Improving Learning Achievement by Using Jigsaw Technique in Science Learning focusing on the topic of Preservation of Living Organisms on the Fifth Grade Semester I of SDN 2 Tribungan

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ABSTRACT

Nowadays, a cooperative learning approach has been developed to produce well learning objectives. At class that depends on teacher as the learning source, then lecture is the main option as the learning strategy. Therefore, a new strategy which is able to empower students is needed. A strategy that does not require the students to memorize facts, but rather a strategy that encourages them to construct knowledge by themselves. One of the learning achievements obtained is Science subject for grade V. Learning science emphasizes logical thinking ability, not memorizing facts. Based on the preliminary observation, the researcher conducted a classroom action research on Science subject on the fifth grade students of SDN 2 Tribungan at Managran district in the first semester by using Jigsaw technique. Based on the results of the research, it can be concluded that: 1) The improvement of students’ learning achievement showed that learning motivation was influenced by the learning strategy given by the teacher. High learning motivation influenced high learning achievement. 2) The prove of the improvement of students’ learning achievement could be explained in the results of cycle 4 activities. Based on the observation done in the previous cycles and cycle 4, there was found that: 1) the students had understood and were ready to learn the material presented by the teacher, 2) Most of the students had been encouraged to express opinions during the class discussion, and 3) the activities ran well, the class atmosphere was more alive, so the learning process was fun.

INTRODUCTION

The challenge towards the improvement of quality, relevance, and effectiveness of education as a national requirement along with the development and community
progress has a real implication in school program and curriculum. The aim of curriculum program can be reach well if the program is designed clearly and applicative. In this relations, the teachers are required to have an ability to design and decide instructional strategy that should be used. The teachers should have skills to choose and used learning method to be applied in an effective learning system (Humalik, 2001).

Therefore, teachers are seen as modernization agent in any field. The main effort that can be done by the teachers is implementing education program for the students. In the attempt to reach the education goal at school, the teachers play an important role in using method and ways to reach optimum learning results. To reach the objectives, a strategy is a very supporting tool that can be used by the teachers in teaching and learning process.

According to Usman (2002), teaching and learning process is a process containing a set of teacher and students’ actions for the sake of interrelation which runs in an educative situation to reach a certain goal. The interaction and interrelation between the teacher and the students is main prerequisites to the implementation of teaching and learning process. Based on Kusaeri’s (2001) opinion, teacher as the front-runner, should be able to anticipate this development by giving learning material with teaching strategy that is favored by the students. Therefore, the material learned will be understood well by the students and the teacher can adjust with the development of the era in presenting material with a learning strategy that can be used to improve the students’ creativity. If it is not accompanied with teachers’ knowledge, the teacher may lose and fall behind the students’ knowledge. It means that by using appropriate learning strategy, the students will be able to reach the education goals that has been formulated. For example, Science subject for the fifth grade students in semester I at SDN 2 Tribungan Mangaran district Situbondo regency. There were some findings experienced by the researcher that one of the indicators of students’ low achievement was the lack of participation in the teaching and learning process. The students tended to be passive and they were lack of courage to ask and answer question. Therefore, the teaching and learning process showed less meaningful activities. As a result, the teachers seemed to be active, but the students were passive. This was caused by the tendency of the teachers to use a quick and practical learning strategy to transfer their knowledge to the students while the students were bored with the strategy. This condition led to the low students’ learning achievement in Science subject.

By using Jigsaw learning strategy, it was expected that learning Science subject on the fifth grade students of SDN 2 Tribungan Mangaran district Situbondo regency able reach optimum results. Some of the reasons on the development of jigsaw technique in Science subject was that it was able to help the students to: (1) undergo their daily life effectively, (2) understand their world and things influenced them, (3) utilizing opportunity to develop creative thinking ability, (4) develop understanding about the concepts of science, (5) assess and used technological product, (6) understand that career in science and technology is suitable for male and female, (7) make a judgment about the issues related to the nature and artificial environment, (8) be responsible with the improvement of environment quality, (9) give solution on moral dilemma related to the issues of science and technology, and (10) prepare themselves to study in a higher level.
Based on that phenomena, the researcher intended to conduct a classroom action research about learning strategy by using Jigsaw technique in preparing Science subject material on the fifth grade students of SDN 2 Tribungan Mangaran district Situbondo regency. It was expected that Jigsaw technique helped the students to improve their learning achievement in Science subject.

