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The Implementation of the Teams Game Tournament (TGT) Model to Increase Biology Learning Activeness

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ABSTRACT

Teachers and students need an adjustment period to adapt from distance learning to face-to-face learning. This condition raises problems in the teaching and learning process. The research used classroom action research as a research design for implementing the TGT cooperative learning method to increase the activeness of class X students in Biology learning. The learning activeness of Class X students in biology subject categorized as low. To improve it, the researcher utilized a fun method such as TGT. The research participants were sixteen class X MIPA SMA Islam 1 Surakarta students. Data collection techniques of the research used observation, questionnaires, and tests. Comparative descriptive statistics were used to examine the quantitative data, while critical analysis was used to analyze the qualitative data. The results of the data analysis presented that students' learning activeness increased to the high category (≥ 75%) with details of 75% visual activity, 76% verbal activity, 83% listening activity, 76% writing activity, 96% motoric activity, 89% mental activity, and 86% vigorous activity. These results arise due to the active role of students in the syntax of games and matches. Nature card media generate students' interest in learning, because contain picture-cued of surrounding natural phenomena in the student environment. The card's questions were scaled to the student's cognitive capacity level and impacted the student's self-awareness to care about the environment. It can be concluded that contextual learning of the environment change with the TGT model can increase student learning activity, especially in Biology lessons.

Kata Kunci: Activeness, Game, Classroom Action Research, Teams Game Tournament (TGT).

Introduction

Learning activeness is a critical process in reaching learning objectives. Students who are not active in the learning process are the same as those who are not engaged in the learning process, and they will be unable to fulfil their learning objectives (Wahyuningsih, 2020). Learning activeness emerged as a result of learning activities facilitated by a teacher (Prijanto & Kock, 2021). Learning is the process of transferring the knowledge of the teacher to the students while also establishing an environment that supports active learning until learning objectives are met. The student's active participation is critical in the process of understanding that knowledge (Muslim et al., 2019).

According to pre-research observations at SMA Islam 1 Surakarta, the achievement of Biology learning activeness in one class is 58%, which is considered low (Arikunto, 2017). Lecturing teaching methods and individual learning through the Internet have made this condition. This approach was chosen due to the conditions, educational facilities, and student learning styles. The student remains in class from the beginning until the end of the course and the teacher assigns them a worksheet to complete. This approach is insufficient for encouraging students' activeness and interest in Biology. The teacher also claimed that it was difficult to teach and give material because of the limited time available, which was 30 minutes per week to convey a big amount of material. In addition, because of distance learning which only focuses on giving online assignments makes students bored with the learning activities. Students understand the subject rapidly but struggle to focus on the learning process and must be directed by the teacher. Students' instability and lack of social interaction due to the switchover from distance learning to face-to-face learning also influence the process and the result of learning activities (Alfin et al., 2022).

The first step to outgrowing learning difficulties is by choosing a suitable teaching approach. Teachers as the student's learning facilitators can develop an attractive fun learning environment to decrease flatness and increase activeness in student engagement (Jaya, 2017). Appropriate learning models can support interesting teaching and learning activities. The learning model should be chosen under the present curriculum to include student-centred activity that encourages students to actively explore the meaning of learning {Formatting Citation}. The use of a lecturing approach without innovation will give the teacher a negative washback such as students' flatness and inactiveness (Kanza et al., 2020).

The implementation of cooperative learning is one of the alternatives model to encourage student's activeness. Team Game Tournament (TGT) as one of the cooperative learning alternative model can be implemented in Biology's learning activity. The TGT model requires students to participate in several groups cooperatively and compete in a tournament (Slavin, 2015). This model stimulates students' activeness in some aspects, not only in the cognitive but also psychomotor, because they need to think creatively to surpass another. The tournament is between individual so students independently overcome the game by their own ability. In line with Suseno et al., 2017 that the implementation of TGT model positively influence student' activeness and learning achievement because they enjoying the learning process. Furthermore, cognitive achievement, teamwork, and deliberative attitudes also improve. According to that reason, using the TGT model is an excellent way to encourage students' learning achievement in Biology (Sulistyo & Mediatati, 2019).

