Jurnal Konseling dan Pendidikan
Volume 13, Number 1 2025

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Publication details, including author guidelines
URL: https://jurnal.konselingindonesia.com/index.php/jkp/about/submissions#authorGuidelines
Editor: Yusida Imran

Article History
Received: 27 Jan 2025
Revised: 17 Apr 2025
Accepted: 21 Apr 2025

How to cite this article (APA)
Nora, D., Anggraeni, A., Rohza, A., Padli, P., Muliati, I., Frinaldi, A., & Zarya, Z. (2025). Enhancing students' critical thinking skills through a team games tournament model. Jurnal Konseling dan Pendidikan. 13(1), 455-463. https://doi.org/10.29210/1138500

The readers can link to article via https://doi.org/10.29210/1138500

Jurnal Konseling dan Pendidikan
ISSN 2337-6740 (Print) | ISSN 2337-6880 (Electronic)

ISSN 2733-6740 (Print)
ISSN 2733-6880 (Electronic)

Jurnal Konseling dan Pendidikan

Volume 13 Number 1 (2025)
https://doi.org/10.29210/1138500

Article

Enhancing students' critical thinking skills through a team games tournament model

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ABSTRACT

This study aims to enhance the critical thinking skills of grade XI IPS 3 students at SMA Adabiah 2 Padang in sociology lessons through the implementation of the Teams Games Tournament (TGT) model. Using the Classroom Action Research (CAR) method by Kemmis and McTaggart, the research was conducted in three cycles involving 28 students. Data were collected through observation, interviews, and documentation, and analyzed using qualitative techniques for interviews and quantitative analysis for observation results. Findings indicated a consistent improvement in students critical thinking skills across cycles: 39.2% in Cycle I, 57.6% in Cycle II, and 79.1% in Cycle III. The study concludes that the TGT model effectively increases student engagement and critical thinking by integrating interactive elements and a supportive learning environment.

Keywords:

Metacognition
Gamification
Synergy
Scaffolding

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Introduction

Critical thinking is an ability that must be possessed by every individual, because critical thinking has become an inseparable part in all areas of human life (Firdausi et al., 2021; Ma'rifah & Mawardi, 2022; Yulianti et al., 2022). This is considering that the ability to think critically is able to provide a foundation in determining actions and giving birth to ideas for problems faced by individuals (Faiziyah & Priyambodho, 2022).

Basically, critical thinking is an effort to assess every information obtained to solve the problem faced (Umam, 2018; Winarti et al., 2022). In learning, efforts to get students used to thinking critically are goals that must be achieved as a form of experience for students, through giving assignments and presenting discussions carried out by students. According to Sunyoto et al., (2022) It is stated that critical thinking is rational thinking in assessing something. Before making a decision and taking an action, it is necessary to collect various information about something that you want to seek the truth of. Next, Sianturi et al., (2018) explains that critical thinking is a state of analyzing and/or evaluating information and an investigation that is carried out to explore a situation or problem to formulate a hypothesis that is possible to be believed to be true. So, one way to see students' ability to think critically is to observe students' efforts in solving problems or tasks given through the management of the information they obtain so as to find understanding or ideas to solve them (Liska et al., 2021; Saputri, 2020).

From the results of research conducted by (Gunawan et al., (2024); McCormick & Thaddeus, (2024); Rohman et al., (2024); Schafer & McDonald, (2024) about the consensus of experts regarding the disposition or character of individuals who are effective in critical reasoning, namely: (1) curiosity: (2) purity of information in opinion; (3) openness in differences, and; (4) willing to make self-change. The character of curiosity becomes the initial character of an individual who tends to think critically by actively motivating himself in every problem or task given. As disclosed Rudiyanto, (2019) that curiosity is a natural urge from within human beings to engage in searching and investigating about something they learn. For this reason, the activity of students' curiosity can be shown by their involvement in solving problems. The form of activity from the purity of information in opinion is an effort by students to find information by asking questions and utilizing relevant information media so as to support the birth of an idea or idea of the problem faced (Alonso-Centeno et al., 2024; Aryani et al., 2024; Güncan & Çelik, 2024; Youyou & Kit, 2024). Likewise, openness in differences can be realized by discussion activities in learning so that there is an expansion of information and strengthening of ideas. Furthermore, the willingness to make self-change is an assessment of one's ability to acquire knowledge and its application in overcoming problems (Shankar et al., 2024). Thus, it can be concluded that the indicators of students' critical reasoning ability can be seen from: 1) involvement in solving problems; 2) asking friends about problems; 3) seeking information from various sources; 4) engage in discussions to develop ideas; 5) assess the ability of the knowledge acquired, and: 6) apply the knowledge to solve each problem.