RESEARCH METHOD

Classroom action research is a small intervention toward a real world action and a thorough observation on the effect of the intervention (Cohen and Mantion, 1980) cited by (Zuriah, 2003). The design of the research was done through some planning stages, they were: (1) initial reflection, (2) formulating research problem operationally by the researcher, (3) formulating action hypothesis by the researcher, and (4) deciding and generating action design. The design of this action research was done collaboratively between the researcher and the fifth grade teacher of other schools who were in the same scope of Mangaran District Education Office Branch/Cabang Dinas Pendidikan Kecamatan Mangaran. Through this collaborative work, it was expected that there would be an interaction between the researcher and the fifth grade students of SDN 2 Tribungan in the first semester in order to reach the goals of the research.

RESULT AND DISCUSSION

The explanation of data was a description of the research activities done by the researcher. In the explanation of the results of this research, the researcher explained the activities of each cycle conducted during the research. The explanation is as follows: (a) cycle I, (b) cycle II, (c) cycle III, and (4) cycle IV

a. Cycle I

The main activity in cycle I was planning, it was a general planning about the learning activities by presenting the materials that to be learned in the learning process. However, in cycle I, the learning activities had been done by the subject teacher. The activities were as follows:

- In this cycle, action planning was done in 2 meeting with 2 x 40 minutes time allocation. In the implementation of the learning strategy, the teacher stated the orientation and the working procedures to the students as the opening activities by giving the material to be learned. In the main activity, the teacher gave explanation about learning objectives of Science focusing on the topic of Preservation of Living Organisms with sub topics: (1) Endangered Animals and Plants, (2) the importance of Preservation of Living Organisms. Whereas, closing activity was done by doing a classroom discussion, the teacher concluded the result of the discussion from the students’ activities as stabilization. The process of the activities were as follows:

MEETING I

a) Apperception and appreciation in 10 minutes by the teacher with the explanation according to the topic to be discussed namely the Preservation of Living Organisms with the sub topics: (1) Endangered Animals and Plants and (2) The Importance of Preservation of Living Organisms.

b) Main activity, the students were given opportunities to deliver their opinions according to the topic to be discussed based on their experiences in the society.
c) The students were grouped based on their ability levels and gender. Each group consisted of 7 students out of 28 students. Groups 1 and 2 discussed the problems based on the first indicator which was the Preservation of Living Organisms with the sub topic: (1) Endangered Animals and Plants.

d) Each group discussed by delivering the members’ experiences in the society related to the problem discussed.

e) The group discussion was done, then was continued with the class discussion which was guided by the representative of the students, by delivering the results of the group discussion and the other groups responded and gave examples related to the discussion delivered by the other group. In this first meeting, groups 1 and 2 got the chance to present their discussion results with the topic of Preservation of Living Organism with the sub topic: (1) Endangered Animals and Plants.

f) The teacher monitored the responds and critics from the students.

g) The discussion was done, then the closing activity was carried out for 10 minutes. This activity was the concluding of the learning results through the discussion and finally was closed by the teacher.

**Meeting II**

a. The main activity, the students were given the chance to give responds related to the topic discussed.

b. Continuing the group discussion by discussing the topic of Preservation of Living Organisms with the sub topic: (2) The Importance of Preservation of Living Organisms.

c. Each group discussed by delivering the members’ experiences in the society related to the problem discussed.

d. The group discussion was done, then was continued with the class discussion which was guided by the representative of the students, by delivering the results of the group discussion and the other groups responded and gave examples related to the discussion delivered by the other group. In this second meeting, groups 3 and 4 got the chance to present their discussion results with the topic of Preservation of Living Organism with the sub topic: (1) The Importance of Preservation of Living Organisms.

e. The teacher monitored the responds and critics from the students.

f. The discussion was done, then the closing activity was carried out for 10 minutes. This activity was the concluding of the learning results through the discussion and finally was closed by the teacher.

