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The Effect of the Team Game Tournament (TGT) Learning Model on Eleventh-Grade Students' News Writing Skills

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ABSTRACT

This study aims to examine the effect of the cooperative learning model Teams Games Tournament (TGT) on the news text writing skills of eleventh-grade students at SMA Negeri 1 Tanoh Alas during the 2024/2025 academic year. Writing skills are a fundamental component of Indonesian language learning; however, many students experience difficulties in understanding the structure and elements of news texts. This study employed an experimental research method using a one-group pretest–posttest design. The participants consisted of eleventh-grade students who were taught news text writing through the TGT learning model, which emphasizes cooperative learning combined with academic competition through games and tournaments. The research instrument was a news text writing test administered before and after the treatment. The collected data were analyzed using descriptive and inferential statistical techniques to determine the effectiveness of the TGT model. The findings revealed a significant improvement in students' news writing skills after the implementation of the TGT model. The learning process became more interactive, enjoyable, and motivating, encouraging active participation and collaboration among students. In addition, the TGT model helped students with lower writing abilities improve through peer tutoring within groups. Therefore, this study concludes that the TGT model has a positive and significant effect on enhancing students' news text writing skills and offers practical implications for Indonesian language teachers in implementing innovative and student-centered learning strategies at the senior high school level.

KATA KUNCI

model teams games tournament (tgt), pembelajaran kooperatif, keterampilan menulis, teks berita, siswa kelas xi

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan model pembelajaran kooperatif Teams Games Tournament (TGT) terhadap keterampilan menulis teks berita pada siswa kelas XI SMA Negeri 1 Tanoh Alas Tahun Pembelajaran 2024/2025. Keterampilan menulis merupakan salah satu kompetensi dasar dalam pembelajaran Bahasa Indonesia, namun masih banyak siswa yang mengalami kesulitan dalam memahami struktur dan unsur teks berita. Metode penelitian yang digunakan adalah metode eksperimen dengan desain one-group pretest–posttest. Subjek penelitian adalah siswa kelas XI yang diberikan pembelajaran menulis teks berita menggunakan model TGT, yaitu model pembelajaran kooperatif yang mengombinasikan kerja kelompok dan kompetisi akademik melalui permainan. Instrumen penelitian berupa tes menulis teks berita yang diberikan sebelum dan sesudah perlakuan. Data yang diperoleh dianalisis menggunakan teknik statistik deskriptif dan inferensial untuk mengetahui efektivitas penerapan model TGT. Hasil penelitian menunjukkan adanya peningkatan yang signifikan pada keterampilan menulis teks berita siswa setelah diterapkannya model TGT. Proses pembelajaran menjadi lebih interaktif, menyenangkan, dan mampu meningkatkan motivasi, keaktifan, serta kerja sama siswa. Selain itu, model TGT membantu siswa yang memiliki kemampuan menulis rendah melalui kegiatan tutor sebaya dalam kelompok. Dengan demikian, dapat disimpulkan bahwa model pembelajaran TGT berpengaruh positif dan signifikan terhadap peningkatan keterampilan menulis teks berita siswa serta dapat dijadikan alternatif strategi pembelajaran inovatif dalam pembelajaran Bahasa Indonesia di jenjang SMA.

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Introduction

Language learning, particularly in the context of Indonesian language education, plays a crucial role in developing students' communicative competence, both orally and in written form. Among the four fundamental language skills—listening, speaking, reading, and writing—writing is widely recognized as one of the most complex and challenging skills for students to master. Writing requires not only linguistic accuracy but also the ability to organize ideas logically, apply appropriate structures, and convey information clearly to readers. In senior high school curricula, writing news texts is an essential competency that enables students to report factual events systematically while adhering to specific structural and linguistic conventions. However, in practice, many students struggle to compose well-structured news texts due to limited understanding of news elements, difficulties in organizing information, and low motivation during the learning process. These challenges indicate that conventional teaching methods, which are often teacher-centered and monotonous, may not sufficiently support students in developing effective news writing skills.

