.950	32	0.140

Source: Data Processing Results in 2026

The results of the normality test of the pre-test data with a significance level of 0.05, obtained a significance value in the experimental class of Sig. = 0.140 > 0.05 and in the control class of Sig. = 0.323 > 0.05. The significance value in both classes was greater than 0.05 (Sig. > 0.05). Therefore, the testing criteria of the two data is H_0 accepted, which means that the data of the two classes meet the assumption that the sample of this study is sourced from a normally distributed population.

Table 5. Final Data Normality Test Results

		Shapiro-Wilk		
Class		Statistic	df	Sig.
Post-test	Control	0.949	27	0.199
	Experimental	0.937	32	0.062

Source: Data Processing Results in 2026

The results of the normality test of the post-test data with a significance level of 0.05 were obtained with a significance value in the experimental class of Sig. = 0.062 > 0.05 and in the control class of Sig. = 0.199 > 0.05. The significance value in both classes was greater than 0.05 (Sig. > 0.05). Thus the testing criteria of the two data is H_0 accepted, which means that the data of the two classes meets the assumption that this research sample is sourced from a normally distributed population.

The homogeneity test was carried out to test whether there was a similarity in variance between the research data groups (Nurhaswinda et al., 2025). The homogeneity test uses Levene's test with SPSS version 27, the following results were obtained.

Table 6. The Preliminary Data of Homogeneity Test

		Levene Statistic	df1	df2	Sig.
Pre-test	Based on Mean	2.477	1	57	0.121
	Based on Median	2.441	1	57	0.124
	Based on Median and with adjusted df	2.441	1	56.722	0.124
	Based on trimmed mean	2.481	1	57	0.121

Source: Data Processing Results in 2026

The results of the pre-test data of homogeneity test were carried out by the Levene Test with a significance level of 0.05, in the Sig column of the Based on Mean row, a sig value was obtained. by $0.121 > 0.05$. Thus H_0 is accepted, so that both classes come from homogeneously distributed populations.

Table 7. The Final Data of Homogeneity Test

		Levene Statistic	df1	df2	Sig.
Post-test	Based on Mean	3.418	1	57	0.070
	Based on Median	3.440	1	57	0.069
	Based on Median and with adjusted df	3.440	1	49.361	0.070
	Based on trimmed mean	3.437	1	57	0.069

Source: Data Processing Results in 2026

The results of the post-test data of homogeneity test were carried out by the Levene Test with a significance level of 0.05, in the Sig. column of the Based on Mean row, a sig value was obtained. by $0.070 > 0.05$. Thus H_0 is accepted, so that both classes come from homogeneously distributed populations.

The average similarity test of the preliminary data was carried out using the Independent Sample T-test through the help of SPSS version 27 and the following results were obtained.

Table 8. Results of the Similarity Test of Two Preliminary Data Averages

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2- tailed)
Pre-test	Equal variances assumed	2.477	0.121	-1.499	57	0.139
	Equal variances not assumed			-1.527	56.909	0.132

Source: Data Processing Results in 2026

The results of the preliminary data average of similarity test were carried out with the Independent Sample T-Test with a significance level of 0.05, in the Sig. column (2 tailed) of the Equal variances assumed row, a sig value was obtained. by $0.139 > 0.05$. Therefore H_0 is accepted, so that the two classes obtain an average similarity.

The t-test is used as a parametric statistical technique to test the mean differences between groups, especially in studies with small sample counts and unknown population variances (Fitri et al., 2023). In this study, the hypothesis test was carried out with a t-test (Independent Samples t-test).

The independent samples t-test was used to determine the average comparison of two groups of unpaired samples. Independent sample t-tests are included to inferential statistics which are to test differences or comparisons between groups (Pradana et al., 2022). The t-test (Independent Samples t-test) using the help of SPSS version 27, the following results were obtained.

Table 9. Hypothesis Testing Results

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Post-test	Equal variances assumed	3.418	0.070	-3.694	57	0.000
	Equal variances not assumed			-3.575	44.150	0.001

Source: Data Processing Results in 2026

The results of the hypothesis test were carried out with the t-test (Independent Samples t-test) with a significance level of 0.05, in the Sig. column (2 tailed) of the Equal variances assumed row a sig value was obtained. by $0.000 < 0.05$. Therefore, H_0 was rejected and H_a was accepted, meaning that the application of the Team Games Tournament learning model assisted by "Engklek Games" has a significant influence.

The N-Gain test is used to determine the difference between post-test and pre-test scores, so the N-Gain test is used to measure the improvement of student understanding after the learning process. Data on the increase in the pre-test and post-test values of cultural heritage materials in the experimental class and the control class can be presented in the form of a line diagram as follows.

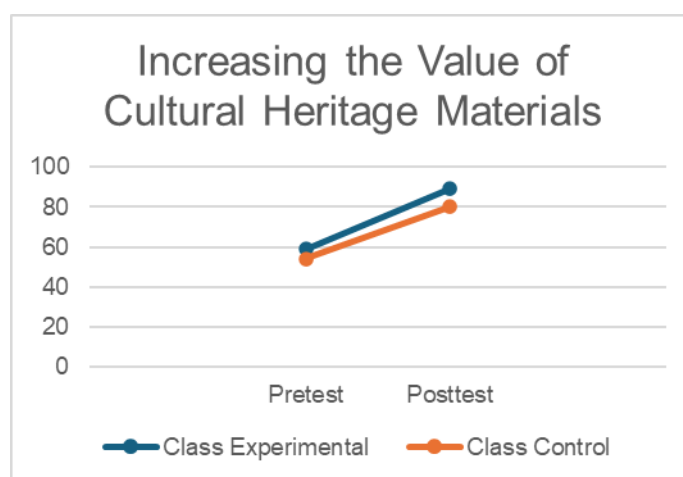


Diagram 1. Increasing the Value of Cultural Heritage Materials

The N-Gain test was carried out with the help of SPSS version 27, the following results were obtained.