Based on the activities in the cycle 1 above, the researcher conducted the reflection from the results of those activities. Based on the observations in the cycle 1 obtained the findings, as follows: (1) the students were still confused in learning the material delivered by the teacher, (2) the students were afraid of delivering their opinions and (3) the discussion activity did not run well, still dominated by the smart students.
Table 1. Percentage of the Students’ Activeness in the Class Discussion in the Cycle I

<table>
<thead>
<tr>
<th>GROUP</th>
<th>NUMBER OF STUDENTS</th>
<th>ACTIVE STUDENTS</th>
<th>PERCENTAGE</th>
<th>PERCENTAGE OF IMPROVEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>7</td>
<td>2</td>
<td>7.14%</td>
<td>-</td>
</tr>
<tr>
<td>Group 2</td>
<td>7</td>
<td>2</td>
<td>7.14%</td>
<td>-</td>
</tr>
<tr>
<td>Group 3</td>
<td>7</td>
<td>3</td>
<td>10.71%</td>
<td>-</td>
</tr>
<tr>
<td>Group 4</td>
<td>7</td>
<td>2</td>
<td>7.14%</td>
<td>-</td>
</tr>
<tr>
<td>Total of the groups</td>
<td>28</td>
<td>9</td>
<td>32.14%</td>
<td>-</td>
</tr>
</tbody>
</table>

Based on the table of activeness above, it showed that the learning situation in the class was less supportive for the students’ success. Out of 28 students, it was known that only 9 students who were active in the discussion with the percentage of 32.14%.

b. Cycle 2

The main activity of the cycle 2 was acting. This means, the process of learning was already deeper in the teaching and learning by using Jigsaw technique. Generally, the learning activity was done by delivering the materials taught in the learning process. The activity in the cycle 2 reflected the activity in the cycle 1 which had been done the teaching and learning process on the subject of Science Class V. The activities were as follows:

- In this cycle, the action plan was done during the 2 hours meeting with the time allocation 2 x 40 minutes for each meeting. In implementing the learning strategy, the teacher presented the orientation and procedure frameworks of the students as the introduction activity by giving the learning material to be learned. In the main activity of learning, the teacher gave explanations on the purpose of learning Science with the topic of the Preservation of Living Organisms with the sub topic: (1) Endangered Animals and Plants and (2) The Importance of Preservation of Living Organisms. While the closing activity, the students with the class discussion along with the teacher concluded the results of discussion from the students’ activities as the stabilization. The activity processes were as follows:

  Meeting 1
  a) Apperception and appreciation in 10 minutes by the teacher with the explanation according to the topic to be discussed namely the Preservation of Living Organisms with the sub topic: (1) Endangered Animals and Plants and (2) The Importance of Preservation of Living Organisms.
  b) Main activity, the students were given opportunities to deliver their opinions according to the topic to be discussed based on their experiences in the society.
  c) The students were group similarly as the groups in the cycle 1, based on the ability levels and gender. Each group consisted of 7 students out of 28 students. Groups 1 and 2 discussed the problems based on the first indicator which was the Preservation of Living Organisms with the sub topic: (1) Endangered Animals and Plants.
  d) Each group discussed by delivering the members’ experiences in the society related to the problem discussed.
  e) The group discussion was done, then was continued with the class discussion which was guided by the representative of the students, by delivering the results
of the group discussion and the other groups responded and gave examples related to the discussion delivered by the other group. In this first meeting, groups 1 and 2 got the chance to present their discussion results with the topic of Preservation of Living Organism with the sub topic: (1) Endangered Animals and Plants.

f) The teacher monitored the responds and critics from the students. The discussion was done, then the closing activity was carried out for 10 minutes. This activity was the concluding of the learning results through the discussion and finally was closed by the teacher.

Meeting II

a. The main activity, the students were given the chance to give responds related to the topic discussed.

b. Continuing the group discussion by discussing the topic of Preservation of Living Organisms with the sub topic: (2) The Importance of Preservation of Living Organisms.

c. Each group discussed by delivering the members’ experiences in the society related to the problem discussed.

d. The group discussion was done, then was continued with the class discussion which was guided by the representative of the students, by delivering the results of the group discussion and the other groups responded and gave examples related to the discussion delivered by the other group. In this second meeting, groups 3 and 4 got the chance to present their discussion results with the topic of Preservation of Living Organism with the sub topic: (1) The Importance of Preservation of Living Organisms.

e. The teacher monitored the responds and critics from the students.

f. The discussion was done, then the closing activity was carried out for 10 minutes. This activity was the concluding of the learning results through the discussion and finally was closed by the teacher.

