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THE UTILIZATION OF MIND MAPPING LEARNING MODELS TO GENERATE DISASTER AWARENESS IN EARTHQUAKE MATERIALS IN CLASS X

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Abstract

This study aims to create awareness of disasters in class X students by utilizing the Mind Mapping learning model on disaster material. The method used in this research is descriptive qualitative using literature study analysis. The results obtained from this study are a Mind Mapping learning model that is able to generate awareness of disaster in earthquake material in students. The developed media has never been tested on students so that it becomes a recommendation for further research.

Keywords: Mind Mapping, disaster awareness, geography learning

A. Introduction

Every human being has a different learning style. The tendency is that everyone thinks and learns that they cannot use their right and leftbrain capacities together. The left brain controls scientific activities such as counting and analyzing while the right brain controls activities including imagination and music (Ananggih, G.W. 2013). Humans have all these abilities because every human being has one complete brain (Ananggih, G.W. 2013). Based on

the expert's opinion above, the human brain has many abilities, but this ability will develop or not depending on who develops it. If human's potential is not developed and its potential is explored again, it will be in vain.

Humans have several intelligences, one of the human intelligences is visual-spatial intelligence, which is an intelligence that develops the ability of the human right brain (Ananggih, GW 2013). This intelligence can be assessed using Mind Mapping because the assessment used by the teacher must be adjusted by the intelligence to be developed. The approach used in the assessment is different for each intelligence, on visual-spatial intelligence using a visual-spatial assessment approach, namely an assessment in the form of a concept map or Mind Mapping which can reveal what students know before, during or the learning process as well as after participating in learning activities (Ananggih, GW 2013).

If students use the Mind Mapping learning model, students no longer need to look at text notes to read, but can easily understand in concept form. Students' creativity is honed and not boring to the eye. The concept of Mind Mapping is based on the fact that the human brain consists of one million brain cells or the equivalent of 167 times the number of humans on earth, these brain cells consist of several parts, there is a central part (nucleus) and there are a number of scattered branch parts. in all directions, so that it looks like a tree that grows branches around it (Buzan, T. 2012).

It can clearly be compared between the Mind Map and the city map. A Mind Map center is similar to a city center, the Mind Map center represents the most important ideas. The primary paths spreading out from the center represent the primary thoughts in the thought process, the secondary roads represent secondary thoughts, and so on. Pictures or special shapes can represent areas of interest or certain interesting ideas (Buzan, T. 2012). Just like a road map, a Mind Map will: 1) Provide an overarching view of the subject matter or a large area; 2) Allows us to plan routes or make choices and know where we are going and where we are; 3) Gather a large amount of data somewhere; 4) Encourage problem solving by letting us see new creative breakthrough avenues; 5) Fun to see, read, digest and remember.

Learning disaster in school is very important to do. Considering that Indonesia is one of the countries with areas classified as having a high level of disaster prone to disasters, both in the form of natural disasters to social disasters. According to the data that has been collected, it is explained that natural disasters that have the potential to occur in Indonesia, namely: floods, tornadoes, landslides, volcanic eruptions, tsunamis, and earthquakes can occur along the Indonesian archipelago from Sabang to Merauke (BNPB, 2014).

Seeing the relatively high vulnerability of disasters, it is very important to develop a curriculum and learning model for disaster education. There are several important aspects in disaster education, namely: the introduction of potential disasters in the vicinity, the history of disasters that have occurred, forms of anticipation, increasing awareness of signs of disasters, the impact of disasters on individuals, families and communities, ways of handling in disaster conditions, and how to save yourself from disaster. Disasters can occur at any time without being able to predict in advance, be it natural or social disasters (BNPB, 2014).

