Influence of the TGT Cooperative Learning Model on Students' Social Science Academic Performance

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Abstract

This research was conducted to determine the influence of the Teams Games Tournament (TGT) learning model on the learning outcomes of seventh-grade students in the subject of Social Science. This study used a quantitative approach with a quasi-experimental design method, involving both a control group (lecture-based teaching model) and an experimental group (TGT cooperative learning model). The research yielded results indicating that there was no significant influence of the conventional learning model on learning outcomes, as evidenced by the asymptotic significance (2-tailed) value of 0.053 which means that is higher than 0.05. Furthermore, the study demonstrated a significant influence of the TGT learning model with an asymptotic significance (2-tailed) value of 0.000 which is lower than 0.05. The research findings indicate that the TGT model has a significantly greater impact on students' social science learning outcomes compared to the conventional learning model, with an effect size of 0.368, which falls into the medium category.

Keywords: Teams Games Tournament, students' learning outcomes, Social Science

Introduction

As an educator in the present day, the creativity of an educator is crucial to support the success of the learning process. Effective learning is facilitated by active participation from both the teacher and students. Therefore, it is essential to employ teaching models that can enhance the engagement and involvement of students in the learning process. To achieve effective learning, educators must be precise in developing the teaching model they use (Abidin, 2017). The right teaching model can significantly contribute to the learning process, especially by igniting students' enthusiasm for learning, which in turn encourages them to actively participate in classroom activities. This active involvement is a key factor in educational success (Savitri, Sallamah, Permatasari, & Prihantini, 2022). It is often observed that educators continue to employ conventional teaching models continuously. This can lead to students finding the learning experience

uninteresting and tedious, causing them to pay less attention to the lessons. Consequently, students may struggle to grasp the content that has been presented (Monawati & Fauzi, 2018; Veloo & Chairhany, 2013).

According to cognitive development theory by Piaget (as cited in Mauliya, 2019), students at the Junior High School (SMP) level are in the early adolescent phase, typically ranging from 13 to 15 years old. During this period, a teenager enjoys playing and is attracted to challenging activities. Therefore, a suitable instructional model for this context is the Teams Games Tournament (TGT) model.

TGT is a cooperative learning approach in which students are divided into small teams (Kamaruddin & Yusoff, 2019). Each team will play a game designed to test their understanding and application of the material they have learned. In these games, each team member has specific roles and responsibilities. Teams will compete against each other to achieve the highest score (Wyk, 2011). In other words, this instructional model emphasizes the learning process involving cooperation, communication, and positive competition among students, which can help them interact with each other and actively engage in their learning (Nasruddin, 2019). Therefore, this learning model may enhance student motivation, social interaction, and active engagement in the learning process (Luo et al., 2020).

There are several studies that suggest TGT has a positive impact on the learning process. The first relevant study was conducted by Aryani (2015), who utilized the TGT model supported by 4-1 cards as a teaching method for 9th-grade students at SMPN 1 Kandeman Batang in the subject of Social Studies. Aryani's (2015) research employed the classroom action research method with two cycles during the research process, and in each cycle, there was an improvement in learning outcomes. Specifically, the average score increased from 68.75% in the first cycle to 85% in the second cycle.

The next researchers who employed the Teams Games Tournament (TGT) method were Widayanti and Slameto (2016). They conducted an experimental study, specifically using a pre-experimental design known as the "one group pre-test - post-test design". Their research revealed an improvement in the learning outcomes of 3rd-grade students at SDN Lemahireng 02 Semarang in the subject of natural science. The average post-test score was 72.1 out of 100, compared to the initial average pre-test score of 57 out of 100. The difference between the post-test and pre-test scores was statistically significant, with a p-value of less than 0.05. Therefore, it can be concluded that the TGT instructional model can enhance student learning outcomes.

According to Dewi, Arifin, & Fua, (2016), there are several advantages of the TGT cooperative learning model, namely: (1) honing students' ability to socialize with others, (2) increasing student participation in completing tasks, (3) providing an understanding of differences between individuals, (4) enhancing student activity, (5) helping to motivate students, (6) improving students' learning outcomes, and (7) fostering concern, sensitivity, and tolerance towards students. Therefore, it can be inferred that the TGT cooperative learning approach is advantageous for students as it fosters empathy, care, and tolerance. Additionally, TGT facilitates students in forming connections with peers, promoting their active participation. This active involvement can contribute to a better grasp of the learning materials and, subsequently, lead to improved learning outcomes (Samrin, Rijal, & Syamsuddin, 2021).

