Journal of Innovative and Creativity
Journal Homepage: https://joecy.org/index.php/joecy
e-mail: journaljoecy@gmail.com

Faculty of Education
University of Pahlawan Tuanku Tambusai
ISSN 2775-771X (Online)
ISSN 2962-570X **(Printed)**
5 (3) 2025, Page: 31793-31802

Raised-Relief Map Training: a Creative Geography Learning Media for Junior High School Social Studies (IPS) Teachers

Affandri Jasrio[1], Deded Chandra[2], Helfia Ideal[2], Eva Purnama Sari[3], Ratna Wilis[2], Bambang Afriadi Putra[2], Dila Andriani[2], Ibnu Fadhil Azzikri[2], Regi Cania[2], Cindy Dian Hadisty[2]
[1]Department of History– Padang State University, Indonesia, [2]Department of Geography- Padang State University, Indonesia, [3]Department of Remote Sensing – Padang State University, Indonesia
Corresponding Author: Deded Chandra, dededchandra@fis.unp.ac.id

Published: November, 2025

ABSTRACT
Teaching Indonesia's geographical conditions in schools often faces challenges because flat maps are insufficient to represent topographic variations realistically. As a result, junior high school social studies teachers (SMP/MTs) struggle to explain differences between highlands, lowlands, and water bodies, making it difficult for students to fully understand. To address this issue, a training program on making embossed maps was carried out for members of the Social Studies Teachers' Association (MGMP) in Padang City. The focus was not on students directly, but on enhancing teachers' competencies so they can design and apply innovative learning media in the classroom. Embossed maps were created through several steps: (1) drawing a map sketch on plywood, (2) layering newspaper pulp to follow the topographic contours, (3) drying the map under sunlight, (4) coloring according to elevation, and (5) preparing a legend that reflects relevant geographic elements. The training demonstrated high enthusiasm among participants, who successfully produced embossed maps as effective visual media. Thus, embossed maps should be strongly advocated as practical, innovative, and applicable tools to support effective geography teaching and learning in social studies.

Keywords: Training; relief maps; learning media; geography; social science

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INTRODUCTION

Social Studies education is a learning process that examines various aspects of human social life through the integration of disciplines such as sociology, history, geography, economics, politics, law, and culture. Its main objective is to develop students' potential to become good citizens who possess knowledge, social awareness, and skills that are beneficial for themselves, society, and the nation (Azzahra, 2023). In the educational context, Social Studies learning is designed as a simplification of various social sciences and humanities disciplines, presented scientifically and pedagogically. This aims to help students understand differences, solve social problems appropriately, and actively participate in a democratic society (Parni et al., 2020).

To achieve these objectives, the education sector is required to prepare teachers who are active, creative, innovative, and engaging. Law Number 14 of 2005 concerning Teachers and Lecturers emphasizes that the position of teachers as professional educators serves to enhance their dignity and role as learning agents in improving the quality of national education. Therefore, teachers must be able to deliver innovative learning experiences that enable students to learn optimally, both independently and through classroom instruction. One way to achieve this is by utilizing learning media. Learning media serve to facilitate the delivery of information, increase

learning motivation, accelerate understanding, and make the material more engaging (Moto, 2019; Pan et al., 2023). Thus, learning media play an essential role in strengthening communication between teachers and students and influencing their learning outcomes.

In Social Studies learning, the use of instructional media is highly relevant because Social Studies not only aims to provide knowledge but also helps students understand social phenomena while developing critical thinking skills (Dasar et al., 2024). Geography, as one of the components of Social Studies, examines geospheric phenomena—both physical and human—through a distinctive analytical approach (Lasaiba, 2022). One of the topics in Social Studies at the junior high school (SMP/MTs) level is the geographical conditions of Indonesia, which include the diversity of landforms, both terrestrial and marine, as well as the influence of Indonesia's geographical and astronomical location on its climate and natural conditions. However, the results of a discussion between the service team and students with the Secretary of the Junior High School Social Studies Teachers Association (MGMP IPS) of Padang City, Mr. Alkamar, S.Pd, who is also a Social Studies teacher at SMPN 40 Padang (Wednesday, February 19, 2025), revealed that teachers still face difficulties in understanding and teaching the topic of Indonesia's geographical conditions. One of the main reasons is the lack of concrete examples to explain geographical concepts. As a result, terms such as lowlands and highlands become abstract and difficult for students to grasp. Therefore, there is a need for instructional media that can provide realistic visualizations, such as a relief map.

A relief map is a three-dimensional representation of the Earth's surface that illustrates topographic variations such as mountains, valleys, and plains. This medium is effective in geography learning because it can realistically and interactively visualize regional characteristics (Lasaiba, 2023). Through relief maps, topographic concepts can be more easily understood while also increasing students' interest in learning. Unfortunately, the implementation of relief maps in schools, particularly at the junior high school (SMP/MTs) level in Padang City, remains limited. This limitation is mainly due to the lack of teachers' knowledge and skills in creating and utilizing relief maps as learning media.

Based on these issues, training on relief map making for Social Studies teachers is essential to enhance their competence in teaching the topic of Indonesia's geographical conditions. This training is intended for members of the Social Studies Teachers Association (MGMP IPS) of Padang City and aims to equip teachers with practical skills in producing relief maps. In this way, teachers can present Social Studies material in a more engaging, interactive, and comprehensible manner, thereby improving students' understanding and interest in learning.