After conducting the activities in the cycle 2 above, the researcher conducted the reflection from the results of those activities. Based on the observations in the cycle 2 obtained the findings as follows: (1) some of the students had an improvement on understanding the material given by the teacher compared with the activities in the cycle 1, (2) some of the students started to be encouraged to deliver their opinions and not dominated by the smart students anymore and (3) the discussion activity ran better than in the cycle 1 which was still dominated by the smart students.

Table 2. Percentage of the Students’ Activeness in the Class Discussion in the Cycle 2

<table>
<thead>
<tr>
<th>GROUP</th>
<th>NUMBER OF STUDENTS</th>
<th>ACTIVE STUDENTS</th>
<th>PERCENTAGE</th>
<th>PERCENTAGE OF IMPROVEMENT FROM THE PREVIOUS CYCLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>7</td>
<td>4</td>
<td>14.28%</td>
<td>7.14%</td>
</tr>
<tr>
<td>Group 2</td>
<td>7</td>
<td>3</td>
<td>10.71%</td>
<td>3.57%</td>
</tr>
<tr>
<td>Group 3</td>
<td>7</td>
<td>4</td>
<td>14.28%</td>
<td>3.57%</td>
</tr>
<tr>
<td>Group 4</td>
<td>7</td>
<td>4</td>
<td>14.28%</td>
<td>7.14%</td>
</tr>
</tbody>
</table>
GROUP               NUMBER OF STUDENTS | ACTIVE STUDENTS | PERCENTAGE | PERCENTAGE OF IMPROVEMENT FROM THE PREVIOUS CYCLE
--- | --- | --- | --- | ---
Total of the Groups | 28 | 15 | 53.57% | 21.42%

Based on the table of activeness in the discussion above, it showed that the learning situation experienced the improvement of activeness compared with the activities in the cycle 1. This condition was expected to support the students’ success. Out of 28 students, there were 15 students who were known active with the percentage of 53.57%. This showed that between the cycle 1 and cycle 2, there was an improvement of 6 active students with the percentage of 21.24%.

c. Cycle 3

The main activity of cycle 1 was observing. This means that the activity of the cycle 3 was conducting a set of teaching and learning process by observing and recording the reflection results from the activities of the previous cycle. The activities were as follows:

In this cycle, the action plan was done during the 2 hours meeting with the time allocation 2 x 40 minutes for each meeting. In implementing the learning strategy, the teacher presented the orientation and procedure frameworks of the students as the introduction activity by giving the learning material to be learned. In the main activity of learning, the teacher gave explanations on the purpose of learning Science with the topic of the Preservation of Living Organisms with the sub topic: (1) Endangered Animals and Plants and (2) The Importance of Preservation of Living Organisms. While the closing activity, the students with the class discussion along with the teacher concluded the results of discussion from the students’ activities as the stabilization. The activity processes were as follows:

Meeting I

a. Apperception and appreciation for 10 minutes by the teacher along with an explanation that was in accordance with the material to be discussed, which was Preservation of Living Organisms with sub topics: (1) Endangered Animals and Plants, (2) The Importance of Preservation of Living Organisms.
b. As the main activity, students were given the opportunity to respond or give opinions in accordance with the material discussed based on the experiences they experienced in social life.
c. Students worked in groups according to groups that had been formed in the activities of the previous cycle, groups based on differences in ability and gender.

each group consisted of 7 members from 28 students. Groups 1 and 2 discussed problems in accordance with the first indicator, which was Preservation of Living Organisms with sub topic: (1) Endangered Animals and Plants.
d. Each group conducted a discussion by conveying individual’s experiences in the community in accordance with the problems discussed.
e. After the group discussion was carried out, it was followed by a class discussion that was directly guided by the representatives of students by delivering the results of the group discussion and the other groups jobs was to respond. At this first meeting, groups
1 and 2 presented the results of the discussion, where they discussed the Preservation of Living Organisms with a sub topic: (1) Endangered Animals and Plants.

f. Teacher paid attention to students' responses and critics.

g. After the discussion was over, then proceeded with the closing activity for 10 minutes. This activity was the conclusion of learning and discussion before the teacher closed the activity.