One of the factors for teachers' success in learning is the selection of the right learning model, therefore it is important to understand the use of learning models that can provide a conducive atmosphere for improving students' critical thinking skills. One of the learning models that can increase learning activity is the teams games tournament (TGT) model. The TGT model is one of the forms of cooperative learning, where students are active in groups competing to win games. In addition, the TGT model allows students to be able to improve their critical thinking skills. According to Saputra et al., (2020) said that the application of the Teams Games Tournament model provides hope that the activeness of students can also improve students' thinking skills. Furthermore, according to fadjrin, (2017) argue that students' activeness in the learning process can stimulate and develop their talents, students can also practice critical thinking, and can solve problems in daily life.

The TGT model has five learning steps, namely class presentation, teams, games, competitions/tournaments, and team recognition (Thalita et al., 2019). In its application, the TGT model will be assisted by the media to provide attraction to students so that they participate in learning. One form of media that helps in the application of the TGT model is kahoot. Kahoot is a game-assisted platform that is interactive, fun, and able to increase students' motivation and participation in learning, which provides space to improve students' critical thinking skills. Because, by integrating the kahoot-assisted TGT model, students can work in teams, collaborate, and compete healthily to achieve learning goals. The application of the kahoot-assisted TGT model can be one of the solutions and innovations for teachers by making the learning process more interesting and fun so that it can improve critical thinking skills in learning. This research is expected to provide better insight into the effectiveness of the use of technology in learning and how the game-assisted approach can be used to improve students' critical thinking skills.

This research aims to improve the critical thinking skills of students in class XI IPS 3 SMA Adabiah 2 Padang in sociology subjects using the kahoot-assisted TGT model. For this reason, the researcher conducted an in-depth study entitled "Improving Students' Critical Thinking Skills Using the Teams Games Tournament (TGT) Learning Model".

Methods

This study uses the participant-type Classroom Action Research (PTK) method. Participant class action research is a research in which the researcher is directly involved in the research starting from the beginning to the preparation of research results in the form of reports. In the participant class

action research, the researcher is directly involved in the process of planning, observing, recording, collecting, and analyzing data to making a report on the research results (Mu'alimin & Hari, 2014). The research design used in this research is Classroom Action Research (PTK) according to Kemmis and Mc. Taggart. The Classroom Action Research Model according to Kemmis and Mc. Taggart consists of four stages, namely planning, action, observation, and reflection (Farhana & Awiria, 2019).

This research was carried out in class XI IPS 3 Adabiah 2 Padang High School in the odd semester (July-December) 2023 with 28 research subjects. In carrying out the research, the researcher collaborated with Sociology teachers. The data collection techniques in this study are observation, interviews, and documentation. This research was conducted using qualitative and quantitative data analysis techniques. The qualitative data analysis technique carried out is Miles and Huberman qualitative data analysis (Agusta, 2003) which consists of data reduction, data presentation, and conclusion drawing which is used to analyze the results of interviews conducted by researchers. Meanwhile, the quantitative data analysis technique uses an observation sheet that uses a formula to determine the percentage of students' learning activity in analyzing the observation results at the time of the research. Indicators of success in research can be seen from the improvement of students' critical thinking skills in each cycle, if the achievement of the critical thinking ability criteria is in the category of 75%-100%, then critical thinking skills can be said to be successful.

Results And Discussion

Cycle 1

Cycle I was held twice on September 4 and 18, 2023. The activities in the first cycle consist of four stages, namely planning, action, observation, and reflection. At the planning stage, the researcher prepares the things needed during the research such as the Learning Implementation Plan (RPP), Student Worksheets (LKPD), and media such as kahoot. In the action and observation stage, the researcher plays the role of an actor who applies the TGT model. The material studied in cycle I is the definition, characteristics, and factors that cause social problems. After a brief presentation of the material, the teacher prepares the LKPD to be done in groups by the students. After working on the LKPD, each group was directed to do kahoot games and competitions by the teacher. The group that won the championship was given praise by the teacher.

