The Implementation of a Thematic Team Games Tournament – Cooperative Learning in the Fifth Grade of Elementary School in Lampung Province

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This study aimed to analyse the effect of cooperative learning through a thematic team-games tournament in elementary school in Lampung Province. This was a quasi-experimental one-group pretest posttest study. The study involved 22 students. The data was collected from tests with five short-answer questions and 20 multiple-choice questions. The items measured were remembering, understanding, applying, and analysing. The reliability of the items fell into very high (0.92) and moderate to high (0.50 – 0.87) categories of validity. The discrimination power of the test fell into the good category (0.41–0.70) with a moderate level of difficulty (0.31–0.70). The data was analysed with a t-test. The learning outcomes of the fifth-grade students of elementary school were influenced by the cooperative learning in the teams-games tournament with a significance level of 5%. The cooperative learning in a team-games tournament played an important role in increasing the fifth-grade students’ learning outcomes.

Key words: Team-games tournament, thematic learning, cooperative learning, elementary school.
Introduction

It is widely accepted in education that the learning process should change students so that they can understand and use critical thinking when dealing with problems and behaviour. These skills are important in ensuring the sustainable development of a nation (Paul, 2018; Giroux, 2018). Knowledge, attitudes, and skills are formed by the process of learning (Retno, 2019; Adesoji, 2018), and students need to engage positively in activities, thinking, the development of concepts, and everything learned is provided with a meaning (Shofiah, 2018; Suprihatiningrum, 2016).

The development of knowledge, attitudes, and skills creates changes in learning outcomes. If an educator applies an interesting learning model and motivates students, continuous change can take place (Aviv, 2019; Irbawati, 2019). These changes in students' abilities lead to other changes that benefit their learning in the future (Tidd, 2018; Gay 2018; Morrison, 2019).

Making students central in the teaching and learning process enables them to hone their critical reasoning skills, develop creativity, become active, and work together (Darling-Hammond, 2018; Giannoti, 2015). Cooperative and thematic learning is particularly suited to achieving these goals. Cooperative learning is a learning strategy that creates student-oriented learning activities and motivates students to learn (Gillies, 2016; Altun, 2017).

Cooperative learning is social and collaborative in nature (Vygotsky, 2019; Guo Y, 2019). Students learn to be personally responsible, respect each other, and complete group tasks in a team to achieve shared goals (Zhang, 2018; Mendo Lazaro, 2018; Gungor, 2018). Each group member has the same responsibility for the group achieving success. Using cooperative learning models not only trains students to learn and accept what is presented by their teacher, but the students also have the opportunity to learn from each other (Sharan, 2015; Clapper, 2015; Kibirigi, 2016).

The goals of cooperative learning are maximizing the learning activities and learning outcomes/academic performance of the students, increasing the students' knowledge (both as an individual and as a group), showing mutual tolerance, and respecting racial, cultural, and social class differences. Cooperative learning aims to habituate students to learning responsibly and working well together to achieve learning goals (Thurston, 2019; Rahim, 2019; Morgan, 2019).

Learning in a more relaxed atmosphere encourages responsibility, cooperation, and fair competition. Learning engagement can be achieved through cooperative learning activities such as a team-games tournament (Vello, 2016; Pulla, 2017). In this learning model, groups consist of 5–6 members who have differences in academic ability, gender, and ethnicity or
Students compete in an academic tournament, in the form of a quiz, and use an individual progress scoring system, where a student representing the team competes with the representative of another team, who has a similar academic performance (Saadah 2017; Bolhassan, 2017; Slavin, 2019).

Cooperative learning through a team-games tournament is an example of thematic learning. In this approach, the themes for learning and discussion are integrated within various topics, with the aim of providing meaningful experiences for students (Ain, 2018; Wuryani, 2018). Students understand the facts, concepts, principles, and procedures that they learn contextually and relate them to other concepts that they have already learned and understood and the abilities they have already developed.

Thematic learning is a modern learning approach that makes the students the subjects of the learning process. It provides both direct and indirect experiences in which the presentation of facts, concepts, principles and metacognitive knowledge from different topics are not rigidly separated from one another, and the learning outcomes are in accordance with the characters of the students (Hermawan, 2009; Utami, 2018).

This learning approach allows students, both individually and in groups, to actively explore and discover facts, concepts, and scientific principles in a holistic, meaningful, and authentic way. Thematic learning takes place if authentic problems or explorations of several themes to control the learning activities exist. By participating in the exploration of a theme, or several themes, students simultaneously learn different topics and information (Wardani, 2015; Ardiawan, 2019). Students gain knowledge, attitudes, and skills and develop various competencies in the topics in a theme. This enables them to have much broader, deeper, and more meaningful knowledge and understanding of the topics. Students are given the opportunity to make connections between the topics using their own personal experiences, and to communicate in real situations.

