

## **EFFECTIVENESS OF MIND MAP TECHNIQUE IN IMPROVING ACTIVITY AND LEARNING OUTCOMES OF STUDENTS**

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### **ABSTRACT**

This study aims to improve the activities and learning outcomes of students by using the technique of mind maps on the material of Basic Knowledge of Geography in Public High School 2 of Binjai. The method used in the data collection is: 1) Observations on the participants, in which researcher act as implementers and directly involved in research activities. 2) Observations on the learning activities of students, and 3) testing of the learning outcomes of students in the form of multiple choice, and assessment of student skills in making notes with a mind map technique in class X-4. The data analysis technique used is descriptive comparative analysis and critical analysis. This study shows that the use of the technique of mind maps on the material of Basic Knowledge Of Geography is very effective in improving activity and learning outcomes of students in class X-4 of the Public High School 2 of Binjai.

**Keywords:** *Mind Map, Learning Activity, Learning Outcomes*

### **I. INTRODUCTION**

Based on interviews with a geography teacher at Public High School 2 of Binjai, Dartina Ginting, S. Pd. It transpired that there were several reasons for doing this research. *First*, from a list of set values appears that the achievement of the learning outcomes of students are less satisfactory because nearly 65% of students are only able to achieve an average score of 65, while learning graduation standards set by the school should reach 70.

*Second*, after observing it is known that in learning, learners are less active in receiving the subject matter, because of the geography learning approach applied by the teacher is still conventional or centered on the teacher, and only use the lecture method so that the teacher becomes a very dominant factor in the learning process that resulted in students feel bored, lazy when told to take notes or summarize the material already described and lack of interest in participating in learning.

It is also presented by<sup>25</sup>, the impression is hard and the lack of student interest in learning in general due to the teaching in schools is dominated by a way of learning by memorization through lectures, notes and discussion without significance that is so boring. This will have an impact on students' understanding of separate, no relation to one another. Selection of a good learning method can influence the success in improving learning outcomes of students<sup>26</sup>. In addition, the application of the appropriate and effective learning strategies in the classroom will empower the potential of the students.<sup>27</sup>

In the study, the role that teachers play is very crucial in the success of students. Teachers should be able to encourage learners to be able to construct their own knowledge through a variety of learning activities so that learning more meaningful. According to Ausubel<sup>28</sup> meaningful learning is influenced by factors of cognitive, stability and clarity of knowledge in a specific subject areas and at certain times.

Buzan<sup>29</sup> stated that the mind map is the easiest way to embed information into the brain, and also to retrieve information from the brain. <sup>30</sup> define a mind map as a "kind of graphic organization that can show relationships between concepts." Further<sup>31</sup> says that a mind map is to serve as a tool of interpretation so that the meaning of what is unique is raised.

Reconstruction of knowledge is greatly influenced by prior knowledge and assimilation processes or cognitive accommodation of students. According <sup>32</sup>mind map is a way to express things in mind through a record that describes the relationship between words, colors, and images so that the material can be understood and remembered.

The material of Basic Knowledge Of Geography is the study about the concepts, definitions, approaches, principles, theories, and facts or natural phenomena that occur on earth whose object is difficult to be demonstrated directly in front of the students.

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<sup>25</sup> (Aritonang, 2008:11-21)

<sup>26</sup> (Sagala, 2009: 68)

<sup>27</sup> (Medriati, 2011: 57)

<sup>28</sup> (Dahar Wilis Ratna, 2006: 54)

<sup>29</sup> (Buzan Tony, 2010: 54)

<sup>30</sup> (Nesbit and Adesope, 2006 : 209-230)

<sup>31</sup> (Ibrahim & Widodo, 2013:57)

<sup>32</sup> (Sumarmi, 2012 : 77)

The good and effective note can help students to remember details about the key points, to understand the main concepts and see their interrelationships<sup>33</sup>.

## **II. THE RESEARCH METHOD**

The research was conducted at the Public High School 2 of Binjai located at Jalan Padang No. 8 Urban Village Rambung in South Binjai District by using the Classroom Action Research. This study starts from the planning, action, observation, reflection, and back to planning for action. The researcher act as an observer and teacher of the field of study of geography act as executor of the action. The research was conducted over 2 months i.e. from July to August. Data was collected in this study by using the above method of participant observation, assessment through written tests and student records, and documentation study using a comparative descriptive analysis and critical analysis.