Based on the previous rationale, the researcher considers that implementing the TGT cooperative learning model can alleviate students' low learning activity in Biology due to the transition from distance to face-to-face learning. In accordance with it, the researcher used it as the action in the present research.

Research Metodology

Classroom action research was used to resolve a challenge in the classroom through a cycle of action. The research participants were five male and eleven female students (n=16) from class

X MIPA SMA Islam 1 Surakarta. Source of the data for the research consisted of student and teacher's data as well as learning activities through observation. Data collection technique selected in this research were observation, questionnaire, and test. The procedure of the research are as follows:

1. Planning, pre-activity before the action such as developing lesson plan and preparing the learning media.
2. Action, the implementation of TGT model in the learning and teaching process.
3. Observation, using observational sheets to collect data following the learning and teaching process.
4. Reflection, which involves assessing data based on the findings of observations to choose the next course of action in the following cycle (Parnawi, 2020).

The indicators of student's activeness according to Sudjana (2012) is visual activities, oral activities, listening activities, writing activities, motor activities, mental activities, emotional activities. *Indicator for drawing activities c*annot be measured in this research due to the design and the limited time. The validity of the data was attained by using triangulation which cover data sources from three observer. The data analisys technique used comparative descriptive statistics to examine the quantitative data and critical analysis to analyze the qualitative data. The quantitative data were collected through student's activeness in each course. The formula to the score of the data can be seen as follows:

$$x = \frac{Student's\ score}{Total\ score} \times 100\%$$

The precentage of the result was categorized into several level as follows:

Tabel 1. Student's learning activeness categories

No	Activeness' level	Range of Students' Activeness (%)
1	High	75 – 100
2	Moderate	51 – 74
3	Low	25 – 50
4	Very Low	0 – 24

Source: (Arikunto, 2017)

After defining the category of activeness, the data were compared between the pre-action and post-action tests to establish if there was a difference. During the action phase, critical analysis is performed to identify the flaws and advantages of the teacher or student's *performance*. The results of critical analysis can be used to address previous inadequacies. If the activeness of learning can be increased by 75%, the research will be considered successful. The research was carried out in two cycles, with details of two meetings in each cycle. Each cycle consists of four steps: planning, activity, observation, and reflection.

Research and Discussion

Pre-cycle

The pre-action observation was carried out to know the student's learning activeness at biology subject in class X MIPA. The result are as follows:

Tabel 2. Student's learning activeness level at pre-action

No	Indicators	Precentage	Categories
1	*Visual activities*	67%	Moderate
2	*Oral activities*	44%	Low
3	*Listening activities*	75%	High
4	*Writing activities*	50%	Low
5	*Motorik activities*	63%	Moderate
6	*Mental activities*	50%	Low
7	*Emotional activities*	50%	Low

Source : research data

Table 2 shows that the student's learning activeness in Biology was considered low. Since the lecturing approach, listening activities are rated as high because most of the time during the teaching and learning process, students merely listen to the instruction and complete the worksheet. This condition makes students inactive and indolent. (Kanza et al., 2020) state that an uninovated lecturing approach creates an apathetic passive student with low learning activeness. Students get uneasy interacting with one another and participating in learning activities with the teacher.

