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Combining Teams Games Tournament (TGT) and Mind Mapping to Improve Students' Activity and Learning Achievement

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Abstract

The research examines the process of improving students' activities and students' achievement in Economics by applying collaborated learning model between Mind Mapping and Teams Games Tournament (TGT). This study follows a classroom action research conducted in SMAN 2 Batu in Indonesia for Tenth-grade students in social studies. This research is carried out in two cycles including four stages namely planning, observation, evaluation, and reflection. The data were gathered from several tests and direct observation. Further, the data were analyzed both qualitative and quantitative accordingly. The findings showed that the combination of mind mapping and teams games tournament (TGT) promotes better teaching and learning activities. Consequently, students are more likely to understand the materials in the economic course comprehensively. Furthermore, the implementation of both learning models simultaneously affects to encourage students to be active and spirit to follow the lesson. Lastly, the amalgamation of mind mapping and teams games tournament (TGT) leads to greater students' activities and students' achievement.

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INTRODUCTION

Learning is an essential and fundamental part of the individual educational process. Learning also cannot be separated from the lesson process in the classroom. In order to create good learning outcomes and in accordance with the objectives of the lesson in a course, it is necessary to attempt a teacher by observing the pattern of student learning, mastering the subject matter, choosing an appropriate learning method (Narmaditya et al., 2018 & Istiqomah, 2017). It implies that by using an appropriate learning method, it can lead to greater learning result.

The lack of use of learning models brings to the quality of education in Indonesia. In fact, teachers are more likely to use the conventional learning model instead of variations in learning methods. However, the use such learning model will stimulate motivation that predicted lead to more fun and active in the classroom. This matter with the existence of an active learning atmosphere from all parties in the class, the learning in the classroom will provide good results.

In economics, there are several difficult courses to be achieved by students such as capital market, financial market, the present value of money and so forth (Wulandari & Narmaditya, 2017). One effort to solve the existing problem of the economic learning process in mastering difficult concepts is by using a cooperative learning model such as Teams Games Tournament (TGT). Cooperative learning is a learning model that is based on humans as social beings. It invites students to play an active role in the learning process that makes expected results from this learning students better understand the concepts that are being studied without them knowing because of their active role in learning.

From the previous observation, learning activities in that school is more likely to use the conventional learning model. It has consequences for students' understanding of the subject matter. In addition, both students' learning achievement is categorized as fairly and the activity of students who are still lacking. Teams Games Tournament is conducted in groups with the aim that students can work together. Students in one study group will be indifferent to the assignment given because each student has responsibility for the success of the group. Team building can develop social skills, which are needed to work with classmates who have different backgrounds, values, and attitudes. The TGT model can make students feel happy in learning and test knowledge through academic games. Playing games on learning can make teachers and students feel happy. The game that is played in TGT is answering the questions on the cards that are arranged relevant according to the learning objectives and designed to test students' knowledge.

However, a weakness that occurs in the TGT model is a learning process that can lead to saturation (Jura et al., 2018). The learning process using TGT is conducted by lectures by the teacher and group discussions. Lectures and discussions are good methods of learning, but in their application, there is a need for variations that emphasize the activity of students in understanding a concept independently. If this is not be conducted then there will be saturation in learning that providing the students' enthusiasm will decrease. This is what underlies Slavin (2008) which thinking to combine the TGT method with certain methods that are more pleasant in the learning process such as mind mapping.

Erdem (2017) remarked that Mind Mapping is the easiest way to place information into the brain and extract information from the brain. Mind Map is a way of recording that is creative, effective, and will literally map our thoughts. When viewed from external factors that affect learning outcomes, namely the learning model, the Mind Map learning model is suitable for use. With the Mind Map learning model it will help students learn to compile, and store as much information as possible, and group it in a natural way, giving easy and direct access to whatever students want.

There are noticeable previous studies on Teams Games Tournament (TGT) in all grades and Mind Mapping partially (Wyk, 2011; Salam et al., 2015; Sa'adah, 2017; Kimbun & Thomas, 2017; Istiqomah, 2017). However, in fact, a collaboration between TGT and Mind Mapping never been carried out previously. Therefore, this study intended to implement the combination of two learning models in enhancing students' activity and learning achievement.

METHOD

This research used a qualitative approach to classroom action research. A qualitative approach is used due to the problem under study requires a descriptive and comprehensive disclosure. As an effort to find the authentication and solution of the problem raised in this research, the researcher has determined and designed the research approach with the design of class action research. This study was carried out in two cycles wherein each cycle includes four stages namely planning, observation, evaluation, and reflection. The Subjects in this study were the students of Social Studies class X IIS 1 SMAN 2 Batu in Indonesia which amounted to 35 people consisting of 19 female students and 16 male students. The data taken from this research are students' activities and students' achievement. An attempt to obtain students' activity, the study data used instruments observation sheet while students' achievement used instrument test sheet in the form of questions of choice. Furthermore, the data analysis was analyzed by using through stages consisting of reducing data, presenting data, drawing conclusions.