Cooperative learning through a team-games tournament is an excellent way to overcome the low learning outcomes of fifth-grade students in public and private elementary schools in Bandar Lampung city (see Table 1). The expected learning outcomes cannot be achieved solely through the process of transferring knowledge. Teachers also need to mould the character of students in elementary schools, as their cognitive development is still in the concrete pre-operational stages. Thus, the content of a theme should be designed to create an atmosphere of effective, efficient, enjoyable learning that helps students increase their learning outcomes. One model of cooperative learning that teachers can choose and apply is a team-games tournament.
### Table 1: Average thematic learning outcomes for fifth-grade students of elementary schools in Bandar Lampung city

<table>
<thead>
<tr>
<th>No.</th>
<th>Elementary School</th>
<th>Minimum Score for Standard Mastery</th>
<th>Average (per theme)</th>
<th>Frequency of Standard Mastery</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Passed</td>
<td>Failed</td>
</tr>
<tr>
<td>1</td>
<td>Public</td>
<td>60</td>
<td>1</td>
<td>52.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>50.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>46.2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Private</td>
<td>60</td>
<td>1</td>
<td>40.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>50.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>46.1</td>
<td></td>
</tr>
</tbody>
</table>

Constructivist learning theory underlies the cooperative learning process that takes place in a team-games tournament. This learning is through heterogeneous group activities that create an active learning atmosphere for discussing and exploring the teaching materials (2015; Doubleday, 2015; Wei, 2019). This learning model consists of five stages: class presentations, group learning (teams), games, between-group tournaments, and awards (team recognition) (Rahim, 2019; Sakdiah, 2018). This study aimed to analyze the effect of applying cooperative learning through a team-games tournament on the thematic learning of fifth-grade students in elementary schools in Lampung Province.

### Method

This study was conducted through a quasi-experimental one-group pretest posttest design (Kerlinger, 1986). The researcher manipulated and controlled one or more independent variables and observed the dependent variable under investigation to find out if any other variables might simultaneously appear. The study aimed to analyze the probable cause and effect between variables through one or more treatments in the experimental group (Isaac & Michael, 1977). The fifth-grade students of public elementary schools were chosen as the population in this study, with a total of 22 samples which were determined through a random sampling technique.

Data in the form of learning outcomes was collected through tests. The scores from the tests were used as the dependent variable. The tests were in accordance with the basic competencies and indicators and constructed to assess remembering, understanding, applying, and analyzing. The tests were comprised of five short-answer questions and 20 multiple-choice questions with four answer choices. The reliability of the questions in the test was in the very high (0.92), and moderate to high (0.50–0.87) categories of validity. The
discrimination power of the test was in the good category (0.41–0.70) with a moderate level of difficulty (0.31–0.70). The data were analyzed with a t-test, to determine the effect of the independent variables on the dependent variable (Ghozali, 2005).

Results

Eight students achieved the minimum standard mastery in the pre-test, with the highest interval score being 68–80. A total of 14 students failed to achieve the minimum standard (Figure 1).

Figure 1. Pre-test scores

A total of 19 students achieved the minimum standard mastery in the post-test, with the highest interval score being 80–90. Only three students failed to reach the minimum standard (Figure 2).

Figure 2. Post-test scores
A normality test was performed to test whether the data were normally distributed. This was done using a chi-square test ($X^2$) with a criterion of $X^2 < \alpha = 0.05$. The results of the normality test analysis on the pre-test data gave $X^2 = 7.96 < X^2$ table $= 11.070$, and it was concluded that the pre-test data were normally distributed (see Table 2).