Based on the results of observations made by researchers and observers in cycle I, the results of the critical thinking ability of grade XI IPS 3 students measured through the observation sheet are shown in the following table:

Table 1. Observation Results of Cycle I

No	Critical Thinking Indicators	Percentage (%)
1	Involvement in solving problems	39,2
2	Ask a friend about a problem	32,1
3	Searching for information from various sources	48,1
4	Engage in discussions to develop ideas	49,9
5	Assess the ability of the knowledge gained	35,6
6	Apply knowledge to solve every problem.	30,3
	Average	39,2

Source: Nora, 2023

From the table above, it was found that there was an average of 39.2%. This shows that there is an increase in students' critical thinking skills in cycle I compared to the initial or pre-action conditions. The comparison between the initial or pre-action condition and cycle I can be seen in the following table 2.

Based on table 2, it was concluded that the critical thinking ability of grade XI IPS 3 students in the first cycle increased compared to the initial condition or pre-action with a difference of 18.5%. In the reflection stage, researchers and teachers found problems that caused weak student participation,

namely: 1) Students are still adapting to using kahoot; 2) Lack of cooperation in the group in completing tasks; 3) Motivation of students to actively express their opinions; 4) Students easily feel saturated, and; 5) The level of student attendance is low when the first cycle is carried out.

Table 2. Comparison of Students' Critical Thinking Skills In Pre-Action and Cycle I

No.	Critical Thinking Indicators	Pre-Action (%)	Cycle 1 (%)	Percentage Increase (%)
1	Involvement in solving problems	17,8	39,2	21,4
2	Ask a friend about a problem	25	32,1	7,1
3	Searching for information from various sources	21,4	48,1	26,7
4	Engage in discussions to develop ideas	14,2	49,9	35,7
5	Assess the ability of the knowledge gained	28,5	35,6	7,1
6	Apply knowledge to solve every problem.	17,8	30,3	12,5
	Average	20,7	39,2	18,5

Source: Nora, 2023

In this case, the researcher and the teacher of class XI sociology discussed in finding solutions to the problems contained in the first cycle. 2) Conducting ice breaking in the middle of the learning process; and, 3) Give rewards such as prizes to the group that gets a high score.

Cycle II

Cycle II was held in two meetings, namely on September 18 and 25, 2023. The stages of activities are the same as cycle I, with the material learned in cycle II, namely the types of social problems. After a brief presentation of the material, the teacher prepares the LKPD to be done in groups by the students. After working on the LKPD, each group was directed to do kahoot games and competitions by the teacher. The group that won the championship was rewarded by the teacher. Based on the results of observations made by researchers and observers in cycle II, the results of the critical thinking ability of students in grade XI IPS 3 were measured through the observation sheet shown in the following table.

Table 3. Observation Results of Cycle II

No	Critical Thinking Indicators	Percentage (%)
1	Involvement in solving problems	58,8%
2	Ask a friend about a problem	57,1%
3	Searching for information from various sources	64,2%
4	Engage in discussions to develop ideas	58,9%
5	Assess the ability of the knowledge gained	51,7%
6	Apply knowledge to solve every problem.	55,3%
	Average	57,6%

Source: Nora, 2023

The table of students' critical thinking skills in cycle II showed an average of 57.6%. From the table, it can be concluded that there is an increase in students' critical thinking skills in cycle II compared to the initial or pre-action conditions and cycle I. Comparison between cycle I and cycle II can be seen in the table 4.

Based on table 4, it was concluded that the level of critical thinking ability of grade XI IPS 3 students in cycle II increased compared to cycle I with a difference of 18.4%. In the reflection stage of cycle II, the researcher conducted interviews with several students who were still under-participating during sociology learning. The results of the interview concluded that there were several factors that affected the students, namely lack of focus, laziness, and an unconducive atmosphere.

Table 4. Comparison of Students' Critical Thinking Skills In Cycle I and Cycle II

No	Critical Thinking Indicators	Cycle I	Cycle II	Percentage Increase
1	Involvement in solving problems	39,2%	58,8%	19,6%
2	Ask a friend about a problem	32,1%	57,1%	25%
3	Searching for information from various sources	48,1%	64,2%	16,1%
4	Engage in discussions to develop ideas	49,9%	58,9%	9%
5	Assess the ability of the knowledge gained	35,6%	51,7%	16,1%
6	Apply knowledge to solve every problem	30,3%	55,3%	25%
	Average	**39,2%**	**57,6%**	**18,4%**

Source: Nora, 2023

In this case, researchers and teachers of class XI sociology subjects discussed in finding solutions to problems found in cycle II. From the discussion, the following solutions were found: 1) Give additional points to students who are active in expressing opinions when the teacher explains the material. 2) Giving additional points to students who are active in the group. 3) Adding variety to learning media such as using animations on power points and kahoot. 4) Conducive to the atmosphere both in the classroom and outside the classroom so that students can focus on the learning process. 5) Doing ice breaking in the middle of the learning process. 6) Giving rewards to groups that get 1st, 2nd, and 3rd place.

