

# TRAINING FOR IMPROVING COMPETENCE OF SENIOR HIGH SCHOOL GEOGRAPHY TEACHERS IN REMOTE SENSING AT SMAN 16 PADANG CITY

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\*Corresponding Author, Received: Aug 10, 2023. Revised: Sept 11, 2023. Accepted: Dec 10, 2023



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**ABSTRACT:** This article aims to enhance the capabilities of teachers and students in the field of Remote Sensing and to understand the components present in remote sensing products. This activity took place at SMAN 16 Padang using a training and question-and-answer method. Participants included geography teachers and students, with 20 participants representing each class. Despite the lifting of the PPKM policy by the President, it is important to always adhere to the applicable protocols and implement all previously registered regulations. The activities included training related to Remote Sensing and the process of creating remote sensing products for geography teachers and students. Through this training, participants experienced an improvement in understanding or the ability to comprehend various aspects of the remote sensing product creation process. Geography teachers also gained a better understanding of the necessary competencies in designing and utilizing remote sensing products, thus promoting quality and effective learning.

**Keywords:** *Geography, Training, Competence, Remote Sensing*

## 1. INTRODUCTION

Education is the ethical endeavor of humans, for humans, and for human society [1]. Education can develop one's talents to an optimal level within the essence of the individual, with the goal of enabling every individual to respectfully contribute to the development of humanity and continuously achieve a higher quality of life [2].

Education is inseparable from the learning activities that have several components to be fulfilled, one of which is instructional media, which is one of the essential components in supporting the teaching and learning process (TLP) [3]. The utilization of media should be an integral part of the learning process. The use of instructional media can bridge the issues related to the limited absorption capacity of students and the teacher's ability to manage classroom learning [4]. Creating instructional media may be too burdensome for some educators.

Geography is a branch of science that studies all aspects of the Earth and the changes that occur within it. According to [5], learning geography is not merely about memorizing various place names, geographical features, or countries with their capitals. The goal is to provide students with

opportunities to understand the environment and the processes related to it. This is aimed at equipping them with life skills that can be applied in various natural situations.

Basically, the goal of geography education is to create students who have the ability, attitude, and skills to develop analytical thinking in understanding geospheric phenomena. Additionally, it aims to foster a love for one's homeland, appreciation for the diversity of other countries, and the ability to address challenges that arise due to the interaction between humans and their environment [6].

The geography subject is closely related to spatial concepts, so it is necessary to create media to simplify abstract concepts. This allows students to more easily understand the material and visualize it directly in their minds. Learning media is highly essential in stimulating the minds, feelings, attention, interest, and learning motivation of students, thus ensuring that the teaching and learning process can proceed smoothly and effectively [7]. One of the interesting topics to explore in geography education is material related to remote sensing.

Remote sensing is a science, art, and technique aimed at acquiring information about objects, phenomena, and areas from a distance using remote sensing tools, typically artificial sensors [8]. Remote sensing material is one of the topics taught at the high school level that requires an understanding of spatial phenomena. Remote sensing material is part of the curriculum that demands students to utilize their geographical skills in operating equipment related to remote sensing. When studied in high school, remote sensing material encompasses understanding concepts related to remote sensing, using equipment, methods of remote sensing data processing, analyzing data generated through remote sensing, and applying remote sensing in various useful contexts [9].

Based on previous observations conducted at SMAN 16 Padang, there are issues in the teaching and learning process of the geography subject. These issues include difficulties in explaining remote sensing material, which is a new topic and requires the right method for the material to be easily understood by students, especially when providing practical examples of its application, even in a simplified manner. This issue extends to the concepts of Remote Sensing presented to students, including objects, areas, or phenomena. Although it is only a concept, remote sensing material tends to be more complex and challenging to comprehend

when compared to other topics [10].

These issues certainly affect the quality of learning and the academic achievements of the students. Therefore, what is needed is an appropriate learning strategy and learning media to enhance the learning process.

The problems faced by these teachers will indeed have an impact on the achievement of quality education. Therefore, all parties should collaborate to address these issues. In this regard, we, the Community Service Team from the Geography Department, Faculty of Social Sciences, Universitas Negeri Padang, propose a solution to tackle these challenges through a series of activities. This solution includes conducting training to enhance the competence of Geography Teachers in understanding the material and mastering teaching methods and media in the field of remote sensing.

## 2. METHOD

The Community Service activities conducted by the Geography Department, Faculty of Social Sciences, Universitas Negeri Padang (FIS UNP), were held at SMA Negeri 16 Kota Padang. The participants involved in this activity were Geography Teachers and students from SMA Negeri 16 Kota Padang. There were 2 teachers and 20 students who participated in this activity. The implementation plan for the activity can be found in Table 1 below:

Table 1. Plan for the Implementation of Activities

No	Activity	The form of the activity	Activity Description
1	I	Increased understanding of remote sensing material	The speaker provides the material and then assigns tasks with a format of 75% theory and 25% assignments.
2	II	Increased mastery of learning methods and media regarding remote sensing material	The speaker provides the material and then assigns tasks with a format of 25% theory and 75% practical related to remote sensing material.

### 3. RESULTS AND DISCUSSION

This remote sensing training activity was carried out at SMAN 16 Padang City. The time for the activity will be Friday, December 16 2022, 08.00 – 11.30 WIB. The training at SMAN 16 Padang City was carried out in the classroom and acting as the training resource person was Mrs. Sri Kandi Putri, S.Si, M.Sc who was accompanied by the service team Deded Chandra, S.Si, M.S, Drs.Helfia Edial, M.T, Sri Mariya, S.Pd, M.Pd, Mentari Dian Pertiwi, M.Pd. This activity was attended by 2 Geography subject teachers and 20 class X students. The following are photos of the training activities taking place.



**Fig 1.** The Opening of the Training Activity by the Principal of SMAN 16 Padang City

### 4. CONCLUSION

The participants in this activity are Geography teachers at A highly professional teacher will strive to ensure that the students they teach can easily understand and grasp the material with high creativity, which aids in the teaching and learning process in the classroom. With this training, it is hoped that Geography Teachers at SMAN 16 Kota Padang can enhance their abilities in understanding and mastering the methods and media related to remote sensing material. Furthermore, it is also expected that they have adequate competence, particularly in designing and utilizing media, thus resulting in quality learning.

SMAN 16 Kota Padang and students from the school, totaling 20 individuals. In line with the objectives of this community service activity, it is expected that after the implementation of the activity, teachers will

enhance their abilities in understanding and mastering the methods and media related to remote sensing material. Furthermore, it is also hoped that they will have adequate competence, particularly in designing and utilizing media, thus leading to the creation of quality learning.

Teachers are advised to continue deepening their understanding of remote sensing material, with the expectation of making the learning process more interactive. Furthermore, teachers are also encouraged to implement project-based learning to enhance student understanding.

Therefore, it is expected that geography teachers will have better competence in designing and implementing effective learning media, thus creating a higher-quality learning experience.

### 5. ACKNOWLEDGEMENTS

We would like to express our gratitude, especially to the Geography teachers at SMA Negeri 16 Kota Padang, as well as the students from the school who participated in this training activity. Additionally, we would like to thank all parties who provided support for the implementation of this activity.

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