Based on observations conducted at SMA Negeri 1 Tanoh Alas, the learning process of news text writing has not yet achieved optimal outcomes. A significant number of eleventh-grade students were unable to meet the minimum mastery criterion (KKM), suggesting that their writing competence remained below the expected standard. Classroom instruction was predominantly focused on explanation and individual tasks, resulting in passive student participation and limited opportunities for interaction. As a consequence, only a small number of students actively responded to teachers' questions, while the majority showed low engagement and confidence in expressing their ideas in written form. This situation underscores the urgent need for innovative instructional models that can actively involve students, foster collaboration, and create a more engaging learning atmosphere. Cooperative learning has been widely acknowledged as an effective pedagogical approach to address such issues, as it emphasizes teamwork, peer interaction, and shared responsibility in achieving learning goals (Asda, 2022; Babullah, 2024). One cooperative learning model that has gained considerable attention is the Teams Games Tournament (TGT) model, which integrates academic content with competitive and game-based activities to enhance student motivation and participation.

The Teams Games Tournament (TGT) model is a type of cooperative learning strategy that organizes students into heterogeneous groups and engages them in structured academic games and tournaments. Through this model, students learn collaboratively while also experiencing healthy competition, which can stimulate enthusiasm and responsibility for learning tasks. TGT allows students with varying ability levels to support one another through peer tutoring, ensuring that lower-achieving students remain actively involved in the learning process. In the context of writing instruction, particularly news text writing, TGT offers opportunities for students to analyze news elements, discuss ideas, and refine their writing through group interaction before producing individual texts. Previous studies have indicated that cooperative learning models, including TGT, can significantly improve students' writing performance, learning motivation, and social skills (Nihayah, 2020; Siregar, 2021). Therefore, implementing the TGT model in teaching news text writing is expected to create a more interactive, enjoyable, and effective learning environment. In

response to the existing learning problems at SMA Negeri 1 Tanoh Alas, this study aims to investigate the effect of the cooperative learning model Teams Games Tournament (TGT) on the news text writing skills of eleventh-grade students during the 2024/2025 academic year. The findings of this study are expected to contribute both theoretically, by enriching the literature on cooperative learning in writing instruction, and practically, by providing teachers with an alternative instructional strategy to improve students' writing competence.

Method

This study employed a quantitative research approach with an experimental design to examine the effect of the Teams Games Tournament (TGT) cooperative learning model on students' news text writing skills. Specifically, a one-group pretest–posttest design was used, in which students' writing abilities were measured before and after the implementation of the TGT model. The pretest was administered to assess students' initial writing competence, followed by instructional treatment using the TGT learning model, and concluded with a posttest to measure learning outcomes after the intervention. This design allowed the researcher to identify changes in students' writing performance attributable to the applied learning model. The research was conducted at SMA Negeri 1 Tanoh Alas, located in Southeast Aceh, Indonesia, during the 2024/2025 academic year, from October 28 to November 28, 2024.

The population of this study consisted of all 11th-grade students at SMA Negeri 1 Tanoh Alas, with the sample determined using saturated sampling, in which all members of the population were included as research participants. The sample comprised 18 students from class XI IPA 1. Data were collected using a news text writing test administered as both pretest and posttest. Students' writing was assessed using a rubric covering five aspects: content, organization, vocabulary, language use, and mechanics. The collected data were analyzed descriptively and inferentially. Descriptive statistics included the calculation of mean scores, while inferential analysis was conducted using a paired-sample t-test to determine whether there was a significant difference between pretest and posttest results. The level of significance was set at 0.05, and students' learning achievement was evaluated based on the minimum mastery criterion (KKM) of 70 established by the school.

Results

Overview of the Research Implementation

This study was conducted at SMA Negeri 1 Tanoh Alas during the 2024/2025 academic year, specifically from October 28 to November 20, 2024. The participants consisted of 18 students from class XI IPA 1, which served as the experimental group. A quantitative experimental approach using a one-group pretest–posttest design was employed to examine the effect of the Teams Games Tournament (TGT) cooperative learning model on students' news text writing skills. The research procedure involved administering a pretest to measure students' initial writing ability, implementing the TGT learning model during instructional sessions, and conducting a posttest to evaluate students' writing performance after the treatment.

