

Training on the Making of 3D Geographic Learning Media (Models of Earth Folds and Fractures and Earth Structures) In Sma N 2 Batang Anai -Padang Pariaman Regency And Sma N 5 Pariaman City

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Abstract – This article aims to improve the ability of teachers and students to create 3D geography learning media (fold and fracture models of the earth and earth structures) and to improve teachers' understanding and ability in terms of understanding pedagogical aspects which can be seen from the process of designing a Learning Implementation Plan (RPP). especially in terms of choosing a model or learning method. This activity was carried out at SMAN 2 Batang Anai, Padang Pariaman Regency and SMA N 5 Pariaman City using training methods, question and answer, and practice. The participants involved were geography teachers and students who were represented in each class with 10 participants. With the COVID-19 Pandemic and appeals from the government to comply with health protocols by checking temperature, washing hands, using hand sanitizer, maintaining distance, wearing masks and wearing face shields, this activity was carried out with limited participants, so that COVID-19 transmission did not become the newest cluster in the activity area. Activities are carried out in compliance with health protocols and implementing all the regulations that have been listed previously. The activities include conducting training related to designing effective instructional media and conducting training related to making models of the earth's folds and fractures and earth structures for geography teachers and students. The results of the training carried out at SMAN 2 Batang Anai, Padang Pariaman Regency and SMA N 5 Pariaman City in the form of 3D models and the increased abilities of teachers and students in making learning media, in this case, are models of earth folds and fractures and earth structures. From this training, the teacher has increased the understanding/ability of the pedagogical aspects that can be seen from the process of designing lesson plans, especially in terms of selecting learning models. Geography teachers also understand better about adequate competence in terms of designing and utilizing media so that quality and effective learning is created.

Keywords – RPP, pedagogy, folds model, fault model, earth structure model, geography.

I. INTRODUCTION

Learning has several components that must be fulfilled, one of which is learning media which is an important component in supporting the teaching and learning process

(PBM). The use of media should be an important part of the learning process. According to Rohani (1977), media are all forms of intermediaries used by people who spread ideas, so that the idea reaches the recipient. The definition of learning media is a combination of materials and tools or a

combination of software and hardware (Sadiman *et al*, 1996; Chandra *et al*, 2019). The existence of learning media is now a means of connecting a teacher with students so that the teacher acts as a facilitator. Apart from being a delivery system or introduction, media is often replaced by the word mediator, with the term media mediator showing its function or role, i.e managing an effective relationship between the two main parties in the learning process, i.e students and the content of the lesson. In short, the media is a tool that delivers or delivers teaching messages (Arsyad, 2010). According to Pribadi (2017), media is used to support learning activities to acquire knowledge, skills, and attitudes.

The use of instructional media can bridge problems against the limited absorption of students and the ability of teachers to manage classroom learning. Making learning media for some educators may not be easy, including learning geography for the high school level. Geography is the study of the similarities and differences of geosphere phenomena with a regional and environmental viewpoint in a spatial context (Results of seminars and workshops in Semarang, 1988; Azkiyah, 2017). Learning geography is not only limited to reading material but remembering and understanding what has been learned so that understanding of students' scientific concepts, principles and process abilities can be developed.

Geography is closely related to spatial subjects, so it is necessary to make 2-dimensional or 3-dimensional media to simplify abstract concepts. So that students can more easily understand the material and it is reflected directly in their mind. Learning media is very necessary for stimulating thoughts, feelings, attention, interests and motivation to learn so that the teaching and learning process can run well and smoothly. Sudjana and Rivai (2002); Shindu (2016), suggest the benefits of learning media in the student learning process, i.e: 1) Learning will attract more students' attention so that it can foster learning motivation; 2) The learning material will have a clearer meaning so that it can be better understood by students, enabling them to master and achieve learning goals; 3) Teaching methods will be more varied, not solely verbal communication through a speech by the teacher so that students do not get bored and teachers do not run out of energy, especially if the teacher teaches at every lesson; and 4) Students can do more learning activities because they do not only listen to teacher descriptions, but also other activities such as observing, demonstrating, showing off, etc.