1. Observation: This is used to measure the average level of student activity in the learning process using observation sheet. The types of activity were observed: (a) notice, (b) asking, (c) record, (d) respond, (e) excited.
2. Note of students: This is used to view and measure the skills of students to record using a mind map technique.
3. Written Test: This is used to determine the completeness of students' learning outcomes. Before the test is used, a test of Validity and Reliability is first conducted. Preliminary test of the instrument is done in class X-2 used in the study which consists of 40 students. The results of a preliminary test showed that of the 15 questions that are prepared there are five questions that do not meet the requirements so that problem chosen are as many as 10 items, then the reliability testing is done using KR-20. then calculated by using the formula product moment correlation.<sup>34</sup>
4. Documentary study: This is used to obtain data on school pertaining to the research.

## **III. RESULTS AND DISCUSSION**

This study starts from the implementation of the pre-action to find out the problems and obstacles encountered during the learning process. Furthermore, this

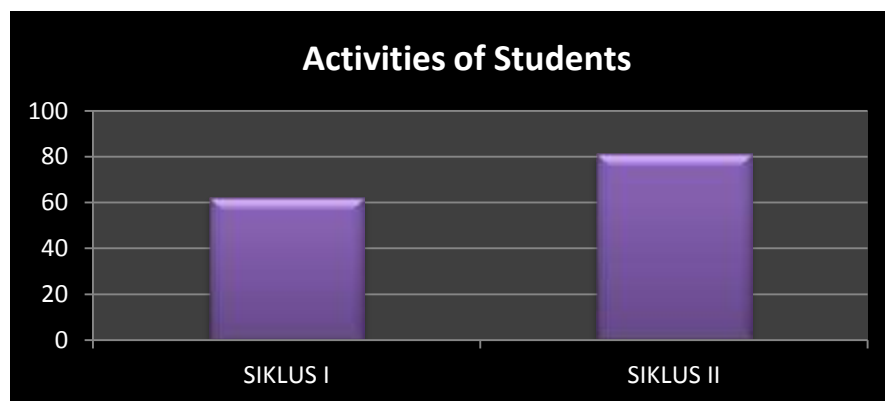
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<sup>33</sup> (Buzan, 2010:54-130)

<sup>34</sup> (Arikunto, 2012)

study was conducted in two cycles, whereby in each cycle the increase in good outcome was always happens. The result of activities in the cycle 1 is better than the pre-action activities. The results of activity in the second cycle are better than that of cycle 1.

The advantages of learning by using a mind map technique looks stronger with an increase in student learning activities during the learning. Based on the results of observations of the learning activities of students it can be concluded that after application of mind map technique in teaching then learning activities of students has increased in each cycle. In the first cycle average of student learning activities in general (classically) was medium which is 1.88 (62.53%). After the activities of the second cycle implemented then there is an increase in the percentage of good results of 2.45 (81.53%). Once students develop a mind map, the students' ability to conclude the materials and review the material are very good. For more details can be seen in the following chart.



**Graph 1. Improvement in Learning Activities of Students  
from Cycle I to Cycle II**

The mind map is a form of records that are not monotonous. The mind map can link new and unique idea with the existing idea so that gave rise to the specific actions undertaken by students.<sup>35</sup> suggests that the human brain works to process information through watching, reading and hearing about a matter that would result in functional relationships between parts (concepts, keywords), not partially separated from one another, nor in the forms of narrative using complete sentence.

The mind map is one of the creative products produced by students in learning

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<sup>35</sup> (Buzan, 2010:54-130)

activities<sup>36</sup>. Optimal learning will occur when students actively participate in learning. Activeness can be seen from some of the students' participation, for example: ask, paying attention, excited, and notes. Student participation is needed in setting goals of learning and teaching activities<sup>37</sup>.

According<sup>38</sup>, when a person uses mind maps, meaning that's when he was using the best capabilities of his brain. Thus, the use of mind maps will guarantee a high level of creativity and will produce the best quality of a lesson. According<sup>39</sup>, the characteristics of creativity can operationally be defined as the ability reflecting the fluency, flexibility, originality in thinking, as well as the ability to elaborate (develop, enrich, and itemize) an idea.

Creativity is one of the provisions stipulated in<sup>40</sup> on National Education Standards article 19 paragraph 1 (a) which states that the process of learning in the educational unit is held in an interactive, inspiring, fun, challenging, motivating learners to participate actively and provide enough space for innovation, creativity, and independence in accordance with their talents, interests, and physical and psychological development of learners.

