Genius Learning and Think Talk Write Reviewed from Junior High School Students’ Creativity

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Abstract

The study aimed to obtain information about comparing student learning outcomes, given the genius learning strategy and think talk write in terms of student creativity. The study was a quasi-experimental design and the research design was a 2x3 factorial design. The population in this study were all students of VIII grade at SMP Negeri 1 Sepauk, with a sample of VIIIC and VIIID grades who were randomly selected using cluster random sampling technique. Based on the results of data processing, the following conclusions were obtained: (1) The learning outcomes between students who were given a genius learning strategy were relatively the same as think talk write, both in general and based on the student's creativity category, (2) The learning outcomes between students who had relatively high creativity the same as students who have medium or low creativity, and students with moderate creativity have relatively the same learning outcomes as students who have low creativity both in general and in terms of learning strategies.

Keywords: Creativity, Genius Learning, Think Talk Write

INTRODUCTION

Increasing human resources is the goal of every country because to support the growth and development of a country, of course, it requires quality human resources. It cannot be denied that a quality education system is a way to increase human resources in every country. In the world of education, many important things need to be improved, one of which is the quality of the teaching and learning process carried out in schools. Improving the quality of learning is a task for every school, especially for a teacher. Every teacher's expectation from the learning process certainly wants students to obtain satisfactory learning achievements and learning outcomes above the completeness standard.

Mathematics is a lesson that students learn at every level of education. Referring to the Minister of National Education Regulation number 22 of 2006 that the objectives of learning mathematics in schools include (a) students can understand mathematical concepts, (b) students can use reasoning in mathematics, (c) students can solve math problems, (d) students can communicate the idea, (e) students have an attitude of appreciating the usefulness of mathematics (Depdiknas, 2006).
However, the conditions regarding mathematics learning in the field are still not in line with the government's hopes. Based on the results at SMPN 1 Sepauk, information on several facts related to student learning outcomes in mathematics is still in the low category. The students' scores indicate this after taking the math test that the researcher gave in VIII grade at SMPN 1 Sepauk, the percentage of students who do not fulfill learning completeness is 68%. Among 37 students, there were 25 students whose scores had not reached the minimum standard of 70, with an overall average of 46.25.

The learning process of mathematics in the classroom is also taught abstractly and still carries out direct learning, namely learning that positions the teacher as the center of learning and places students as learning objects that make students only listeners of all material explanations from the teacher without knowing what the meaning and benefits they get from learning math. In learning activities, the teacher's opportunities so that students participate in each learning stage are still minimal, causing learning activities in class to be not optimal. Implementing learning strategies that do not support students' mathematical abilities may be the cause of the inadequate mathematical abilities obtained by students.

Purwanto (2014: 54) revealed the definition of learning outcomes as a change in behavior obtained by individuals and in line with learning objectives after the learning process is complete. Furthermore, Sudjana (2011: 22) stated that learning outcomes are abilities that students get after participating in the learning process. Clarification of Bloom's learning outcomes is divided into affective, cognitive, and psychomotor aspects that form the national education system's goals.

Based on the researchers' interviews with a number of students, in general, students admitted that they were less interested in learning mathematics and thought mathematics was difficult and boring because they only listened to the teacher delivering the material. Most students also admitted that they were still afraid of the teacher. When learning activities occurred, students did not dare to express their ignorance and asked the teacher, resulting in a lack of interaction between teacher and students.

In overcoming the problems stated, a solution is needed that can make learning activities more effective to attract children's interest in learning mathematics and is expected to influence student learning outcomes positively. Implementing an appropriate learning strategy to make teaching and learning activities more efficient, effective and comfortable for students is a way that teachers can implement in schools. The strategy used must be in accordance with the subject to be studied because implementing the right strategy will support learning objectives. Learning strategies that are considered by researchers to solve the above problems are genius learning and think talk write (TTW).