Cycle I

The observation was carried out to determine the student's learning activity in the biology topic in class X MIPA during cycle I. The overall result is as follows:

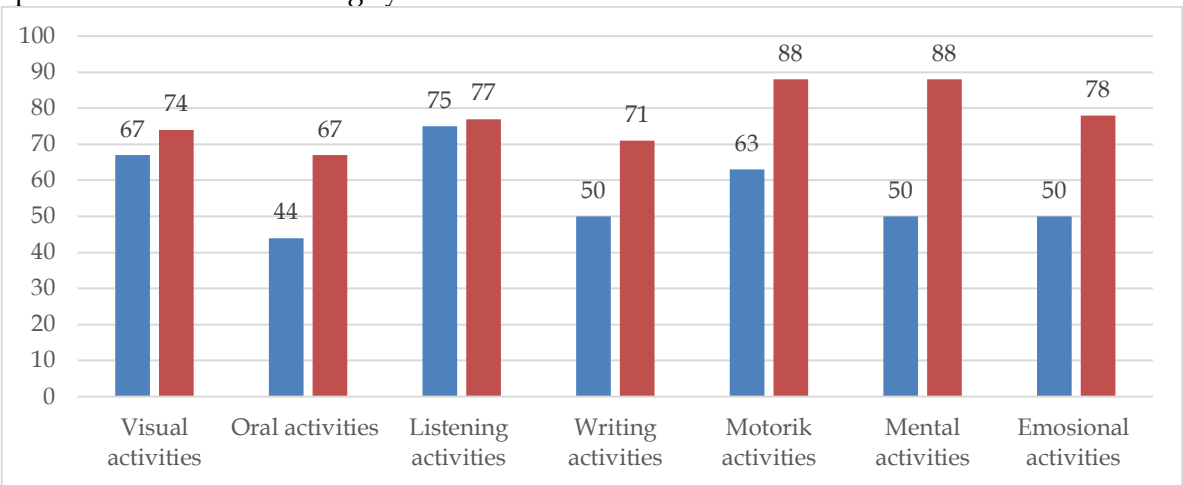
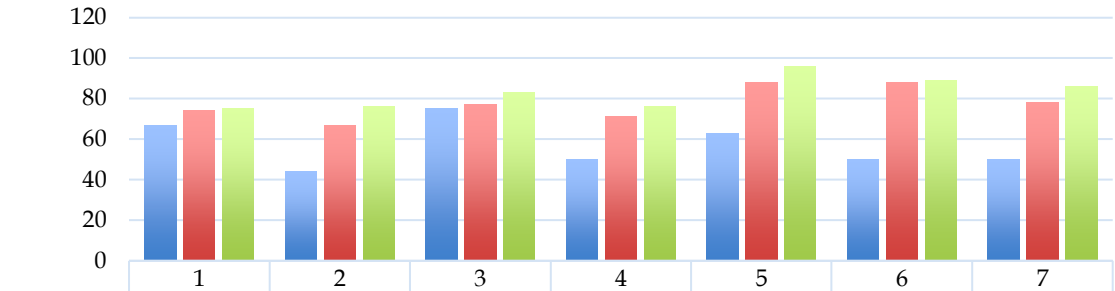


Figure 1. The comparison of student's learning activeness at pre-cycle and cycle I pra siklus-siklus I: pre-cycle , cycle I

Figure 1 illustrates a comparison between pre-cycle and cycle I. All of the indicators grow slightly, although not all of them meet the research aim (75%). Mental activity has increased the most (38%) following the implementation of the TGT model with game and match. The game piques students' interest and encourages them to participate actively in the learning process (Awan et al., 2019). Students compete by representing their group against the representatives of other groups. The cards depicted events from nature relevant to current learning content and the student's surroundings, such as the changing colour of the black river

water beside the school. It may assist students in comprehending the importance of protecting the environment and restoring the damage that has occurred with specific activities. Students' unsteady responses to the given directions were being a challenge, but cycle I actions went smoothly.

Cycle II



	1	2	3	4	5	6	7
Prasikus	67	44	75	50	63	50	50
Siklus I	74	67	77	71	88	88	78
Siklus II	75	76	83	76	96	89	86

Figure 2. The comparison of student's learning activeness at pre-cycle,cycle I and II.