This aligns with Bandura's social cognitive learning theory, as referenced in Schunk (2012), which posits that people acquire knowledge by interacting and forming social connections with others. This enables them to observe others, comprehend the learning objectives, and ultimately attain their educational goals.

Considering the benefit of the TGT learning model to improve students' learning outcomes, these researchers intended to do an experiment at one of secondary schools where the educators solely employed a conventional teaching method, which primarily involved lectures in the learning process. Lectures teaching model may result in a dull learning atmosphere which hindered students from concentrating on the explanations provided by the educators. If students get bored with the class atmosphere, they may engage in other activities, such as playing, talking with friends, or even falling asleep during the learning sessions (Li & Wang, 2022). Therefore, this study aimed to investigate the impact of TGT on students' learning achievement, particularly in social science learning outcome. There are three research questions in this study:

(1) Do students' social science learning outcomes differ significantly between the pre-test and post-test in the lecture teaching model?
(2) Do students' social science learning outcomes differ significantly between the pre-test and post-test in the TGT cooperative learning model?
(3) Do students' social science learning outcomes differ significantly between the lecture-based teaching model and the TGT cooperative learning model?

Method

This research adopted a quantitative approach and employed an experimental method, investigating the impact of the implementation of TGT cooperative learning model through experiments in the classrooms. The type of experiment used in this research was quasi-experimental design, as the researchers utilized two groups: a control group and an experimental group (Sugiyono, 2019). The control group utilized the traditional lecture-based teaching model, whereas the experimental group implemented the TGT instructional approach. The location of this research took take place at SMPN 3 Sungai Raya in Pontianak. Based on the preliminary research results, the researcher found that the TGT cooperative learning model has not been previously utilized in the 7th-grade classroom.

This research employed purposive sampling, a technique used to select the sample based on specific reasons and considerations (Sugiyono, 2019). The selected samples for this study were from two classes: class A and class B in which there were 36 students for each class. These two classes were chosen due to their similar average cognitive abilities, indicated by their previous exam scores in social science. In this study, VII B will serve as the control group that got lecture teaching model as the treatment, while VII E will be the experimental group treated with TGT cooperative learning model.

The data collection tool used in this research consists of 20 items of multiple-choice quizzes related to learning materials of social science subject for grade 7 with the topic of "norms and values". Data in this study were analyzed using SPSS version 25. The results of the validity test revealed that the calculated Pearson correlation coefficient between test items varied, with values ranging from -0.666 to 0.824 between the test items of pre-test and from -0.603 to 0.72 between the test items of post-test were found to be significantly higher ($p < 0.05$) than the critical value (r table = 0.355) at a 0.05 significance level,

indicating strong positive correlation between the test items. To sum up, the pretest and post-test questions employed in this research were found to be valid.

Meanwhile, in terms of reliability, the Cronbach's alpha coefficient for the pre-test questionnaire was 0.691 indicating a high level of internal consistency. Similarly, the post-test questionnaire yielded a Cronbach's alpha of 0.782, further confirming the high internal consistency of both instruments.

After conducting interventions in both classes, the researcher analyzed the distribution normality of both pre-test and post-test data using the Shapiro-Wilk test formula because the sample size did not exceed 100 (Sari, Sukestiyarno, & Agoestanto, 2017). The results showed that the data followed a normal distribution, as presented in Table 1. Therefore, the researchers employed the parametric *Paired Sample T-Test* to address research questions 1 and 2, and the parametric *Independent Sample T-Test* to address research question number 3.

Table 1. Normality test result

Test	Statistic	Df	Sig.
Pre-test of control group	0.962	36	0.245
Post-test of control group	0.957	36	0.168
Pre-test of experimental group	0.966	36	0.321
Post-test of experimental group	0.954	36	0.138

Results and Discussions

Concerning research question number one, the researchers discovered evidence that students' social science learning results did not differ significantly between the pre-test (*Mean*=36.81) and post-test (*Mean*=39.72) in the lecture teaching approach ($t(36)=-2.004$, $p=0.053$). This suggests that conventional teaching models, particularly lecture-based instructional models, are not effective in improving students' learning outcomes.

Meanwhile, in response to research question number 2, the researchers discovered evidence that students' social science learning outcomes differ significantly between pre-test (*Mean*=32.22) and post-test (*Mean*=80.97) in the TGT cooperative learning model ($t(36) = -25.743$, p 0.05), as shown in table 2. This suggests that TGT cooperative learning model is effective to develop students' social science learning outcomes.