According to Gunawan (2012: 2), genius learning is a series of practical approaches to maximize the learning process results. Learning methods that are in line with students' character and personality can maximize the achievement of learning outcomes. Knowledge from various disciplines, such as knowledge of motivation, learning styles, emotions, personality, learning styles, feelings, intelligence, self-concept, note-taking techniques, reading, and various other learning techniques are used to achieve this approach. According to Gunawan (2012: 6), genius learning is the center of learning activities to encourage them to understand their abilities according to their learning styles.

According to Huda (2014: 224), think talk write is a learning strategy that seeks to help students practice spoken language and write it correctly. This strategy facilitates students in communicating their thoughts and ideas in discussion activities with their group colleagues after going through thinking activities, reflecting on, and constructing main ideas about the material being studied. Learning with a think talk write strategy can help students analyze a problem, understand the problem well, participate in group discussions to discuss the problem, and write down the learning results obtained in their language. At each learning stage, the teacher's role is needed to guide and support students to build their thinking, speaking, and writing abilities.

In addition to learning strategy factors, student creativity factors can also affect student learning outcomes. According to Baron (Ngalimun, 2013: 44), creativity is a person's ability to produce something new. In addition, Munandar (Ngalimun, 2013: 45) also suggests a definition of
creativity, namely the ability to show that a person has original thinking, flexibility, fluency, and the ability to collaborate on ideas. Therefore, teachers need to consider aspects of student creativity in the learning process at school so that each stage of learning carried out can properly support students' mathematical abilities. Creativity as a whole personality is the result of interaction with the environment around it.

Yudi Darma and Imam Sujadi (2014), in their research, revealed that students with higher creativity would have better-solving abilities. In addition, Abu Dahmadi (Vahlia, 2013) also expressed the same thing that in the learning process, children in the creative category are more able to find problems and solve these problems. It indicated that students will obtain better learning outcomes with high creativity because they easily absorb the material being studied, and their learning activities are more optimal.

Based on the things that have been stated, this study aimed to obtain information about the comparison of learning strategies for genius learning with think talk writing in terms of students' creativity in straight line equation studies.

METHOD

The research method was experimental and used a quasi-experimental research design with a factorial design research design that was 2x3 factorial design. The study aimed to obtain information about the effect of learning strategies, namely the genius learning strategy in experimental group 1 and think talk write in experimental group 2 in terms of student creativity on learning outcomes.

The school used as a research location was SMPN 1 Sepauk in VIII grade. The population was all students in VIII grade divided into VIIIA, VIIIB, VIIIC, VIIID grades. The homogeneity of the four classes was tested by using the Bartlett test first. The sample to be used for research purposes was determined randomly by applying the cluster random sampling technique so that VIIIC and VIII D grade were selected as experimental group 1 and 2.

The questionnaire, documentation, and test techniques were techniques for data collection used in this study. In implementing these techniques, the researcher carried out the documentation technique by collecting data on the test scores obtained from the mathematics teacher to obtain data on students' initial abilities. The questionnaire technique was carried out before implementing the two learning strategies to obtain data on the student's creativity category. While the test technique was carried out after implementing the learning aims to obtain data on learning outcomes.

Before carrying out the research, a balance test needed to be carried out on students 'initial ability data with t-test analysis to determine whether the initial state of students' mathematical abilities in both classes is balanced before the learning is carried out. Analysis of the prerequisite test consisting of normality and homogeneity tests using the Lillifors and Bartlett method was carried out first. If the prerequisite test has been met, a balance statistical test and variance analysis can be carried out. Furthermore, to answer the hypothesis in this study, the statistical test of two-way variance analysis of different cells was used to analyze students' learning outcome data. Suppose the results conclude that H0 is rejected to determine which learning outcomes are better in each category. In that case, a further test will be carried out, namely the multiple comparability test on student learning outcomes using the Schefee test.

RESULTS AND DISCUSSIONS

Students' Initial Ability and Balance Analysis

To test the experimental group balance, the data used are data about the students' initial abilities in the experimental group one (genius learning) and the second experiment group (think talk write). Based on the prerequisite test results that have been carried out, the sample has met the
requirements because the variance is homogeneous, and the data distribution is normal. Because the prerequisite test has been completed, then the balance test can be carried out. From the balance test results using the t-test, it can be concluded that the two groups have a balanced initial ability. Because the initial state of the two groups is balanced, analysis of variance can be carried out.