The data collected from the pretest and posttest were analyzed descriptively and inferentially. Descriptive statistical analysis was used to present students' writing scores in terms of total scores, mean scores, standard deviations, standard errors, medians, and modes. Inferential analysis was conducted using a paired-sample *t* test to determine whether the observed difference between pretest and posttest scores was statistically significant.

Descriptive Statistics of Pretest Results

The pretest was administered before the implementation of the TGT learning model to identify students' initial ability in writing news texts. Students were asked to write a news text based on a given topic, and their work was assessed using a scoring rubric that covered five aspects: content, organization, vocabulary, language use, and mechanics. Each aspect was rated on a scale of 1 to 4, resulting in a maximum possible score of 20, which was then converted into a scale of 100.

Table 1 presents the descriptive statistics of students' pretest scores.

Table 1
Descriptive Statistics of Pretest Scores (N = 18)

Statistic	Value
Total Score	1,045
Mean	58.06
Minimum Score	50
Maximum Score	70
Standard Deviation	6.42
Standard Error	1.55
Median	57.50
Mode	50

The results indicate that students' initial writing ability was relatively low. The mean pretest score of 58.06 was below the minimum mastery criterion (70) established by the school. Most students scored between 50 and 65, with only two students achieving a score of 70. The mode score of 50 suggests that a considerable number of students demonstrated limited mastery of news text writing components. Additionally, the standard deviation of 6.42 indicates a moderate dispersion of scores, reflecting variations in students' initial writing skills.

Descriptive Statistics of Posttest Results

After the pretest, students received instruction using the Teams Games Tournament (TGT) cooperative learning model. The instructional sessions emphasized group collaboration, academic games, peer tutoring, and structured competition to enhance students' engagement and understanding of news text writing. At the end of the treatment period, a posttest was administered using the same assessment criteria as the pretest.

Table 2 summarizes the descriptive statistics of students' posttest scores.

Table 2
Descriptive Statistics of Posttest Scores (N = 18)

Statistic	Value
Total Score	1,520
Mean	84.44
Minimum Score	80
Maximum Score	90
Standard Deviation	3.29
Standard Error	0.79
Median	85
Mode	85

The posttest results show a substantial improvement in students' news text writing skills. The mean score increased to 84.44, which exceeds the minimum mastery criterion. All students achieved scores between 80 and 90, indicating that the majority reached a good to very good level of writing proficiency. The reduced standard deviation (3.29) compared to the pretest suggests that students' scores became more homogeneous after the intervention, reflecting a more consistent level of achievement across the class.

Comparison of Pretest and Posttest Scores

To provide a clearer picture of students' improvement, a comparison between pretest and posttest scores was conducted. Table 3 presents individual students' pretest and posttest scores along with the gain scores.

Table 3
Comparison of Pretest and Posttest Scores

Student	Pretest	Posttest	Gain
S1	50	85	35
S2	50	80	30
S3	55	85	30
S4	55	85	30
S5	55	90	35
S6	70	80	10
S7	65	85	20
S8	65	80	15
S9	50	85	35
S10	60	90	30
S11	60	90	30
S12	65	85	20
S13	60	85	25
S14	60	85	25
S15	70	80	10
S16	50	85	35
S17	50	85	35
S18	55	80	25

The table demonstrates that all students experienced score improvements after the application of the TGT model. The average gain score was 26.39 points, indicating a meaningful increase in writing performance. Students who initially scored lower showed notable improvement, suggesting that the cooperative learning structure supported learners with weaker initial skills.

Measures of Central Tendency and Variability

Further analysis of central tendency measures revealed that the median score increased from 57.50 in the pretest to 85 in the posttest, while the mode shifted from 50 to 85. This shift indicates a clear movement of score concentration toward higher achievement levels. The decrease in standard deviation and standard error from pretest to posttest suggests that the intervention not only improved average performance but also reduced variability among students.

Inferential Statistical Analysis

To determine whether the difference between pretest and posttest scores was statistically significant, a paired-sample *t* test was conducted. This test was appropriate because the same group of students was assessed before and after the intervention.