Meeting II

a. In the main activity, students were given the opportunity to respond and give opinions in accordance with the material discussed.

b. Continued the group discussion by discussing the topic of Preservation of Living Organisms with sub topic: (1) The Importance of Preservation of Living Organisms.

c. Each group conducted a discussion by conveying individual’s experiences in the community in accordance with the problems discussed.

d. After the group discussion was carried out, then proceeded with a class discussion which was directly guided by representatives of students by submitting the results of group discussions, to which other groups respond. At this second meeting, group 3 and 4 presented the results of the discussion, which discussed about the Preservation of Living Organisms with a sub topic: (2) The Importance of the Preservation of Living Organisms.

e. Teacher paid attention to students' responses and critics.

f. After the discussion was over, then proceeded with the closing activity for 10 minutes. This activity was the conclusion of learning and discussion before the teacher closed the activity.

Based on the observing activity in the third cycle, the researcher reflected on the results of the activity. Based on observation in cycle 3, the following findings were found: (1) students had made good progress in receiving and capturing material delivered by the teacher, (2) many students had the courage to express their opinions during class discussions, and (3) discussion activities were going well, and delivering opinion was no longer dominated by smart students, even those who were slow, had the ability to express their opinions. This was caused by the teacher’s motivation in this cycle 3 activity, which came from the experience of the reflection results of the activities in the previous cycle.

Table 3. The Percentage of Students’ Activities in Class Discussion in cycle 3

<table>
<thead>
<tr>
<th>GROUP</th>
<th>NUMBER OF STUDENTS</th>
<th>ACTIVE STUDENTS</th>
<th>PERCENTAGE</th>
<th>PERCENTAGE OF IMPROVEMENT FROM THE PREVIOUS CYCLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>7</td>
<td>4</td>
<td>21.42%</td>
<td>3.57%</td>
</tr>
<tr>
<td>Group 2</td>
<td>7</td>
<td>5</td>
<td>17.85%</td>
<td>7.14%</td>
</tr>
<tr>
<td>Group 3</td>
<td>7</td>
<td>5</td>
<td>17.85%</td>
<td>3.57%</td>
</tr>
<tr>
<td>Group 4</td>
<td>7</td>
<td>6</td>
<td>21.42%</td>
<td>7.14%</td>
</tr>
<tr>
<td>Total of the Groups</td>
<td>28</td>
<td>22</td>
<td>78.57%</td>
<td>25.00%</td>
</tr>
</tbody>
</table>
Based on the table of activeness in the discussion, it can be seen that in cycle 3, the activeness had increased compared to the activities in cycles 1 and 2. Such conditions were expected to support the students’ learning success. From 28 students, 22 of them were known to be active in discussions with a percentage of 78.57%. This shows that between the previous cycle activities with this cycle 3, there was an increase (7 more active students) with a percentage of 25.00%.

4. Cycle 4
The main activity in this cycle 4 was reflecting. This means that in this cycle 4 activities, the material studied in the learning process had been reflected based on the previous cycle activities. In this cycle 4, the researcher as a science teacher of class V continued to carry out the learning process. The activities were as follows:

- In this cycle, treatment was carried out for 2 hours of meeting with a time allocation of 2 x 40 minutes per meeting. In implementing the learning strategy, the teacher proposed the orientation and work procedures of students as the opening activity by providing material to be learned. At the main activity, the teacher gave an explanation of the learning objectives of Science with the material about Preservation of Living Organisms with sub topic: (1) Endangered Animals & Plants, and (2) The Importance of the Preservation of Living Organisms. While in the closing activity, students conducted a class discussions with the teacher and concluded the results of the discussion of students’ activities as stabilization. The activity processes are as follows:

Meeting 1

a. Apperception and appreciation for 10 minutes by the teacher along with an explanation that was in accordance with the material to be discussed, which was Preservation of Living Organisms with sub topics: (1) Endangered Animals and Plants, (2) The Importance of Preservation of Living Organisms.

b. As the main activity, students were given the opportunity to respond or give opinions in accordance with the material discussed based on the experiences they experienced in social life.

c. Students were grouped based on differences in ability and gender. Each group consisted of 7 members from 28 students. Groups 1 and 2 discussed problems in accordance with the first indicator, which was Preservation of Living Organisms with sub topic: (1) Endangered Animals and Plants.