Table 2. Paired sample T-test results

Group	Pre-test Mean	Post-test Mean	SD	Paired Sample T-Test Result
Control Group	36.81	39.72	8.732	$t(36)=-2.004$, $p=0.053$
Experimental Group	32.22	80.97	11.36	$t(36)=-25.743$, $p <0.05$

In relation to research question number 3, the researchers found evidence that students' social science learning outcomes differ significantly ($p<0.05$, $F=0.157$) between the lecture-based teaching model (*Mean*=39.72, *SD*= 11.707) and the TGT cooperative learning model (*Mean*=80.97, *SD*=10.678) as shown in table 3 below.

Table 3. Independent test results

Group	Mean	SD	Std. Errror Mean	F	*p*-value
Control Group	39.72	11.707	1.951	0.157	0.000
Experimental Group	80.97	10.678	1.780		

Next, to determine the significance of the difference in learning outcomes, the calculation of Cohen's effect was performed. Based on the calculation of Cohen's effect size, a significant value of 0.036 was obtained for the TGT instructional model, which falls into the medium category. Therefore, it can be concluded that the TGT instructional model in the experimental group has a greater influence than the use of the conventional teaching model in the control group in the subject of social study with the topic of *values* and *norms* in 7th-grade class of secondary school.

The findings from this study, which highlight the ineffectiveness of the lecture-based teaching model, align with prior

research findings presented by Monawati & Fauzi, 2018 and Veloo & Chairhany, 2013. These researchers asserted that a lecture-based instructional approach tends to lack learner engagement, as it primarily revolves around the teacher's guidance, making students passive participants who merely listen to the teacher's explanations. Consequently, this passive role leads to uninteresting lessons and a lack of motivation among students to actively participate and comprehend the subject matter. This notion is further supported by Savitri et al. (2022) who emphasize that active student involvement is a pivotal factor that encourages them to be more engaged in their learning process and, in turn, enhances their grasp of the subject matter.

In contrast to traditional lecture-based teaching methods, this study confirms that the TGT cooperative learning model has a positive impact on students' performance in the field of social science. This conclusion is consistent with earlier research conducted by Aryani (2015), Dewi et al. (2016) and Samrin, Rijal, & Syamsuddin, (2021). These studies argue that the TGT cooperative learning approach encompasses a diverse range of educational activities, including competition, active engagement with the material, collaborative learning, and active participation. These diverse learning activities can lead to more dynamic teaching and learning processes. Furthermore, the interaction between teachers and students, as well as among students themselves, during TGT cooperative learning, can enhance students' motivation for learning and, ultimately, improve their comprehension of the subject matter (Nasruddin, 2019).

This finding is in line with the social cognitive theory developed by Bandura as cited in Johnson, Johnson, & Smith (2014) in which Bandura declared that individuals learn through social interaction. He further explained in detail that cooperative learning environments consist of several learning process, such as observation and reciprocal determinism.

Regarding observation, Bandura, as referenced in Schunk (2012), emphasized that within the context of cooperative learning, students engage in the process of observing and learning from their fellow students. Through modeling, specifically in the TGT cooperative learning model, they have the opportunity to acquire skills, strategies, and behaviors by closely examining the actions and outcomes of their peers. In terms of reciprocal determinism, TGT cooperative learning establishes a cooperative setting wherein students can actively interact with their peers, both within their immediate groups and beyond. This interaction is characterized by the reciprocal influence of personal factors, student behaviors, and the cooperative and competitive learning environment inherent to the TGT learning approach.

Conclusion and recommendations

This study aimed to assess the influence of TGT cooperative learning on students' academic performance in the context of social science education. The researchers conducted a comparative analysis between the traditional lecture-based teaching approach and the TGT cooperative learning model. The findings revealed that the TGT cooperative learning model led to a statistically significant improvement in students' learning outcomes in social science education, whereas the lecture-based teaching model had no significant impact on students' learning. These results suggest that students benefit from a more engaging

classroom experience with active peer collaboration.

The authors propose that educators should prioritize creating a joyful classroom atmosphere to enhance students' comfort during the learning process. When students enjoy their learning environment, they are more likely to grasp the study materials effectively. It is important to note that this study did not incorporate interviews to gather students' perspectives on TGT cooperative learning or their feedback regarding this approach. Consequently, the researchers recommend that future investigations include qualitative research to gain a deeper understanding of students' viewpoints and experiences with TGT cooperative learning.

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