### Table 2: Normality test results of the pre-test

<table>
<thead>
<tr>
<th>No.</th>
<th>Class boundaries</th>
<th>Z-score</th>
<th>0 – Z area</th>
<th>Class width</th>
<th>N</th>
<th>fo</th>
<th>fe</th>
<th>fo-fe</th>
<th>$(fo-fe)^2$</th>
<th>$X^2$ value $= \sum(fo-fe)^2/fe$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>19.5</td>
<td>-1.2</td>
<td>0.3849</td>
<td>0.1207</td>
<td>22</td>
<td>6</td>
<td>2.65</td>
<td>3.05</td>
<td>9.03</td>
<td>1.23</td>
</tr>
<tr>
<td>2</td>
<td>31.5</td>
<td>-0.72</td>
<td>0.2642</td>
<td>0.1694</td>
<td>22</td>
<td>8</td>
<td>3.72</td>
<td>4.03</td>
<td>16.11</td>
<td>1.56</td>
</tr>
<tr>
<td>3</td>
<td>43.5</td>
<td>-0.24</td>
<td>0.0948</td>
<td>0.1896</td>
<td>22</td>
<td>0</td>
<td>4.17</td>
<td>-4.17</td>
<td>17.08</td>
<td>1.82</td>
</tr>
<tr>
<td>4</td>
<td>55.5</td>
<td>0.24</td>
<td>0.0948</td>
<td>0.1694</td>
<td>22</td>
<td>2</td>
<td>3.72</td>
<td>-1.72</td>
<td>2.05</td>
<td>0.35</td>
</tr>
<tr>
<td>5</td>
<td>67.5</td>
<td>0.72</td>
<td>0.2642</td>
<td>0.1207</td>
<td>22</td>
<td>0</td>
<td>2.65</td>
<td>-2.65</td>
<td>5.02</td>
<td>0.89</td>
</tr>
<tr>
<td>6</td>
<td>79.5</td>
<td>1.2</td>
<td>0.3849</td>
<td>0.06</td>
<td>22</td>
<td>6</td>
<td>1.32</td>
<td>4.28</td>
<td>21.90</td>
<td>2.11</td>
</tr>
</tbody>
</table>

$X^2_{value} = 7.96$

The normality test for the post-test data gave $X^2_{value} = 8.44 < X^2$ table $= 11.070$, and it was concluded that the post-test data were normally distributed (see Table 3).

### Table 3: Normality test results of the post-test

<table>
<thead>
<tr>
<th>No.</th>
<th>Class boundaries</th>
<th>Z-score</th>
<th>0 – Z area</th>
<th>Class width</th>
<th>N</th>
<th>Fo</th>
<th>Fe</th>
<th>fo-fe</th>
<th>$(fo-fe)^2$</th>
<th>$X^2$ value $= \sum(fo-fe)^2/fe$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>44.5</td>
<td>-2.28</td>
<td>0.4887</td>
<td>0.0382</td>
<td>22</td>
<td>2</td>
<td>0.84</td>
<td>1.16</td>
<td>1.34</td>
<td>1.59</td>
</tr>
<tr>
<td>2</td>
<td>54.5</td>
<td>-1.65</td>
<td>0.4505</td>
<td>0.102</td>
<td>22</td>
<td>1</td>
<td>2.24</td>
<td>-1.24</td>
<td>1.53</td>
<td>0.68</td>
</tr>
<tr>
<td>3</td>
<td>64.5</td>
<td>-1.03</td>
<td>0.3485</td>
<td>0.5039</td>
<td>22</td>
<td>5</td>
<td>11.08</td>
<td>-6.08</td>
<td>36.96</td>
<td>3.33</td>
</tr>
<tr>
<td>4</td>
<td>74.5</td>
<td>-0.40</td>
<td>0.1554</td>
<td>0.0722</td>
<td>22</td>
<td>2</td>
<td>1.58</td>
<td>0.42</td>
<td>0.17</td>
<td>0.10</td>
</tr>
<tr>
<td>5</td>
<td>84.5</td>
<td>0.21</td>
<td>0.0832</td>
<td>0.2163</td>
<td>22</td>
<td>7</td>
<td>4.75</td>
<td>2.25</td>
<td>5.06</td>
<td>1.06</td>
</tr>
<tr>
<td>6</td>
<td>94.5</td>
<td>0.84</td>
<td>0.2995</td>
<td>0.1284</td>
<td>22</td>
<td>5</td>
<td>2.82</td>
<td>2.18</td>
<td>4.75</td>
<td>1.68</td>
</tr>
</tbody>
</table>

$X^2_{value} = 8.44$

The hypothesis testing was undertaken by using a t-test. If $t_{value} > t_{table}$ with $\alpha = 0.05$ then the hypothesis $H_a$ is accepted, and if $t_{value} < t_{table}$ then $H_a$ is rejected. It was found that $t_{value} > t_{table}$ ($5.520 > 2.079$) with a significance level of 5%, and hypothesis $H_a$ was accepted.
Discussion

The post-test scores (after the students had participated in cooperative learning in the form of a team-games tournament) were higher than the pre-test scores. The learning model, oriented to educational games, makes students more confident and courageous in expressing their responses and opinions as well as increasing their activities and attention during the learning process (Rahayu, 2018; Slavin, 1996).

In group learning activities, students were given the rule that learners are responsible for their own learning and are encouraged to increase the learning of other learners. This type of learning is based on changes in cognition, attitudes, and social skills among group members. This leads to a change in the learning outcomes of students. According to Vygotsky (2019), a scaffolding occurs in group learning – students get help during the learning stages, which eventually leads them to take responsibility and learn independently. The types of assistance provided to students during group learning were directions, warnings, encouragement, breaking down a problem into certain steps, and giving examples. This assistance enabled students grow independently.