d. Each group conducted a discussion by conveying individual’s experiences in the community in accordance with the problems discussed.

e. After the group discussion was carried out, it was followed by a class discussion that was directly guided by the representatives of students by delivering the results of the group discussion and the other groups jobs was to respond. At this first meeting, groups 1 and 2 presented the results of the discussion, where they discussed the Preservation of Living Organisms with a sub topic: (1) Endangered Animals and Plants.

f. Teacher paid attention to students' responses and critics.

g. After the discussion was over, then proceeded with the closing activity for 10 minutes. This activity was the conclusion of learning and discussion before the teacher closed the activity.
Meeting II
a. In the main activity, students were given the opportunity to respond and give opinions in accordance with the material discussed.
b. Continued the group discussion by discussing the topic of Preservation of Living Organisms with sub topic: (1) The Importance of Preservation of Living Organisms.
c. Each group conducted a discussion by conveying individual’s experiences in the community in accordance with the problems discussed.
d. After the group discussion was carried out, then proceeded with a class discussion which was directly guided by representatives of students by submitting the results of group discussions, to which other groups respond. At this second meeting, group 3 and 4 presented the results of the discussion, which discussed about the Preservation of Living Organisms with a sub topic: (2) The Importance of the Preservation of Living Organisms.
e. Teacher paid attention to students' responses and critics.
f. After the discussion was over, then proceeded with the closing activity for 10 minutes. This activity was the conclusion of learning and discussion before the teacher closed the activity.

The researcher carried out activities in cycle 4 based on reflections from the results of activities in the previous cycle. Based on the results of observations in the previous cycle and in cycle 4 found the following findings: (1) students had understood and were ready to learn the material delivered by the teacher, (2) most of the students were brave to express their opinions during class discussions, and (3) the activities were going well and fun.

Table 4. The Percentage of Students’ Activities in Class Discussion in cycle 4

<table>
<thead>
<tr>
<th>GROUP</th>
<th>NUMB</th>
<th>ACTIV</th>
<th>PERCENTAGE</th>
<th>PERCENTAGE OF IMPROVEMENT FROM PREVIOUS CYCLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ER OF</td>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>STUDENTS</td>
<td>STUDENTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 1</td>
<td>7</td>
<td>7</td>
<td>25.00%</td>
<td>3.58%</td>
</tr>
<tr>
<td>Group 2</td>
<td>7</td>
<td>6</td>
<td>21.42%</td>
<td>3.57%</td>
</tr>
<tr>
<td>Group 3</td>
<td>7</td>
<td>6</td>
<td>21.42%</td>
<td>3.57%</td>
</tr>
<tr>
<td>Group 4</td>
<td>7</td>
<td>7</td>
<td>25.00%</td>
<td>3.58%</td>
</tr>
<tr>
<td>Total of</td>
<td>28</td>
<td>26</td>
<td>92.85%</td>
<td>14.28%</td>
</tr>
<tr>
<td>the Groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on the table of activeness in the discussion, it can be seen that the activeness had increased significantly compared to the previous cycles. Such conditions were expected to support the students’ learning success in increasing students’ motivation and achievement in learning. From 28 students, 26 of them were known to be active in discussions with a percentage of 92.85%. This shows that between the previous cycle activities with this cycle 4, there was an increase (4 more active students) with a percentage of 14.28%.
**Table 5.** The Frequency of Students’ Achievements in Class V in Semester I at SDN 2 Tribungan, Mangaran District, Situbondo Regency in the Academic Year 2018/2019