RESULTS AND DISCUSSION

Action planning is conducted after the first observation reflection phase. The activity in the planning section in the first cycle consist of arranging lesson plan, preparing for test questions (pre-test and post-test), providing student activity observation sheet, proposing the tournament questions, arranging the chest number in order to facilitate the observer to assess the activity of the students, and coordinating with the observer and the subject teacher related to the implementation of learning in 1st cycle.

The material discussed in the first cycle was about the bank and non-bank financial institutions. Based on the data analysis of the post-test in the first cycle that the students' learning mastery showed an improvement. From the results of the pre-test scores, it was only two students who achieved mastery and increased on the test-post which is 23 students who experience mastery of the total students of 35 students. Student achievement rose dramatically after applied mind mapping and teams games tournament implemented during the learning process. In more detail, the comparison between pre-test and post-test can be seen in Table 1.

Table 1. The Results of Student Achievement in the First Cycle

1 st cycle	Pre-Test	Post-Test	Information
Average Score	37.25%	70.63%	Increased

Table 1 informs the comparison score between pre-test and post-test of students toward their students' achievement. In the beginning, it reached approximately 37.25 percent, then it rose sharply after both learning models implemented simultaneously. It implies that the combination of mind mapping and teams games tournament leads to greater achievement.

Table 2. The Percentage Mastery of Learning Achievement in the 1st Cycle

1 st Cycle	Pre-Test		Percentage of Mastery	Post-Test		Percentage of Mastery
	P	NP		P	NP	
The Number of Students	2	33	5.71%	23	12	65.71%

Note: P (Passed), NP (Not Passed)

From Table 2, it can be known that the percentage of students' learning completeness in the 1st cycle from the pre-test results amounted about 5.71 percent of the total students of 35 students. After applied learning with Mind Mapping and Teams Games Tournament (TGT) it increased to the level of 65.71 percent. Meanwhile, students' learning activity in the first cycle was assessed through four aspects which determined by three observers (See Table 3).

Table 3. The Study Activity of Grade X Students in 1st Cycle

No	Aspect	Percentage	Criteria
1.	Working on Mind Mapping	65%	Sufficient
2.	Discussion before The Tournament	63.57%	Sufficient
3.	Answering The Tournament Questions	76.43%	Good
4.	Comment on Tournaments	52.14%	Sufficient

Based on the exposure of data obtained from the action of learning first cycle, it is known that with the implementation of learning using Mind Mapping and Teams Games Tournament (TGT) can improve learning achievement and student activeness in the learning process. However, there are still some deficiencies in the first cycle, among others: (1) at the beginning of learning when researchers explain the method of learning Mind Mapping and Teams Games Tournament Teams (TGT), students are still confused because they have never implemented this method, (2) at the time of group division, some students want to have the group they want, (3) some students still look crowded when the Map Mapping work/concept map, (4) during the discussion before the tournament, students are still crowded and joking, (5) when answering a matter of tournaments some students joke and less serious in answering, (6) at pre-test and post-test many students who complain are not ready yet.

In the second cycle, the lessons to be discussed are about the Central Bank and Financial Services Authority. Based on the data analysis of the post-test in 2nd cycle, the completeness of student's studies is escalating, starting from pre-test which only contained four students who mastered and showed enhancements on post-test which resulted to 30 students who mastered from the total number of

students which is 35. Students' achievements increased after Mind Mapping and Teams Games Tournament method was applied during the process of studying. Students scores that are increasing as shown in Table 4.

Table 4. The Results of Students' Achievement in the 2nd Cycle

2 nd cycle	Pre-Test	Post-Test	Information
Average Score	39.2%	79.3%	Increased

From Table 4, it is known that the average mark of the pre-test in the second cycle which is about 39.2 percent. Thus, after Mind Mapping and Teams, Games Tournament methods are applied, the average mark increased to the level of 79.3 percent.

Table 5. The Percentage of Student's Achievement in 2nd Cycle

2 nd Cycle	Pre-Test		Percentage of Mastery	Post Test		Percentage of Mastery
	P	NP		P	NP	
The number of students	4	31	11.43%	30	5	85.71%

Note: P (Passed), NP (Not Passed)

Based on Table 5, it can be known that the percentage of student's mastery on studying in the second cycle is shown from the pre-test mark which is 11.43 percent from the total number of 35 students. Then, after Mind Mapping and Teams Games Tournament implemented, is shown from the result of the post-test mastery in studying increased to 85.71% of the total number of students. Students' participation in the second cycle is rated through in four aspects, which are judged by three observers whom later on will average the marks with the results shown in Table 6.