Through disaster education it is hoped that a minimum risk of disaster impact will be achieved. in this case, geography learning has an important role in understanding disaster management. Of course, this understanding of disaster management is carried out in the learning process by teachers to students by explaining and providing examples of interesting disaster events. The education and awareness process carried out by teachers for understanding this disaster should be supported by learning concepts and techniques that attract students' interest and enthusiasm for learning. By making learning physical and social geography interesting, it will certainly make it easier for teachers to convey learning objectives and develop students' level of understanding of disasters. This article was created to create an effective learning scenario using the Mind Mapping learning model to generate disaster awareness in earthquake material in class X.

B. Methodology

1. Research Design

The research method used in this research is descriptive qualitative method using library research analysis. The analysis used is as follows.

Mind Mapping Research Model

Mind Mapping was originally introduced by Tony Buzan 1970. This technique is also known as luminous thinking (Widura S. 2008). Mind Mappping has a central idea or word, and there are 5 to 10 other ideas that emerge from the main idea. Mind Mapping is very effective when used to bring up ideas that we hide. Diagram shapes such as tree and branch diagrams make it easy to convey information to other information. Mind Mapping is a preparation note system to help students use all the potential of the brain to work optimally by combining the left brain and right brain (Silaban, 2012).

Mind Mapping is a technique that notes that developing a visual learning style that uses words, colors, lines, and images to integrate and develop the potential of the brain that allows a person to manage and remember all forms of information, both written and spoken so that it is easier for the brain to understand. absorb the information received. Because our brains think in terms of colors and images. This map can generate original ideas and easily bring out memories. The Mind Mapping technique invites students to explore their potential to become learning in life (Sapitri, A. 2010).

Disaster Education

Disaster education can be included in geography subject matter in high school which is possible and relevant to the competency standards contained in the curriculum, because if it is not related to existing competency standards, the discussion of lessons will become unfocused. This can be done by an educator at school as an effort to provide learning about disasters, considering that disaster education is not a subject matter and is not in the school curriculum.
Disaster education is part of disaster management, especially in the disaster management or disaster mitigation stage, namely in the form of awareness that is carried out through the disaster education channel, which may not have fully answered disaster problems that have occurred in this country. But apart from that, at least educational institutions must contribute to disaster management, at least introduce our students to disaster problems that are close to our lives.

C. Findings and Discussion

Mind Mapping Learning Model on Earthquake and Tsunami Material

The steps for the Mind Mapping learning model are:

1) The teacher conveys the competencies to be achieved. The teacher argues that the competencies to be achieved are about social problems that exist in the local area.

2) The teacher suggests a concept / problem that will be responded to by students, and preferably problems that have alternative answers. The teacher gives assignments to students to make mind maps about social problems.

3) Forming groups of 2-3 members. The teacher forms a group for the task of making a Mind Map, each group has two members.

4) Each group makes an inventory of the alternative answers to the discussion results. Each group makes a Mind Map about social problems and notes the important things from the Mind Map that is made.

5) Each group (or randomized to a specific group) reads the results of the discussion and the teacher records them on the blackboard and classifies them as needed. Each group shows the results of the Mind Map that has been made and explains it to their classmates.

6) From the data on the blackboard, students are asked to make conclusions or the teacher makes comparisons according to the concepts provided by the teacher (Swadarma, Doni. 2013). After all or several groups have advanced, the teacher makes a comparison with the Mind Map that the teacher made.

Strengths and Weaknesses of Mind Mapping Learning Model

The advantages of the Mind Mapping learning model include that it can be used to organize ideas that come to mind, the process of drawing diagrams can bring up other ideas, the diagrams that are formed can be a guide for writing. Weaknesses of the Mind Mapping learning model are: Students 'mind maps vary, so that teachers will have difficulty checking students' Mind Maps. In addition, the Mind Mapping learning model requires a lot of colored pencils to make a Mind Map, so it is a little inconvenient for students to carry a lot of colored pencils, which can be said to be less practical. After knowing some of the benefits of the Mind Mapping learning model, teachers need to try the Mind Mapping learning model in geography learning material about earthquakes. The use of the Mind Mapping learning model is expected to generate awareness of students' hatred (Riyanti, 2012).