Cycle III

Cycle III was held twice on September 26 and October 2, 2023. Similar to the stages of activities in cycles I and II, activities in cycle III also consist of four stages, namely planning, action, observation, and reflection. The material learned in cycle III is the impact and efforts to solve social problems. Based on the results of observations made by researchers and observers in cycle III, the following results were obtained:

Table 5. Observation Results of Cycle III

No	Critical Thinking Indicators	Percentage (%)
1	Involvement in solving problems	76,7%
2	Ask a friend about a problem	80,3%
3	Searching for information from various sources	82,1%
4	Engage in discussions to develop ideas	76,7%
5	Assess the ability of the knowledge gained	78,5%
6	Apply knowledge to solve every problem	80,3%
	Average	**79,1%**

The table 5 describe about students' critical thinking skills in cycle III showed an average of 79.1%. From the table, it can be concluded that there is an increase in students' critical thinking skills in cycle III compared to the initial or pre-action conditions, cycle I, and cycle II. The comparison between cycle II and cycle III can be seen in the Table 6.

Based on table 6, it was concluded that the level of critical thinking ability of students in grade XI IPS 3 in cycle III increased compared to cycle II with a difference of 21.5%. In the reflection stage of cycle III, the researcher conducted interviews with teachers of sociology subjects in class XI related to students' critical thinking skills with the TGT b model in sociology learning.

From the results of the interview, it was concluded that the TGT model had a positive impact on students' participation and critical thinking skills in the learning process. In terms of the criteria for students' critical thinking skills, the average in cycle III has included high criteria with an achievement

of 75%-100%. Therefore, the research conducted was completed in cycle III. The following is a comparison table of students' learning activity based on pre-action, cycle I, cycle II, and cycle III.

Table 6. Comparison of Students' Critical Thinking Skills in Cycle II and Cycle III

No	Critical Thinking Indicators	Cycle II	Cycle III	Percentage Increase
1	Involvement in solving problems	58,8%	76,7%	17,9%
2	Ask a friend about a problem	57,1%	80,3%	23,2%
3	Searching for information from various sources	64,2%	82,1%	17,9%
4	Engage in discussions to develop ideas	58,9%	76,7%	17,8%
5	Assess the ability of the knowledge gained	51,7%	78,5%	26,8%
6	Apply knowledge to solve every problem.	55,3%	80,3%	25%
	Average	**57,6%**	**79,1%**	**21,5%**

Table 7. Comparison of Students' Critical Thinking Skills in Pre-Action, Cycle I, Cycle II and Cycle III

No	Critical Thinking Indicators	Pre-Action	Cycle I	Cycle II	Cycle III
1	Involvement in solving problems	17,8%	39,2%	58,8%	76,7%
2	Ask a friend about a problem	25%	32,1%	57,1%	80,3%
3	Searching for information from various sources	21,4%	48,1%	64,2%	82,1%
4	Engage in discussions to develop ideas	14,2%	49,9%	58,9%	76,7%
5	Assess the ability of the knowledge gained	28,5%	35,6%	51,7%	78,5%
6	Apply knowledge to solve every problem.	17,8%	30,3%	55,3%	80,3%
	Average	**20,7%**	**39,2%**	**57,6%**	**79,1%**

Based on table 7, it was concluded that there was an increase in students' critical thinking skills in each indicator after the implementation of the TGT model. The increase in learning activity is presented in the diagram Figure 1.