Table 1. Students' Initial Abilities

<table>
<thead>
<tr>
<th>Groups</th>
<th>N</th>
<th>X_{min}</th>
<th>X_{max}</th>
<th>X</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genius Learning</td>
<td>40</td>
<td>30</td>
<td>90</td>
<td>56,50</td>
<td>13,45</td>
</tr>
<tr>
<td>Think Talk Write</td>
<td>39</td>
<td>30</td>
<td>95</td>
<td>56,54</td>
<td>16,31</td>
</tr>
</tbody>
</table>

Student Learning Outcomes Data and Analysis of Variance

In testing the hypothesis, the data used were student learning outcomes. From the test results regarding homogeneity and normality, it can be concluded that the sample has a homogeneous variance, and the data distribution is normally distributed. Data on student learning outcomes after learning are presented as follows:

Table 2. Student Learning Outcomes in the Learning Strategy Category

<table>
<thead>
<tr>
<th>Learning Strategy</th>
<th>N</th>
<th>X_{min}</th>
<th>X_{max}</th>
<th>\bar{X}</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genius Learning</td>
<td>40</td>
<td>55</td>
<td>100</td>
<td>73,50</td>
<td>11,22</td>
</tr>
<tr>
<td>Think Talk Write</td>
<td>39</td>
<td>50</td>
<td>100</td>
<td>73,076</td>
<td>10,798</td>
</tr>
</tbody>
</table>

Table 3. Student Learning Outcomes in the Creativity Category

<table>
<thead>
<tr>
<th>Creativity</th>
<th>N</th>
<th>X_{min}</th>
<th>X_{max}</th>
<th>\bar{X}</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>23</td>
<td>50</td>
<td>100</td>
<td>74,13</td>
<td>14,03</td>
</tr>
<tr>
<td>Medium</td>
<td>26</td>
<td>60</td>
<td>100</td>
<td>74,038</td>
<td>8,83</td>
</tr>
<tr>
<td>Low</td>
<td>30</td>
<td>55</td>
<td>90</td>
<td>72,00</td>
<td>10,137</td>
</tr>
</tbody>
</table>

The following shows the data regarding the average student learning outcomes after working on the post-test questions in the two experimental groups based on student learning strategies and creativity.

Fig.1 Average Score of Students Learning Outcomes in Each Category
The scores obtained by the students in working on the posttest questions were then processed by data processing using two-way variance analysis of different cells. The results of the tests that have been carried out are as follows:

<table>
<thead>
<tr>
<th>Sources</th>
<th>F</th>
<th>Fa</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Strategy (A)</td>
<td>0.017</td>
<td>3.972</td>
<td>H₀_A accepted</td>
</tr>
<tr>
<td>Creativity (B)</td>
<td>0.282</td>
<td>3.122</td>
<td>H₀_B accepted</td>
</tr>
<tr>
<td>Interaction (AB)</td>
<td>0.029</td>
<td>3.122</td>
<td>H₀_AB accepted</td>
</tr>
</tbody>
</table>

In the first hypothesis, from Table 4, it can be seen that in the learning strategy category (column A), F_a = 0.017, and F_a = 3.972. Based on the criteria for testing the first hypothesis, student learning outcomes after participating in learning with learning strategies genius learning and think talk write are said to be different if F_a > F_a. Because F_a < F_a (0.017 < 3.972), it can be concluded that there is no difference in student learning outcomes who are given genius learning strategies and students who are given think talk write learning.

Referring to the theoretical study, it is known that the two learning strategies, namely genius learning and think talk write in learning, both seek to improve student learning outcomes. In line with Gunawan (2012: 2), knowledge from various disciplines is used to implement genius learning strategies that seek to improve the results of the learning process. The knowledge includes knowledge about working memory and brain systems, learning interests, feelings, emotions, personality, student learning styles, note-taking techniques, reading techniques, and others.