Analysis

The analysis stage was carried out using the document recording method (Subana, et al 2013). Done by recording the steps that have been carried out in accordance with the development procedure. The analysis phase includes activities such as: 1) analyzing the competence of students, 2) analyzing the characteristics of students on the learning capacity, knowledge, skills, attitudes that students have, and 3) analyzing the material according to competency demands (Putra, 2014). Other research shows that the analysis phase begins with a survey of students and the learning environment to determine which learning problems are a top priority (Premana, 2013).

Learning media are all tools and materials that can be used for educational purposes such as radio, television, books, newspapers, magazines, and so on (Sanjaya, 2012). The media are not only their tools and information, but also to study the process, because information or messages that are known only to see other people's results will not make that information meaningful in their lives. In this section, a needs analysis is carried out to formulate problems and find the right solution. The most basic problem is the learning process using the discourse method. Students think monotone, focus on the material presented by the teacher.

Therefore, we need an interesting learning method using media tools. The media used must be able to help students in the process of remembering and recording the material taught by the teacher. Mind Mapping media is a method that can support the process. Mind Mapping media make the learning process more interesting and fun with colors, images and symbols. The Mind Mapping that has been developed in this research is Mind Mapping about earthquakes. It is one of the subject matter of Geography. Earthquake Mind Maps consist of: definition of earthquakes, causes of earthquakes, earthquake mitigation, and earthquake consequences.

Design

At this stage, the activities carried out are designing methods, teaching materials, and learning strategies. The product designed for this research is in the form of a media consisting of curved lines that can be connected with one keyword to another using colors and symbols. This learning media is called Mind Mapping. It combines lines, colors and symbols in one place to produce concepts that can be used as teaching materials for the learning process. Mind Mapping is used for earthquake problems in geography class X.

This learning media is designed to attract and assist students in recording and considering the subject matter presented by the teacher, so that the learning process becomes more enjoyable. Mapping of the initial Mind Mapping media design image can be seen in Figure (a). In this medium, there are several elements which consist of:

1) Learning Topics

The design contained in this media is related to earthquakes, such as: definition, causes, mitigation, and consequences.

2) Design the main idea, branches and sub-branches

The main idea is laid out in the center of the paper, followed by the branches and sub-branches. Create a branch as possible connected to the main topic and create a sub-branch to connect with the branch. Each sub topic branch is written with keywords. The sub-topics in the branch are related to the main topic, while the sub-topics related to the branches, for example: the main topic in Mind Mapping is earthquakes, the sub-topics in the branch are earthquake mitigation, While the sub-topics in the sub-topic branches include risk maps, infrastructure improvements, earthquake resistant houses, as well as outreach and simulations.

3) Design colors, lines and symbols

The use of color in Mind Mapping media must be more than five colors. the more colors used, the more interesting the Mind Mapping will be. Each branch must have a different color to make it easier for students to remember, for example, the branches and sub-branches that discuss the causes of earthquakes are colored in green, and in the branches and sub-branches that discuss the definition of an earthquake it is colored red .