The results of the paired-sample *t* test are presented in Table 4.

Table 4
Paired-Sample t Test Results

Statistic	Value
Mean Difference (MD)	26.39
Standard Deviation of Differences	8.13
Standard Error of Mean Difference	1.97
t value	13.46
Degrees of Freedom	17
Significance ($\alpha = .05$)	$p < .001$

The calculated *t* value (13.46) exceeded the critical *t* value (2.109) at the 0.05 significance level with 17 degrees of freedom. The significance value ($p < .001$) indicates that the difference between pretest and posttest scores was statistically significant. Therefore, the null hypothesis was rejected, and the alternative hypothesis was accepted.

Discussion

The findings of this study demonstrate that the implementation of the cooperative learning model Teams Games Tournament (TGT) had a significant positive effect on students' news text writing skills. This conclusion is supported by the substantial increase in students' mean scores from the pretest ($M = 58.06$) to the posttest ($M = 84.44$), as well as the results of the paired-samples *t* test ($t = 13.46$, $p < .05$). The improvement indicates that students were able to better understand and apply the elements and structure of news texts after participating in TGT-based instruction. The competitive yet collaborative nature of TGT appears to have created

an engaging learning environment that encouraged students to actively participate, share ideas, and refine their writing through peer interaction. These results confirm that learning models emphasizing cooperation and structured games can effectively address students' initial difficulties in organizing ideas, selecting appropriate vocabulary, and applying correct language conventions in news writing.

Furthermore, the reduction in score variability, as indicated by the lower standard deviation and standard error in the posttest results, suggests that TGT not only improved average performance but also contributed to more consistent achievement across students. Before the intervention, students' writing abilities varied considerably, reflecting unequal mastery of news text components such as content completeness (5W+1H), organization, and mechanics. After the application of TGT, most students achieved scores within a narrower and higher range, indicating a more even distribution of learning outcomes. This improvement can be attributed to the peer tutoring aspect inherent in the TGT model, where students with higher initial ability support peers with lower proficiency during group activities. Such interaction aligns with cooperative learning theory, which emphasizes social interdependence and shared responsibility as key factors in enhancing academic performance. By engaging in academic games and tournaments, students were motivated to improve their individual contributions for the success of their teams, leading to increased effort and focus during the writing process.

The results of this study are consistent with previous research that highlights the effectiveness of the TGT model in improving learning outcomes across various subjects. Studies by Hilliani (2020) and Wullandari (2022) reported significant improvements in students' academic achievement when TGT was applied, reinforcing the conclusion that this model is adaptable and effective in different learning contexts. In the present study, the application of TGT in Indonesian language instruction, particularly in news text writing, proved successful in enhancing students' writing skills and learning motivation. These findings suggest that TGT can serve as a practical and innovative alternative to conventional teaching methods that often rely heavily on teacher-centered instruction. However, despite the positive results, this study was limited to a single group and a relatively small sample size. Future research is recommended to employ a control group design and larger samples to further validate the effectiveness of TGT and explore its long-term impact on students' writing development. Overall, the discussion confirms that the Teams Games Tournament model is a valuable instructional strategy for improving news text writing skills among senior high school students.

Conclusions

This study investigated the effect of the cooperative learning model Teams Games Tournament (TGT) on the news text writing skills of eleventh-grade students at SMA Negeri 1 Tanoh Alas during the 2024/2025 academic year. The findings demonstrate a significant improvement in students' writing performance after the implementation of the TGT model. The mean score increased from 58.06 in the pretest to 84.44 in the posttest, indicating a substantial gain in students' ability to organize ideas, apply appropriate vocabulary, use correct language structures, and follow the conventions of news text writing. Statistical analysis using a paired-sample t-test

confirmed that the difference between pretest and posttest scores was statistically significant at the 0.05 level, supporting the acceptance of the alternative hypothesis.