To be able to prove the existence of a change in the cognitive aspects of students then test the mastery of basic competencies are given by the teacher. Here are the results of assessment tests and student records classically (in general): Based on the results of testing mastery of basic competencies in the activities of the first cycle was found that only 27 students (61.36%) were able to reach the standard of a minimum completeness of 70. In general, the completeness of student learning is still below 85%. At the end of the activity in the second cycle, the achievement of completeness of learning outcomes increased to 40 (90.91%). For more details can be seen in the following graph:

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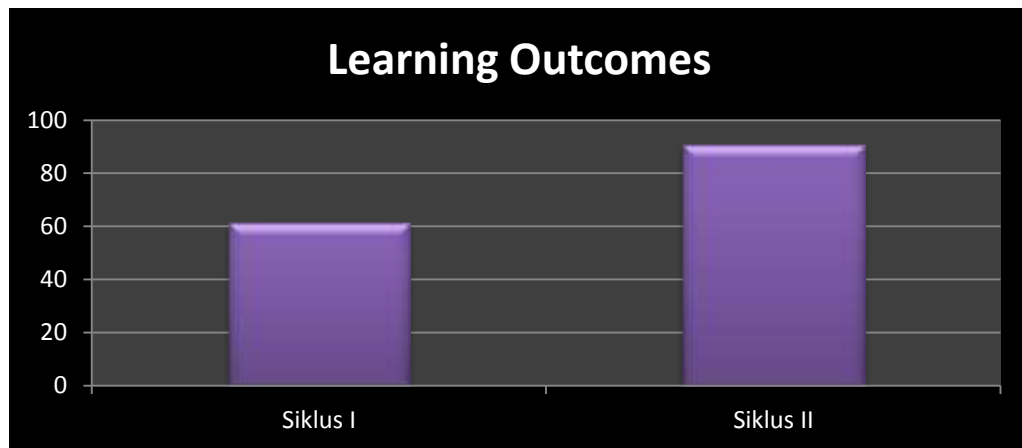
<sup>36</sup> (Rostikawati, 2006)

<sup>37</sup> (Hasibuan & Moedjiono, 2006 : 7)

<sup>38</sup> (Windura, 2008)

<sup>39</sup> (Munandar, 1992)

<sup>40</sup> (Government Regulation No. 19 of 2005)



**Graph 2. Improvement in Percentage of Completeness of Students' Learning Outcomes from Cycle I to Cycle II**

From the above description it appears that there is a consistent relationship between activity and learning outcomes of students in learning that have been implemented. The findings of this study confirms that learning by using a mind map technique is very effectively applied to the material of The material of Basic Knowledge Of geography in improving activity and learning outcomes of students.

#### **IV. DISCUSSION**

Based on the results of the research that has been described above, a mind map is a proven effective in improving activity and learning outcomes of students. The results of this study is in line with research by <sup>41</sup>entitled "*Efforts to Improve Motivation and Learning Outcomes of Geography through Application of Audio Visual Media by Mind Map Method*". The research result Rahayu indicate that the use of the learning model of the Mind Map and audiovisual media in the subjects of geography, especially in the materials on the history of the formation of the earth is a very effective way to improve motivation and learning outcomes of students in class X-6 of the Public High School I of Kroya, Kroya District, Cilacap Regency. <sup>42</sup>conducted a study entitled "*Application of Mind Mapping Technique To Improve Understanding of Concepts in Geography Students of Class XI-2 of the Social Sciences department in Public High School 1 of Rasau Jaya of Kubu Raya Regency*". The results of this study indicate that the mind map technique can improve the understanding of the concept of geography by learners.

This study has similarities and differences with previous studies. Similarity of

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<sup>41</sup>(Rahayu, 2012 : 10-17)

<sup>42</sup>(Harjanti, 2013)

this study with previous studies lies in the focus of research, which are equally examined the application of the technique of mind maps. When linked with Rahayu research, this research has in common with one focus of research by Rahayu, which is about the learning outcome. Nevertheless, this study differs from previous studies. *First*, a study done by Rahayu is in the Public High School 1 of Cilacap, while this study was conducted at the Public High School 2 of Binjai, *Second*, this study does not attempt to analyze the learning motivation of the students, but the learning activities of students. *Third*, this study assesses the skills of students to record using the technique of mind maps.

## **V. CONCLUSIONS AND SUGGESTIONS**

The use of the technique of mind maps on the material of Basic Knowledge Of Geography is proven effective to improve the activities and learning outcomes of students as well as students creativity in learning in the class X-4 of the Public High School 2 of Binjai.

The suggestions in this study is that teachers should apply the technique of making notes using mind maps in learning of geography because this technique is very effective to increase the activity and learning outcomes of students. Teachers should also be able to find and apply the others method and technique which are more innovative to be applied to the process of learning of geography in the future.

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