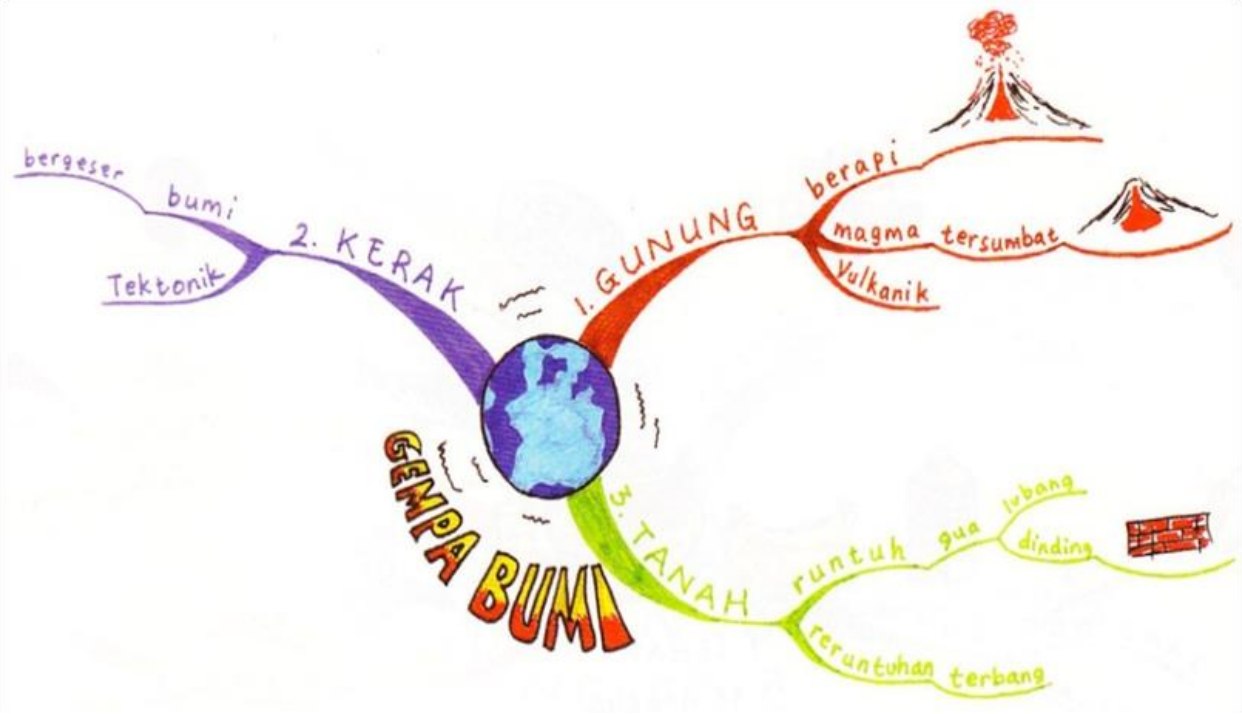

Figure (a): Initial Design

The use of lines made with curved shapes and the use of symbols placed on each branch and sub-branch. The design stage is by designing products to be developed that are conceptual in nature (Khumaira, 2013). Story ideas are designed through scripts, casting, location and background, work schedules and storyboards (Rena, 2014). The design stage, to design the media that will be developed with three types of activities, namely making flowcharts, storyboards, and presenting media designs (Juliantari, 2013).

Development

The development stage is producing media that will be used in the learning process. At this stage Mind Mapping media is produced. In making Mind Mapping media, there are several elements, including the main topic, branches, sub-branches and symbol support. Mind Mapping media can be validated by two experts consisting of one expert in teaching Geography and an

expert in educational teaching. Validation is carried out to determine whether the media should be developed or not. In the initial design of Mind Mapping media (Figure 1 (a)) several weaknesses were found so that the elements need to change to be better and more interesting. This change includes the following elements:

1) Preparatory Branch

Changes in branch elements. In the initial design, the branch line is not connected to the sub-branch line, so it appears that the branch only describes the main topic and does not describe the subbranch. Supposedly, the main manufacturing branches of topics are connected to sub-branches, so that the explanations of the main topics with the sub topics are synchronized. Create revised branches and sub-branches as shown in Figure 1 (b).