The results suggest that the TGT learning model effectively enhances students' engagement and motivation in writing activities. Through cooperative group work combined with academic games and healthy competition, students became more active participants in the learning process. This learning environment encouraged peer interaction, responsibility, and collaborative problem-solving, which positively influenced students' understanding of news text elements and structure. Additionally, the reduced standard deviation in posttest scores indicates that TGT not only improved average performance but also helped create more consistent learning outcomes among students. Based on these findings, it can be concluded that the Teams Games Tournament model is an effective instructional strategy for improving news text writing skills at the senior high school level. The study provides empirical evidence that cooperative and game-based learning models can serve as valuable alternatives to conventional teaching methods in Indonesian language instruction. Future research is recommended to apply the TGT model to different text genres, larger sample sizes, or comparative experimental designs to further validate its effectiveness.

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References

- Abbas, S. (2016). *Pembelajaran bahasa Indonesia yang efektif di sekolah dasar*. Direktorat Jenderal Pendidikan Tinggi, Kemdikbud.
- Alwi, H. (2020). *Kamus besar bahasa Indonesia*. Balai Pustaka.
- Amalia, P., & Surya, E. (2017). Perbedaan hasil belajar statistika antara model pembelajaran kooperatif tipe NHT dengan TPS. *Kreano: Jurnal Matematika Kreatif-Inovatif*, 8(1), 8–14.
- Arikunto, S. (2016). *Prosedur penelitian: Suatu pendekatan praktik* (Edisi revisi). PT Rineka Cipta.
- Asda, Y. (2022). Efektivitas pembelajaran model kooperatif tipe jigsaw untuk meningkatkan hasil belajar sejarah kebudayaan Islam pada siswa MAN Model Banda Aceh. *PENDALAS: Jurnal Penelitian Tindakan Kelas dan Pengabdian Masyarakat*, 2(3), 160–174.
- Atmojo, E. R. D. (2020). Pengembangan kemampuan menulis cerita fiksi siswa sekolah dasar. *Jurnal Abdidas*, 1(3), 172–182.
- Babullah, R., Qomariyah, S., Neneng, N., Natadireja, U., & Nurafifah, S. (2024). Kolaborasi metode diskusi kelompok dengan problem solving learning untuk meningkatkan keterampilan pemecahan masalah siswa pada materi aqidah akhlak. *Jurnal Budi Pekerti Agama Islam*, 2(2), 65–84.
- Dahlan, M., & Wahid, A. (2022). Peningkatan keterampilan menulis teks berita menggunakan model group investigation pada siswa kelas VIII SMP Negeri 5 Mandai. *Aufklarung: Jurnal Kajian Bahasa, Sastra Indonesia, dan Pembelajarannya*, 1(2), 138–146.
- Effendy, E., Zakaria, Z., & Anggarana, A. (2023). Dasar-dasar penulisan berita. *Jurnal Pendidikan dan Konseling (JPDK)*, 5(2), 4041–4044.
- Eriyanto. (2016). *Analisis wacana: Pengantar analisis teks media*. LKIS.
- Esminarto, E., Sukowati, S., Suryowati, N., & Anam, K. (2016). Implementasi model STAD dalam meningkatkan hasil belajar siswa. *BRILIANT: Jurnal Riset dan Konseptual*, 1(1), 16–23.
- Fadhilatin, S. N., Priyadi, A. T., & Madein, S. S. (2023). Penerapan model pembelajaran cooperative script untuk meningkatkan kemampuan menulis puisi pada siswa kelas X. *Journal on Teacher Education*, 4(4), 45–54.