The scaffolding proposed by Vygotsky (2019) suggests that learning occurs when students work or learn to handle tasks that have not been learned, but the tasks are still within their ability. In other words, the tasks are in the Zone of Proximal Development (ZPD), which is a development level above a person's current development. According to Vygotsky, communication and collaboration between individuals provides a high mental function to shape social attitudes and changes in the knowledge of an individual.

Opportunities provided through the implementation of cooperative learning include expressing an opinion, discussing a point of view, gaining an experience, involving all students directly in learning activities, testing the level of mastery of a topic, developing ways of thinking, increasing self-confidence, and developing social attitudes. This is the result of a process of learning with each other and formulating the results of a group work (Putri, 2017). According to Arends (1997), cooperative learning has never had a negative impact. The use of individual learning models is not recommended by Arends because the cooperative learning model is more effective, efficient, and attractive in improving students’ learning outcomes. Arends also proposed that learning improvement does not depend on the age of the students, lessons/topics, or student activities. Rather, there is a positive dependence on cooperative learning, mutual respect for different levels of abilities, a comfortable and pleasant classroom atmosphere, and warm and friendly interpersonal relationships between students and the teacher so they can express their emotions often.
Habits and training resulting from group learning include being responsible for everything that is done in a group, instilling awareness of achieving shared goals, training students to share duties and responsibilities, training students to be able to conduct a self-evaluation, learning leadership, and individual responsibility for material mastery in a group (Bass, 1990; Clarke, 2019).

One of the characteristics of thematic learning is that it is student-centred. The team-games tournament in the cooperative learning model is consistent with the ideas of thematic learning. In thematic learning a topic can be linked to other topics, with stages of learning that can be applied during the thematic learning process (Utami, 2019). Thematic learning has an important place in the learning process. In elementary schools, learning must be contextual. Therefore, it must start with concrete things because the level of mental development of elementary school children begins with the concrete thinking stage. They have not been able to see separate topics. They have not been able to see objects or events that contain a number of concepts from several lessons.

School children's understanding of a concept connected with an event or object is better organized with thematic learning. However, the process of understanding is very dependent on their initial knowledge. Each child builds his/her own understanding of the new concepts they receive. Thematic learning is particularly meaningful because the students find the material, they learn to be very useful. The initial knowledge that students have is a critical part of thematic learning. The simultaneous development of cognitive, affective and psychomotor skills is also a goal for thematic learning.

In thematic learning students understand a phenomenon directly from different points of view. This allows them to behave more wisely when dealing with new situations because their understanding is based on the results of their own learning, and the results of their direct interactions with facts and events, not just results given by the teacher. The information and knowledge obtained become authentic. The teacher functions only as a facilitator and catalyst, while the students are the actors seeking information and knowledge.

In cooperative and thematic learning, students become more actively involved in planning, implementation, and evaluation. Learning takes place by paying attention to the students' characteristics – their talents, interests, motivations, and abilities (Fogarty, 1991). Thus, learning motivation emerges to make them learn continuously.

Improvements in learning outcomes demand that students are responsible for the mastery of a topic. This is consistent with the characteristics of cooperative learning through a team-games tournament. By sharing knowledge with each other, each member of the group is responsible for collecting points, and passive or unenthusiastic students are no longer found in the
learning process. This model does not make smart students (higher academic ability) more prominent in the learning process. On the contrary, students with lower academic performance are just as active and take up positive roles in their groups.

The implementation of a cooperative learning model does indeed help students to increase their learning outcomes, but there are still some shortcomings in its implementation. For example, students still tend to want to be in the same group as their seatmate during the grouping process, not with other classmates. This can affect their togetherness and acquisition of points in the group.

Conclusion

The school children’s outcomes from thematic learning were influenced by cooperative learning through a team-games tournament. Cooperative learning played an important role in increasing the fifth-grade students’ thematic learning scores in elementary schools. Therefore, elementary school teachers need to pay attention to the cooperative learning components that make up the team-games tournaments in the design of their lessons. Further research on the implementation of this model in different student grades is needed for a more comprehensive understanding of the effects on students’ performance.

Further research is required to identify which aspects contribute to the learning outcomes in thematic learning. The empirical data were not able to confirm whether the learning outcomes changed over time. This study did not investigate whether knowledge, attitude, and psychomotor skills were significantly correlated with each other. This study did not explore which aspects of cooperative learning through a team-games tournament played the most significant role in increasing the learning outcomes in thematic learning.
REFERENCES