Figure 2 illustrates a comparison between pre-cycle, cycle I and cycle II data. As the result of reflection in the end of cycle I, all of the indicators meet the research aim (75%). Motoric activities has increased the most. An increase in visual activities from 67% to 75% was indicated by reading activities and listening to the teacher and other students. Their reading activities were examined when the students were working in groups to understand the learning source. Listening activities were examined when the teacher delivered learning content and discussed the rules of the game, as well as during the discussion and group presentation session. According to the theory, by incorporating more visual activities, students were able to focus on the learning process and enjoy it (Kanza et al., 2020).

An increase in oral activities from 44% to 76% was indicated by speaking activies during presenting the result of discussion, remarking a statement, and answering the questions. Those activities were axamined when students were working in groups to do active discussion each member and other group. According to the theory, arranging dicussion activities could increase students' oral activities (Irawati, Susilo, & Aprilia, 2016).

An increase in listening activities from 75% to 83% was indicated by listening activities through teacher explanations, games and discussion sessions. Without a maximum listening process, students are unable to catch the material. Listening is a practice that encourages students to appreciate someone who is speaking, which improves students' social attitudes. According to (Dahir, 2018) research, games can help students enhance their listening skills.

An increase in writing activities from 50% to 76% was indicated by writing activities resulting from discussions. Students are needed to put down the outcomes of the talks that have taken place by examining the difficulties presented using the answer boxes supplied. As a result, students engage in mental activity during the writing process. Improving writing skills through discussion is consistent with the study undertaken by (Fatria & Ainun, 2021).

Motoric activity increased from 50% to 96% as a result of playing performs and answering questions. This resulted from students playing and competing with a sequential mechanism that automatically involved motoric activities such as running and stepping. Students will be required to conduct both motor and mental actions to answer the questions. Awan et al. (2019) found that games can increase motor activity and improve student learning results. Students must actively participate in each match with a focus on cooperation, which necessitates a lot

of motoric activity supported by conversation (Klinmalee & Charoenboon, 2022). This discussion has led to the conclusion that games and matches can considerably boost students' motoric activity.

Emotional activities increased from 50% to 86% was indicated by student reactions when learning, such as happy or bored, nervous or normal. Students were delighted and not bored with the learning as it was being implemented, but they were concerned when they were elected as group representatives. Apprehensive students are less likely to accurately answer questions since the time available to answer questions is short. This increased engagement happens because students with higher understanding were able to grasp the content in greater depth as a result of the enjoyable learning environment (Wahyudi & Haryono, 2014). According to the findings of student interviews, the learning that was done was really fun, which made the content easier to absorb.

Mental activity indicators increased from 50% to 88% as a result of student activities such as problem-solving, receiving teacher explanations, making decisions, and enjoying tournament results. Mental activity is the second indicator after motor activity which has increased rapidly. This is supported by the actions of the students while they are learning. Students answer match questions honestly, without the assistance of friends or cheat sheets, so that students' abilities are truly tested in this game. Previous research has shown that games and matches can boost students' mental activity. (Sari, 2019).

The TGT model has the benefit of enhancing student learning activities, allowing them to focus on doing teacher assignments, tolerating more individual differences, actively participating in learning, educating them to socialize, motivating learning to be higher, and improving learning outcomes. On the other side, the model's limitation is the difficulty in classifying individuals based on their aptitude, the lengthy time it takes, and the inconsistent capacity of students to support peer tutoring. Existing limitations can be overcome by performing tasks at the proper time and following clear group work instructions to reduce confusion. The faster individuals understand the faster learning may be implemented. The results of the two action cycles are consistent with the previous idea that the TGT model can promote student learning activeness (Suseno et al., 2017).

Conclusion

Based on the research findings and discussion, the following is the study's conclusion:

1. Through two action cycles, the implementation of the Teams Game Tournament learning model can raise the learning activeness of Class X MIPA SMA Islam 1 Surakarta with a target achievement percentage of >75%.
2. The study's limitation is the lack of specific indicators employed since they were modified to the time available. Suggestions for future studies can employ TGT to address more specific student activity issues.

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