In genius learning strategy, learning activities begin by creating a conducive learning space to feel comfortable in learning. Children are then required to take an active role during the learning process and develop their thinking abilities individually. Children can communicate and interact with their peers in small groups to determine answers to a problem at hand and present the results to the class. Furthermore, the teacher directs the students to get the correct answers to find out the mistakes made by each group and improve their understanding of the material being studied.

Furthermore, according to Hamdayama (2014: 221), the learning strategy of think talk write can improve students' conceptual understanding because it facilitates students in constructing their knowledge. In addition, this strategy also helps students express their thoughts and ideas in writing and understand the material being studied. Students are trained to write the results of their group discussions into systematic writing.

In the second hypothesis, from Table 4, it can be seen that in the student creativity category (column B), F_b = 0.282, and F_b = 3.122. Based on the criteria for testing the second hypothesis, the learning outcomes of students with high, medium, and low creativity are said to be different if F_b > F_b. Because F_b < F_b (0.282 < 3.122), it can be concluded that there is no difference between student learning outcomes with high, medium, and low creativity in SMPN 1 Sepauk.

In learning activities with the genius learning strategy and think talk write, five students were selected heterogeneously. Students with various creativity levels could communicate and interact with their peers to understand the material being studied and solve related problems. The teacher could control each group's activities and direct students to the correct answer. Students with low creativity would feel challenged to understand the material presented with the help of students whose creativity was good so that it allowed them to improve their learning outcomes.
These results are similar to the research results by Nurmaningsih (2013), which concluded that in each category, the level of creativity, both high, medium and low, obtained similar learning achievement. Furthermore, Effendi (2014) also concluded that at each level of creativity, high, medium, and low, the learning outcomes were not different.

From Table 4 it can be seen that in the interaction (column AB), \( F_{AB} = 0.029 \) and \( F_{\alpha} = 3.122 \). Based on the testing criteria, it is said that there is an interaction between learning strategies and creativity on student learning outcomes in straight line equation learning if \( F_{AB} > F_{\alpha} \). Because \( F_{AB} < F_{\alpha} (0.029 < 3.122) \) means that \( H_{0AB} \) is accepted, it can be concluded that there is no interaction between learning strategies (genius learning and think talk write) and student creativity (high, medium, and low) on student learning outcomes.

In the third hypothesis, because it is known that there is no interaction, it can be concluded that in each category of learning strategy, both genius learning and think talk write, the learning outcomes of students who have high creativity are relatively the same as students with moderate or low levels of creativity, and the results learning of students who have moderate creativity is relatively the same as the learning outcomes of students who have low creativity both in general and based on the creativity category.

Then in the fourth hypothesis, because it is known that there is no interaction, it can be concluded that in each category of low, medium, and high student creativity levels, the learning outcomes of students who are given the genius learning strategy are relatively the same as the talk write learning strategy. Many aspects influence the acquisition of student learning outcomes, including external and internal aspects of students. In learning, many factors influence student learning outcomes, for example, family factors, intelligence factors, and others. The two learning strategies applied are relatively new to students. Students have high enthusiasm and interest during the learning process, especially in group discussion activities, which are important for teachers to transfer knowledge to children.

Based on the theoretical study, it can be seen that the stages of the two learning strategies require students to participate actively in every learning activity, improve their mathematical skills, communicate and work together in groups to understand the subjects being studied and discuss to solve problems faced with the group so that in this learning activity can maximize the learning outcomes of children. In the implementation of this research, students' learning outcomes can also be influenced by other independent variables such as learning facilities and infrastructure, learning styles, learning activities, motivation, learning independence, and so on.

CONCLUSIONS

Based on the results of research data processing, the conclusions in this study are:
1. The learning outcomes between students who are given genius learning strategies are relatively the same as students who are given think talk write learning strategies, both in general and based on their creativity category.
2. The learning outcomes of students who have high creativity are relatively the same as students who have medium or low creativity, and the learning outcomes of students who have moderate creativity are relatively the same as students who have low creativity, both in terms of learning strategies (genius learning and think talk write) as well as in general.

REFERENCES