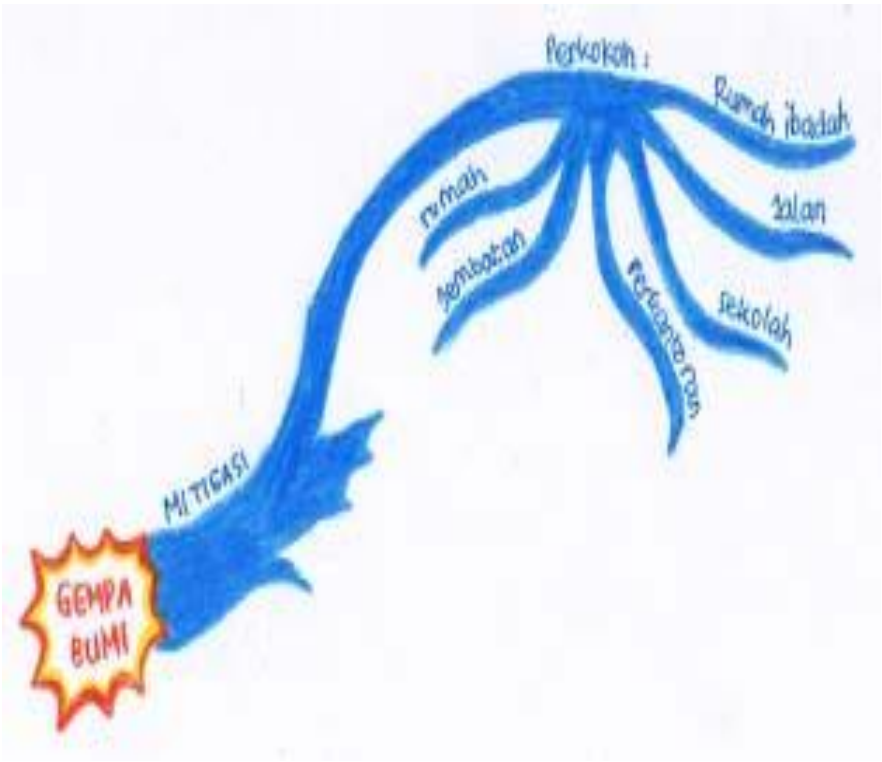

Figure 1 (b): Branches and Sub Branches

There are several additional symbols on the revised Mind Mapping. Symbol located at the end of the sub-branch. The symbols must be made according to the main idea of the sub-branches. Examples of symbols can be seen in Figure 1 (c). Some suggestions from the validator into input to produce better Mind Maps.

Figure 1 (c): Symbol Was Created

Some suggestions from the validator into input to produce better Mind Maps. The revised media results can be seen in Figure 1 (d). Mind Mapping is revised and consists of main topics, branches, sub-branches and symbols. There are five branches of the main topic. The fifth branch has sub-branches and symbols, respectively. The lines on the branches and sub-branches are in the form of arches and are connected to the main topic. In each branch and sub-branch of the main topic of discussion is called a sub-topic and is written in the form of keywords. This media must be given a variety of colors to make it look attractive and more alive.

Figure 1 (d): Revised Media

The combination of colors, symbols, shapes, and lines can make it easier for the brain to absorb the information received. In making mind mapping media with a number of steps in sequence, a complete Mind Mapping media will be formed. In education and learning, the goals, uses and applications of Mind Mapping are numerous, including summarizing, reviewing, taking notes, teaching, books, presentations, research and time management. So its use can encourage students to become familiar with images and symbols to facilitate understanding of real objects or situations (Widura, 2008).

Mind Mapping has many uses, especially for learning and teaching. For learning purposes, Mind Maps are very useful when we summarize, take notes, and review. For teaching, Mind Mapping is very useful to be applied when the teacher is taking notes, preparing subjects and managing time. Using mind mapping for learning and teaching purposes will greatly help the learning and teaching process itself (Silaban, 2013).

D. Conclusion

Based on the above results, it is concluded that Mind Mapping media is developed by three stages: analysis, design, development. This media can facilitate students to record and understand lessons, especially about earthquake problems. It is recommended for teachers to use a learning model using Mind Mapping media as a method for teaching other subjects and for students it is expected that students can apply this method to the learning process to help students understand the lesson.

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