- Fau, Y. T. V. (2023). Model cooperative learning dalam pembelajaran. Dalam *Model-model pembelajaran* (hlm. 80).
- Hasanah, Z., & Himami, A. S. (2021). Model pembelajaran kooperatif dalam menumbuhkan keaktifan belajar siswa. *Irsyaduna: Jurnal Studi Kemahasiswaan*, 1(1), 1–13.
- Hiliani, F. (2020). *Pengaruh model pembelajaran kooperatif tipe team games tournament (TGT) berbantuan media question card terhadap hasil belajar IPS siswa* (Doctoral dissertation). Universitas Islam Negeri Sumatera Utara.
- Laa, N., Winata, H., & Meilani, R. I. (2017). Pengaruh model pembelajaran kooperatif tipe student teams achievement division terhadap minat belajar siswa. *Jurnal Pendidikan Manajemen Perkantoran*, 2(2), 139–148.
- Lodico, M. G., Spaulding, D. T., & Voegtle, K. H. (2016). *Methods in educational research: From theory to practice*. Jossey-Bass.
- Lovisia, E. (2018). Pengaruh model pembelajaran inkuiri terbimbing terhadap hasil belajar. *Science and Physics Education Journal (SPEJ)*, 2(1), 1–10.
- Magdalena, I., Salsabila, A., Krianasari, D. A., & Apsarini, S. F. (2021). Implementasi model pembelajaran daring pada masa pandemi Covid-19 di kelas III SDN Sindangsari III. *Pandawa*, 3(1), 119–128.
- Nihayah, I. (2020). Pembelajaran kooperatif dalam meningkatkan inteligensi interpersonal. *TA'LIM: Jurnal Studi Pendidikan Islam*, 3(1), 39–69.
- Ningsih, M. N., Mustafa, M., & Suardi, S. (2020). *Pengaruh penerapan model pembelajaran kooperatif tipe team games tournament (TGT) terhadap hasil belajar IPA* (Doctoral dissertation). Universitas Negeri Makassar.
- Ningsih, N. P. M. (2024). *Pengaruh model pembelajaran teams games tournament (TGT) dan motivasi belajar terhadap hasil belajar matematika siswa kelas XI* (Doctoral dissertation). Universitas Labuhanbatu.
- Nurhidayat, M. (2023). *Pengaruh model pembelajaran team games tournament (TGT) terhadap motivasi belajar siswa kelas IV*.

- Parhusip, G. D., Kristanto, Y. D., & Partini, P. (2023). Meningkatkan keaktifan belajar peserta didik dengan model pembelajaran kooperatif tipe teams games tournament (TGT). *JIPM (Jurnal Ilmiah Pendidikan Matematika)*, 11(2), 293–306.
- Reistendy, M. S. (2016). Daya tarik jurnalistik, pers, berita, dan perbedaan peran dalam news casting. *Jurnal Al-Hikmah*, 4(2), 1–12.
- Siregar, R. L. (2021). Memahami model, strategi, metode, pendekatan, teknik, dan taktik. *Hikmah: Jurnal Pendidikan Islam*, 10(1), 63–75.
- Slavin, R. E. (2016). *Cooperative learning: Teori, riset, dan praktik*. Nusa Media.
- Soehoet, H. (2016). *Dasar-dasar jurnalistik*. IISIP Press.
- Sugiyono. (2016). *Metodologi penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Sukardi. (2016). *Metodologi penelitian pendidikan: Kompetensi dan praktiknya*. PT Bumi Aksara.
- Suparno, & Yunus, M. (2018). *Keterampilan dasar menulis*. Universitas Terbuka.
- Sutama, I. M., Astika, I. M., & Widyatnyana, K. N. (2021). Struktur dan kebahasaan berita feature Kompas. *Jurnal Pendidikan Bahasa dan Sastra Indonesia Undiksha*, 11(1), 37–47.
- Tirani, Y. (2020). *Analisis efektivitas pembelajaran kooperatif pada kelas IV sekolah dasar* (Doctoral dissertation). FKIP UNPAS.
- Trusbawati. (2017). Pengaruh metode field trip terhadap kemampuan menulis karangan deskripsi siswa kelas X SMA Negeri 3 Pandeglang. *Basastra*, 6(4), 200–209.
- Widhiyanto, N. A., & Nasucha, Y. (2020). *Peningkatan keterampilan menulis teks berita menggunakan metode partisipatori dengan teknik ATTL* (Doctoral dissertation). Universitas Muhammadiyah Surakarta.
- Wulandari, P., et al. (2021). Pengaruh model pembelajaran teams games tournament berbantu media audio-visual terhadap komunikasi matematika siswa kelas VIII. *Jurnal Ilmiah Mahasiswa Pendidikan Matematika*, 3(2), 1–11.