Table 6. Students' Participation 2nd Cycle

No.	Aspect	Percentage	Criteria
1	Mind Mapping	88.57%	Good
2	Discussion before the Tournament	87.86%	Good
3	The answer about the Tournament	90%	Good
4	Provide comments to Tournament's answer	83.57%	Good

The result from the second cycle it is known that (1) students are used to learning using Mind Mapping and Team Games Tournament (TGT), (2) students can more understand the Mind Mapping's result as a material for learning, (3) students are happy in playing tournament, (4) students can cooperate more with their team and be able to help each other in learning. Based on the analysis of students test result in 1st cycle and 2nd cycle, learning achievement has increased. The increase of the first cycle was less significant than the increase of the second cycle, this is caused by student's incapability of understanding towards the stages of implementations of learning used so that students still confused about the learning process. Students doubt toward the Mind Mapping along with Teams Games Tournament (TGT) method that is the first time applied causes the students to lack in understanding which results in an unsatisfactory achievement.

That is reasonable why in the second cycle is very important to reach the target. After the reflection of the 1st cycle, a lesson on a 2nd cycle run on smoothly and results in a step-up on the student's achievements which is better than the first cycle.

It implies that using Mind Mapping along with Teams Games Tournament (TGT) helps students to improve their studying abilities. This also corresponds to previous studies by Rizqiya (2013) and Istiqomah (2017) that is one of studying method that is used to train the ability to provide content along with Mind Map. Mind Mapping would help students to train and use up their left and right brain abilities, which later on could be applied to help and understand faster because it has been divided. In the other hand, mind mapping helps content to be organized visually and illustrated which at the end helps record, strengthen, and recall back information that has been studied. This helps students understand better and keep remembering content that has been studied. Another thing that pushes students to understand the content is through Mind Mapping, this is as a result of the process that doesn't include teacher's force which leaves them to their own creativity without pressure. This leaves them with confidence and contentment.

An increasing in learning achievement is also influenced by Teams Games Tournament (TGT). This is appropriate with Lestari & Yunikawati (2017) is with tournament discussion, so students will be more remembering the material that shows on tournament questions and then discusses with their teams using Mind Mapping which they're made it themselves before the tournament. Using mind mapping for teams discussion, students happier and sharing each other about the subjects knowledge with their friends so this easier to remember the material of subjects also with doing tournament, students automatically will have the enthusiasm to get the point when the tournament. The eagerness of autonomous learning will help students to understand the subject material and make their memory remembered easily. Another activity is with giving a comment to answer during the tournament has gone and the students an audience. With giving occasion to share the comment or answer's addition during tournament then give them point pushes students to study hard. From the whole of Students activities above, show a positive contribution to a learning process and be able to improve their learning achievements.

Prior condition before Mind Mapping and Teams Games Tournaments (TGT) was applied shown class situation its lack of conducive. Students only listened to subject's explanation from the teacher and note that and seem passive. From the analysis of observation result student's participation 1st cycle and 2nd cycle, student's participation has increased. This increase is affected by the result of using methods of Mind Mapping along with Teams Games Tournament (TGT). However, there is an obstacle on the 1st cycles such as students still confused with using methods of Mind Mapping and Teams Games Tournament (TGT) that make students not fully focus on learning. This confusion affects to unsatisfied learning, there some students still will not take the studies seriously, just half of the students still participated with the tournament and gave their opinions and students are so loud makes this class condition was not conducive, so using 2nd cycle learning types is needed for reaching the target.

After reflection in the first cycle, the researcher did an improvement with explaining again about steps an implementation of a subject slowly and clearly in

order students can understand what should they do and also giving motivation, hence students can participate in this learning. In the second cycle, students already get used to implementations the methods of Mind Mapping and Teams Games Tournament (TGT), hence students will be more comfortable and enjoying the learning that makes increasing student's participation at class that exceeds a minimum which had been specified. An increasing amount of participation is caused by students that are used Mind Mapping based on their creativity and personal thinking.

In corresponding with excellence from learning Teams Games Tournament (TGT), Taniredja (2013) mentioned that students discuss the material with friends of group freely. This matter makes the individual students who are more agreed with another friend and indicates the attitude of tolerance to opinion friends of the group. Students exchange material information through the masterpiece mind mapping as a learning material together for a tournament that requires each student to appear for completion. In this case, the students try hard to actively answer the question of the tournament when they compete to get the most points in the group. This makes students feel important and not just rely on other friends. Then, by giving students a chance to add answers about the tournament, it makes students happy to learn and more active in learning. Students are trained not to be ashamed to express their opinions and students are more enthusiastic in responding to the continuity of the learning process.

CONCLUSION

The implementation of learning using the mind-mapping method combined with teams games tournament can improve student achievement. It can be seen It implies that with the mind mapping method combined with teams games tournament can help students to easily understand the learning materials that can help improve learning achievement. In addition, the combination of learning using mind mapping method with teams games tournament leads to the better activity of students. It shows that the application of mind mapping method combined with teams games tournament can encourage students to be active and more spirit to follow the lesson.

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