The results of observations that have been made in SMA N 2 Batang Anai, Padang Pariaman Regency and SMA N 5 Pariaman City, there are problems in the teaching and

learning process of geography subjects. These problems include the minimal use of instructional media in the learning process and the lack of concrete media development that affects the low level of interaction and attention of students towards teaching and learning activities, especially during geology and hydrology learning. This is due to the lack of teachers in developing learning media related to geology and hydrology to make it more interesting. These problems certainly affect the quality of learning with the learning achievement of students.

Improving the quality of student learning requires a learning strategy and appropriate learning media so that it can improve the learning process. Learning media by the subject of the dynamics of the lithosphere and its impact on life and the dynamics of the atmosphere and its impact on life is one of the hydrological cycle media and soil layers (Chandra *et al*, 2016; Harmanto, 2018; Boldureanu *et al*, 2020). This media describes directly in 3 dimensions so that the image looks like the real situation. The making of learning media for models of earth folds and fractures and the structure of the earth is very simple and can also take advantage of used materials around living quarters or schools. The instructional media, the teacher can explain not only through pictures or videos, but the teacher can immediately see how the hydrological cycle and soil layers are. Learning using concrete media will be stored for a long time in the memory of these students.

Based on the results of observations and interviews with geography subject teachers at SMA N 2 Batang Anai Padang Pariaman Regency and SMA N 5 Pariaman City, several problems occur in geography learning, i.e the lack of availability of learning media in the geography learning process, the lack of 3-dimensional media development that affects The low level of interaction and attention of students towards teaching and learning activities, especially when learning the hydrological cycle and soil layers because it is not reflected in the minds of students.

Based on the description of the situation analysis and partner problems, the community service team of the Department of Geography, FIS, UNP offers solutions to solve these problems with several activities, i.e holding training to increase the ability to develop geography learning media, holding training to increase mastery and use of learning media in the form of fold and fracture models of the earth and earth structure

II. METHODS

This community service activity will be held at SMA N 2 Batang Anai, Padang Pariaman Regency and SMA N 5 Pariaman City. With the COVID-19 Pandemic and appeals from the government to comply with health protocols by checking temperature, washing hands, using hand sanitizer, maintaining distance, wearing masks and wearing face

shields, this activity was carried out with limited participants, so that COVID-19 transmission did not become the newest cluster in the activity area. Activities carried out in compliance with health protocols and implementing all the regulations that have been listed previously. Participants involved in this service activity were geography teachers and 10 students in class XI. The implementation plan can be seen in Table 1 below.

Table 1: Plan of activity implementation

Activities To	Forms of activity	Description of activities
I	Increased knowledge about designing effective learning media	The resource person provides material and then gives an assignment with a format of 25% theory and 75% practice in designing instructional media
	Training on making and utilizing learning media, i.e learning media for models of earth faults and folds and earth structures	The resource person gave the material and then gave an assignment with a format of 25% theory and 75% practice to make learning media for folds, fractures, and earth structures. Each teacher makes learning media according to the specified KD
II		
III	Training on the manufacture and use of learning media, i.e learning media models of earth folds and fractures and earth structures for students	The resource person gave the material and then gave an assignment with a format of 25% theory and 75% practice to make learning media models of earth folds and fractures and the structure of the earth. Each group of students makes learning media according to the specified KD

III. RESULTS AND DISCUSSION

The training activity for making 3D geography learning media (models of earth folds and fractures and earth structures) was held on Saturday 26 September 2020 at 09.00 WIB - 13.00 WIB at SMA N 2 Batang Anai and on Sunday 27 September 2020 at 09.00 WIB - 13.00 WIB at SMA Negeri 5 Pariaman City. The training was carried out in two classes who acted as training instructors, i.e Sari Nova, S.Pd, M.Sc who was accompanied by the dedicated team of Deded

Chandra, S.Si, M.Si, Drs. Helfia Edial, MT, Sri Mariya, S.Pd, M.Pd, Lailatur Rahmi, S.Pd, M.Pd and Sri Kandi Putri, S.Si, M.Sc. This training was attended by three teachers of geography subjects i.e Izaldi S.Pd, Fevi Despita, S.Pd and Nanda Putra Pratama, S.Pd as well as 5 students from class XII SMA N 2 Batang Anai. Meanwhile, in SMA Negeri 5 Pariaman City, one geography teacher, i.e Zulkifli S.Pd, was attended by 5 students from class XI. The following is a photo of the activity:



Fig 1. Opening training on modeling of earth faults and folds and earth structures in SMAN 2 Batang Anai



Fig 2. Explanation process for making model of earth faults and folds and the earth's structure in SMAN 2 Batang Anai



Fig 3. Opening training for model making of earth faults and folds and earth structures in SMAN 5 Pariaman City



Fig 4. Explanation process for making model of earth faults and folds and the earth's structure
SMAN 5 Pariaman City

The implementation of community service with the title Training for Making 3D Geography Learning Media (Faults and Folds Models of the Earth and Earth Structure) as One of the Geography Learning Media in SMA N 2 Batang Anai, Padang Pariaman Regency and SMA N 5 Pariaman City is based on the dedication team's awareness of its importance Helping the teacher to truly have the ability to make media not only 2-dimensional like power points but also able to make 3-dimensional media such as miniature solar systems. The teacher will find it easy to explain the lesson if it is assisted by real media such as this 3-dimensional media. Students will also easily record and depict in their memories about the material related to the miniature solar system, especially geography which is closely related to astronomy and spatial.

The community service team realizes that no matter how sophisticated and modern life is, with the support of technology, it will not be able to take care of the role and function of teachers in the classroom. Teachers who are liked by students are teachers who are not monotonous when teaching, for this effort the teacher in learning uses 3-dimensional media so that the learning atmosphere becomes lively and enjoyable for students. Because of the strategic role and function of teachers, this training is felt to be very necessary and must be carried out continuously, both with the guidance of lecturers from higher education institutions and independently through the respective MGMP containers.

This community service has been carried out in two schools, i.e SMA N 2 Batang Anai and SMA N 5 Pariaman City using PNBPNP UNP 2020 funds which have generally been carried out very well. In the implementation, both teachers and students are very enthusiastic and happy with this kind of training. There are several important notes from the implementation of this service that needs to be the attention of various parties. First, teachers and students feel the great benefits of this service. This was revealed from the community service team interview with the training participants. Teachers and students are very enthusiastic about participating in this training because they have not been maximal in making learning media. Teachers rarely use instructional media during the teaching and learning process. Secondly, this 3-dimensional media creation training requires time and effort in the manufacturing process. Making this media is relatively easy and does not use a large amount of money for its manufacture. So that it will not interfere with students in the teaching and learning process in the classroom. The benefits of using the media will be greater than lecture-only learning.

A teacher who has high professionalism will try to make the students who are taught easily to understand and understand the material with high creativity to make and use self-made media even though it is simple but very useful and helpful.

IV. CONCLUSION

Participants in this activity were Geography teachers at SMA N 2 Batang Anai, Padang Pariaman Regency and SMA N 5 Pariaman City as well as 10 students from each school. This activity was carried out with limited participants to avoid COVID-19 transmission and its implementation complied with health protocols by checking the temperature before entering the classroom, washing hands using hand sanitizer, wearing masks and wearing face shields. By the objectives of implementing this community service activity, after the implementation of the activity, it is hoped that teachers and students will have increased abilities in terms of mastery of making 3-dimensional media in the form of models of earth folds and fractures and earth structures. The advantages of this media, students can immediately know and make it directly. This media is also made with minimal costs so that it does not burden students. This introduction and training activity is expected to enable subject teachers to continue training for other 3-dimensional media making, not only folds and fractures and earth structures but other objects in the learning material, teachers are also advised to implement 3-dimensional media in the form of fold models and the fracture and structure of the earth in the teaching and learning process, and teachers are advised to implement project-based learning. Geography teachers understand more about adequate competence in terms of designing and utilizing media to create quality and effective learning. This introduction and training activity is expected to enable subject teachers to continue training for other 3-dimensional media making, not only folds and fractures and earth structures but other objects in the learning material, teachers are also advised to implement 3-dimensional media in the form of fold models and the fracture and structure of the earth in the teaching and learning process, and teachers are advised to implement project-based learning. Geography teachers understand more about adequate competence in terms of designing and utilizing media to create quality and effective learning.

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