Table 10. N-Gain Test Results

Class	Average			
	Pre-test	Post-test	N-Gain	Criteria
Experimental	59,06	88,75	0,7392	High
Control	53,88	80,37	0,5909	Medium

Source: Data Processing Results in 2026

Based on the calculation results, the average N-Gain of $0.7392 > 0.7$ of the experimental class was obtained higher than the average N-Gain of $0.5909 < 0.7$ of the control class. These results show that the change in students' ability between pre-test and post-test scores in the experimental class showed higher scores than in the control class. Therefore, it can be concluded that students in the experimental class experienced a more significant increase in learning outcomes of cultural heritage materials after being given treatment than students in the control class.

**Picture 1.** Experimental Class Learning**Picture 2.** Control Class Learning

Based on the results of student learning activities, the Team Games Tournament learning model assisted by “Engklek Games” showed a percentage of 96.25% in the very active category. The percentage of the implementation of learning activities shows that the percentage of 98.75% is in the very active category. It can be concluded that the learning process carried out is very active.

Discussion

The results of this study prove that the Team Games Tournament model assisted by “Engklek Games” has a significant influence over conventional learning (teacher-centred learning) in improving students' learning outcomes. Statistical evidence through hypothesis tests obtained a significance value of $0.000 < 0.05$, meaning that H_0 was rejected and H_a was accepted. In addition, the average N-Gain value of the experimental class of 0.7392 (high category) was greater than the average N-Gain of the control class of 0.5909 (medium category). These findings show that the improvement in students' ability between pre-test and post-test scores in the experimental class was greater than in the control class.

The findings of this study support the results of previous research which stated that the Team Games Tournament learning model is effective in improving learning outcomes because it emphasizes teamwork, social interaction, and motivation to learn through games. In accordance with the learning steps of TGT (Team Games Tournament) model Rusman, in (Dewi et al., 2021) among others: 1) conveying goals and motivating students, 2) conveying information, 3) organising students into small groups, 4) guiding work and study groups, 5) tournaments, and 6) giving awards. This model has the potential to encourage students to master more materials, such as concepts and facts being taught, by encouraging them to think critically and collaboratively in teams to answer quiz questions (Herawati, 2022). In TGT-type learning, questions can be written on cards with numbers. Each student in the group will get a card with a number and must answer the questions written on the card (Silaban et al., 2024). The TGT-type cooperative learning model combines classroom discussions and games along with group learning (Setiawan et al., 2021). In addition, using the “Engklek Game”, a traditional game that has cultural value, is used as a learning support. Traditional “Engklek Games” can help children learn many things, such as building balance, motoric skills, creativity, and social skills with friends and others (Sari & Raihana, 2021). “Engklek Games” have the potential to increase children's motivation and enthusiasm, improve gross motoric skills, and a more interesting variety of learning media (Pratiwi, 2021). One of the important components of a society's cultural heritage is traditional games. Traditional games that reflect the cultural values, beliefs, and identity of a community (Munir et al., 2023). Compared to conventional learning (teacher-centred learning), the Team Games Tournament learning model facilitates students to be more active in participating, discussing, and learning through hands-on experience.

Theoretically, the results of this study strengthen the cooperative learning theory that emphasizes the importance of social interaction and collaborative activities in improving students' learning outcomes. The TGT-type cooperative learning model combines classroom discussions and games along with group learning (Setiawan et al., 2021). Students participate in sporty competitions to strengthen their understanding which makes the TGT learning model very enjoyable (Rani, 2022). The use of “Engklek Games” as a learning media also supports a contextual and local culture-based learning approach. In addition, traditional games are perfect for teaching children's characters (Nurwahidah et al., 2021). Practically, the findings of this study can be an alternative for primary school teachers in selecting innovative and fun learning models. The application of the Team Games Tournament model assisted by “Engklek Games” can help teachers increase student motivation, participation, and learning outcomes, while preserving traditional games in learning activities.

Based on the data and interpretation obtained, it is proven that the Team Games Tournament model assisted by the “Engklek Game” has a positive impact on the learning outcomes of the fifth-graders in cultural heritage materials. This study has limitations only to measure learning outcomes in the cognitive domain, not including the affective and psychomotor domains. Based on these limitations, further research is suggested to examine the influence of the Team Games Tournament learning model assisted by “Engklek Games” on the affective and psychomotor domains.

Conclusion

The application of the Team Games Tournament learning model assisted by “Engklek Games” has a positive effect on the learning outcomes of the fifth-graders of cultural heritage materials. Statistical evidence through hypothesis tests obtained a significance value of $0.000 < 0.05$, meaning that H_0 was rejected and H_a was accepted. In addition, the average N-Gain value of 0.7392 of the experimental class (high category) was greater compared to the average N-Gain of 0.5909 of the control class (medium category). This study provides evidence that the Team Games Tournament learning model assisted by “Engklek Games” can improve learning outcomes compared to conventional learning, and is able to increase active participation and students’ involvement during the learning process.

This research plays a role in the development of learning strategies in primary schools through the application of a cooperative model that utilises traditional games based on local culture. The Team Games Tournament learning model assisted by “Engklek Games” can be an alternative to an innovative learning model by encouraging student activity and cooperation. The next research is suggested to be able to examine the effect of the Team Games Tournament learning model assisted by “Engklek Games” on the affective and psychomotor domains in order to gain a more comprehensive understanding of the effectiveness of the learning model.

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