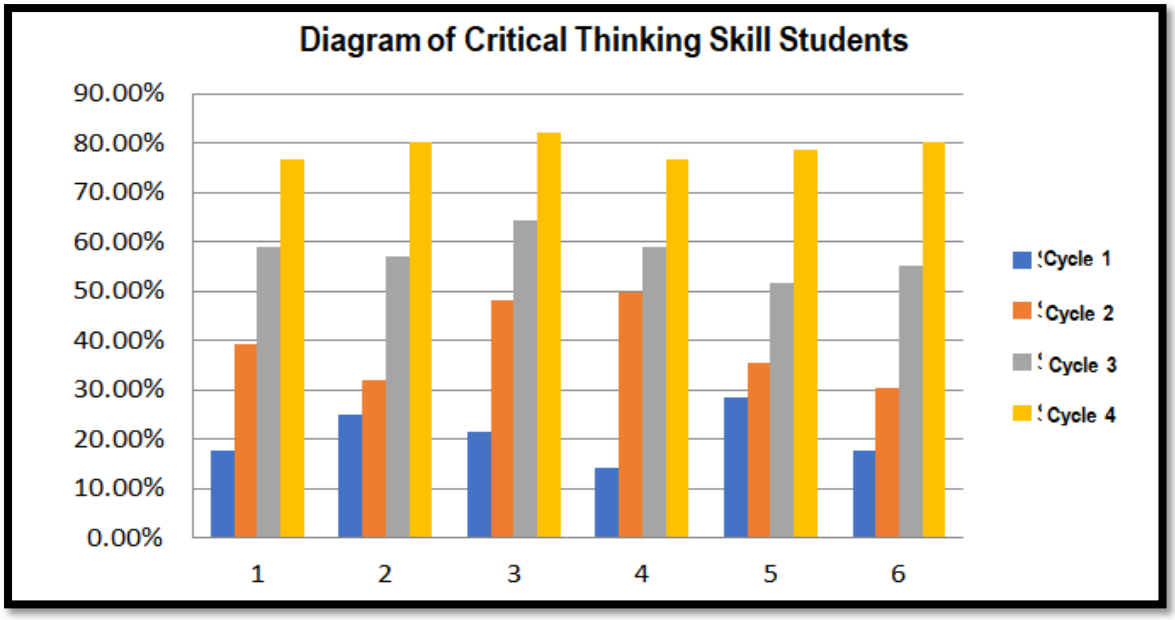

Figure 1 Learning Activity

Based on the diagram in figure 1, it is concluded that there is an increase in students' critical thinking skills in each indicator after the application of the TGT model in cycle I to cycle III with a final average of 79.1%. With the achievement of students' critical thinking skills, it is concluded that the application of the TGT model can improve students' critical thinking skills in sociology learning.

Discussion

One of the demands of the success of 21st century learning is that students have the ability to think critically. 21st century skills are in great need to be able to solve complex problems, therefore education must strive to improve students' critical thinking skills within a certain period of time (Saputra et al., 2020). Critical thinking skills can increase motivation and confidence and enable individuals to achieve better learning. Because, in critical thinking the individual involves judgment and feelings in taking action to achieve a deep understanding (Asriningtyas et al., 2018; Hamdani et al., 2019; Wahyuni et al., 2022).

Based on the research of classroom actions in the application of the TGT model, there are several things that cause an improvement in students' critical thinking skills, namely by applying an interactive and fun learning model can trigger student involvement in learning, teachers also play an important role in improving students' active critical thinking skills, and acknowledging students' efforts during learning can increase their confidence and encourage them to be more active in their opinions (Hendi et al., 2020, 2020; Marudut et al., 2020). Furthermore, a conducive and supportive learning atmosphere makes students feel comfortable in speaking, asking questions, and expressing opinions which improves students' critical thinking skills. The activity that creates a conducive atmosphere is ice breaking activities by providing mini games to students. Ice breaking helps reduce students' tension and anxiety that arises during learning (Safitri & Mediatati, 2021; Sunyoto et al., 2022; Thalita et al., 2019).

There are several factors that cause the decline in students' critical thinking skills. One of them is a monotonous and unattractive learning approach and an unsupportive learning environment (Kurniawan et al., 2021; Nuryanti et al., 2018). Students admitted that they often did not focus on learning because of the lack of a conducive learning atmosphere. This is due to several factors such as the invitation of classmates to talk when the teacher explains, laziness to learn, and an unconducive atmosphere such as noisy noises both from inside and outside the classroom.

Conclusion

Based on the class action research (PTK) that has been carried out for 3 cycles in class XI IPS 3 at SMA Adabiah 2 Padang, it can be concluded that the application of the TGT model can improve students' critical thinking skills in sociology subjects with an average of 79.1% which is in the high activity category. The improvement of students' critical thinking skills occurs because of basic things that need to be considered such as giving additional points to students who are actively expressing their opinions, providing variations such as adding animations, images, or videos to learning media, conducing the atmosphere both in and outside the classroom, and doing ice breaking by giving mini games to students with the aim of breaking down the tension and helping students become more relaxed after learn. The results of the study have implementation for schools as a form of sociology learning innovation. The limitation of this study is that the implementation of this model takes a long time, so for future researchers, it is recommended to be able to divide the time to be applied optimally at each meeting.

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