<table>
<thead>
<tr>
<th>No</th>
<th>Score Interval</th>
<th>Frequency</th>
<th>Frequency (%)</th>
<th>The Category on Learning Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>9.01 – 10.00</td>
<td>3</td>
<td>10.71 %</td>
<td>Excellent</td>
</tr>
<tr>
<td>2.</td>
<td>8.01 – 9.00</td>
<td>11</td>
<td>39.28 %</td>
<td>High</td>
</tr>
<tr>
<td>3.</td>
<td>7.01 – 8.00</td>
<td>10</td>
<td>35.71 %</td>
<td>High enough</td>
</tr>
<tr>
<td>4.</td>
<td>6.01 – 7.00</td>
<td>4</td>
<td>14.28 %</td>
<td>Moderate</td>
</tr>
<tr>
<td>5.</td>
<td>5.01 – 6.00</td>
<td>0</td>
<td>0.00 %</td>
<td>Fair</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>28</strong></td>
<td><strong>100 %</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As presented on the data frequency above, the lowest score on the score interval was 6.01 – 7.00 with frequency of 4 and its percentage was 14.28%, whilst the highest interval score was 9.01 – 10.00 with frequency of 3 and its percentage was 10.71%. The data revealed that the scores which were above the average (high score) was 7.01 – 8.00 with frequency of 10 and its percentage was 35.71%, while the score of 8.01 – 9.00 got frequency of 11 and its percentage reached 39.28%. In addition, the moderate category was on 6.01 – 7.00 with frequency of 4 and its percentage was 14.28%. That score was classified into fair or less and none of students obtained it. The percentage of learning achievements showed that the students’ achievements positively increased by using Jigsaw technique as the learning strategy. It means that this strategy was able to make the students feel motivated and it affected their learning achievements. The result of 10.71% was excellent score, 39.28% as high score, 35.71% was High enough, and 14.28% was moderate. The improvement on students’ learning achievements showed that it was affected by learning strategy given by the teacher. Regarding the way the teacher enriched the students' interests and motivations in learning, he implemented the appropriate strategy; thus, it can be concluded that the learning achievement was categorized into good if the strategy given by the learning teacher was also good.

Based on the research procedures and the results of classroom action research in learning achievements, there were several roles that teachers should possess to implement the learning strategy through Jigsaw technique, covering: (1) providing the atmosphere in which the students felt free to think and guess and put aside the feeling of fear in being criticized, (2) explaining and illustrating how the model was implemented, guiding the students’ process skills, helping the students state and analyze hypotheses, and articulating the students’ thinking, (3) taking notes to observe the students’ decision making in proving whether or not the hypothesis was accepted. Regarding the teacher's activities in teaching the students, there were three important steps that must be done, (1) the teacher encouraged the students to think in the form of hypothesis, (2) the teacher guided the way the students were thinking, for instance the way they proved that whether or not the hypothesis was accepted, (3) The teacher told the students to explain the reasons behind the hypothesis verification.

Related to some of the previous statements and this class action research which was intended to improve the students’ achievements by using Jigsaw technique as learning strategy, the reflection they must understand was realizing that the technique was able to be used as a learning strategy which encouraged the students to be active and creative, thus it enabled them to bring up their motivation during the the learning process and at the end, they got the optimal learning result which was in line with
learning objectives. However, the reliability of this learning technique still needs to be proven by several repetitions with different objects, therefore the experiment and implementation of this model need to be carried out by various parties, especially in the teaching field.

Through this learning process, there were several things that the teacher could do to improve the students’ motivation optimally, involving:
1. Students would learn on how to improve their motivation from the teacher. It was carried out by the teacher who: (a) provided fun activities, (b) focused on what they wanted, (c) built understanding through what was known, (d) provided a classroom atmosphere that supported and stimulated their learning, (e) delivered the activities related to the learning objectives, (f) provided the challenging activities, (g) provided them the activities that would make them success, and (h) gave a reward for each student who obtained the achievement.

2. Since every student possessed his own learning style, the teacher was required to: (a) try to find out the students’ strengths and weaknesses, (b) plan an activity which is suitable to the the level of students’ abilities, (c) foster the students' knowledge and skills learnt at home or school, and (d) plan and note the students’ progress.

3. The students learnt independently and through collaboration; thus, a teacher must provide them opportunities to: (a) learn within groups so their cooperation was trained, (b) learn classically in which it gave them opportunities to determine their ideas (c) give them the opportunity to work on their activities independently, (d) involve them in making decisions about the activities being worked on, and (e) learn how to learn.

4. Students needed different contexts and situations while learning, a teacher must: (a) provide and use a variety of teaching instruments, (b) have the students learn Science in various places and opportunities, (c) teach the students to use Science for various needs, (d) develop the students' attitudes to use Science as an instrument in solving problems both at home and school, and (e) help the students got some reflections on Science activities.

Based on the results of this action research, the reflections obtained during the process of learning activities were:

1. Based on the observation in cycle 1, it was found that: (a) the students still felt confused in learning the material given by the teacher, (b) the students felt afraid to express their opinions, and (c) discussion activities did not run well as smart students still dominated it.

2. Based on the observation in cycle 2, it was found that: (a) the students' understanding on the contents delivered by teacher sucessfully improved if compared to the activities done in cycle 1, (b) some students started expressing their opinions and it was no longer dominated by the smart ones, and (c) the discussion activities was getting better compared to the activities conducted in cycle 1, which was still dominated by smart students.

3. Based on the observation in cycle 3, it was found that: (a) the students made good progress in taking and understanding the material given by the teacher, (b) most students were willing to express their opinions during the class discussion, and (c) the discussion activities was well-conducted, and the opinions were no longer dominated by smart students, whose whose ability was in average began to express their opinions. All of these were supported by: the motivation given by the teacher through the activity done in cycle 3, from the reflection results on previous cycle.
4. Based on the observation conducted in the previous cycle and cycle 4, it was found that: (a) the students understood and were all ready to learn the material delivered by the teacher, (b) most of the students were willing to express their opinions during the discussion, and (c) the activities ran well, the classroom atmosphere was more alive, so that the learning process was fun.

The implementation of classroom action research conducted by researcher revealed that learning through Jigsaw technique improved Learning Achievement in Science Subjects on the students in Class V in Semester 1 at SDN 2 Tribungan, Mangaran District, Situbondo Regency. It was shown by the student's achievement in studying the Science subjects on the preservation of Living Organisms under the sub topic of: (1) Endangered Animals and Plants, and (2) The Importance of Preservation of Living Organisms.

The learning achievements showed the significant results through the use of Jigsaw technique. The students of class V in semester 1 at SDN 2 Trubangan, Mangaran District, Situbondo Regency revealed that their learning achievements successfully increased by using Jigsaw strategy in Science subject. This action researcher took a further step on discussing some of the focuses that were formulated, including:

In fact, concerning education field especially at SDN 2 Tribungan still implemented the conventional method in teaching and learning process on Science subject. It means that the activities carried out by the teacher did not attract the students' interest in getting th learning achievements optimally. Thus, the teacher needed to have an effort in making the students’ learning achievements of class V in semester 1 and from the other classes at SDN 2 Tribungan, Mangaran District, Situbondo Regency improve, it was by improving the teacher’s teaching quality and using variety of learning strategies. One of the strategies was Jigsaw technique.

The use of Jigsaw technique during teaching and learning process was successfully carried out as it gave a positive effect on the students’ learning achievements, especially for the students of Class V at SDN 2 Tribungan, Mangaran District, Situbondo Regency.

This result was proved by the researcher who took the data from the result of classroom action research. The result indicated that there was a significant increase on the students’ learning achievements in learning.

Based on the above explanation which was related to the research focus, it showed that there was very positive impact by using Jigsaw technique for the students in Science learning. It ensured that the more creative the teacher used the strategy for teaching and learning activities, the more the students’ motivations in learning would be increased. This chapter focused on: (a) conclusion, and (b) suggestions that were based on the research entitled Improving The Students’ Learning Achievements by using Jigsaw Technique in Science Learning in Class V, semester I at SDN 2 Tribungan, Mangaran District, Situbondo Regency.

CONCLUSION

Based on the results of this research, the formulated conclusions were:

a. The learning strategy through Jigsaw technique was able to improve the students’ learning achievements of Class V in semester 1 at SDN 2 tribungan, Mangaran District, Situbondo Regency. Their learning improvements were actually affected by the learning
strategy used by the teacher. The high learning motivation affected their high learning achievements as well.
b. The improvement of students’ learning achievements was proved on the activity results done in cycle 4. Based on the observation carried out in the previous cycle, cycle 4 showed that: (1) the students understood and were all ready to learn the material given by the teacher, (2) most of the students were no longer afraid in expressing their opinions during class discussions, and (3) the activities was well-conducted, the class atmosphere was more alive, in which it made the learning process interesting.
c. Jigsaw technique belonged to a component of Context Teaching and Learning (CTL). This strategy was able to be applied to all subjects.
d. The learning strategy through Jigsaw technique improved the students’ achievement of class V in semester 1 at SDN 2 Tribungan, Mangaran District, Situbondo Regency on Science learning.

REFERENCES