This activity aligns with the *Merdeka Belajar Kampus Merdeka* (MBKM) policy and the *Key Performance Indicators* (IKU). The relief map training supports IKU 2 through the involvement of lecturers outside the university, IKU 3 by engaging educational practitioners, IKU 5 through the participation of students as training assistants, and IKU 7 through collaboration between Universitas Negeri Padang and the Social Studies Teachers Association (MGMP IPS). With a practical and collaborative approach, this activity not only benefits teachers and students but also strengthens the synergy between higher education institutions and schools.

METHOD

This activity was carried out at SMPN 13 Padang City. The participants involved in this community service program were Social Studies (MGMP IPS) teachers from junior high schools (SMP/MTs) across Padang City, with a total of approximately 54 participants.

The implementation was conducted in two main stages using a project-based training model. The first stage focused on enhancing teachers' knowledge of effective learning media. In this stage, the instructor delivered the material and assigned tasks, with a composition of 25% theory and 75% assignments. The second stage consisted of practical training on creating learning media in the form

of relief maps for the topic of Indonesia's Geographical Conditions. The instructor provided material and assignments following the same format 25% theory and 75% practice related to the process of making relief maps as learning media.

Through this project-based training model, Social Studies teachers at the junior high school level (SMP/MTs) are expected to improve their competence in designing and utilizing relief maps as effective instructional media. The 54 participating teachers were divided into several groups. Each group was assigned the task of creating a relief map through the following stages:

1. Drawing a map sketch on a plywood sheet using writing tools (such as pens, markers, etc.).
2. Preparing a newspaper pulp mixture and applying it onto the map sketch according to the topographic shapes of Indonesia.
3. Drying the map outdoors or under sunlight.
4. Coloring the map after it has completely dried.
5. Creating a map legend based on relevant geographical elements.

Program evaluation is conducted to measure the effectiveness of the training through two forms: process evaluation and result evaluation. Process evaluation is carried out during the activity to monitor participants' engagement, the smoothness of implementation, and the effectiveness of the training methods. Evaluation is also conducted through discussions and question-and-answer sessions to obtain feedback.

Result evaluation is conducted by monitoring the implementation of the raised-relief map media in classrooms, including its impact on students' understanding. To ensure the sustainability of the program, the service team will provide continuous mentoring through online discussion forums and field visits, so that teachers receive support while implementing the raised-relief map learning media in their respective schools.

FINDING AND DISCUSSION

A training program is considered capable of influencing teachers' teaching skills. Through this training, opportunities are opened for teachers to further develop their abilities in order to optimize the learning process professionally (Suparno, 2015). This begins with the use of learning media, both physical and non-physical, which serve as tools to facilitate a more effective and efficient understanding of learning (Collins et al., 2021).

Learning media are essential components in the learning process that greatly assist teachers in delivering instructional messages (learning materials). They can stimulate students' attention, interest, thoughts, and emotions during learning activities, helping them achieve the intended learning objectives (Hasriyanti, 2022).

The implementation of this training aims to provide updated insights for social studies (IPS) teachers who are members of the MGMP IPS of Padang City, enabling them to design and implement learning activities that focus more on developing students' life skills.

This training was conducted on Wednesday, August 20, 2025, from 08.00 to 13.00 WIB, at SMPN 13 Padang City. The participants consisted of social studies teachers from junior high schools (SMP/mts) across Padang City. The training was facilitated by lecturers from Universitas Negeri Padang, assisted by a team of university students.



Figure 1 Training on Developing Raised-Relief Map Learning Media

Preparation

Before the training implementation, the student team, lecturers, and the head of the MGMP IPS for SMP/MTs across Padang City conducted a discussion or Focus Group Discussion (FGD) to discuss the technical preparation of the activity and ensure the readiness of tools, materials, and the selection of the training venue (Suciani et al., 2025).



Figure 2 Preparation Discussion for the Raised-Relief Map Training by the Lecturer Team and the Head of the MGMP IPS for SMP/MTs

The main focus of this community service training is to demonstrate the creation of raised-relief map learning media, connecting it to the topic of Indonesia's geographical conditions. This material was chosen because it involves learning about Indonesia's location and the natural features found throughout the country (Irmawati et al., 2017).

These natural features are represented on a map to resemble actual landforms, including mountains, highlands, lowlands, rivers, shallow seas, deep seas, and lakes, adjusted according to variations in the Earth's surface elevation (topography).

The planning of this activity required thorough preparation to ensure that the implementation process would run smoothly and produce the expected outcomes. Before the preparation stage, the lecturers, together with the student team and the head of the MGMP IPS for SMP/MTs, conducted an observation visit to SMPN 13 Padang City to directly assess the training venue conditions and determine the administrative requirements needed, such as invitation letters, attendance lists, and permission letters. They also formed an organizing committee consisting of facilitators, field coordinators, documentation teams, and logistics teams. The schedule was then arranged in coordination with the IPS teachers' availability and the facility schedule at SMPN 13 Padang City.

Training Implementation

The training on developing raised-relief map learning media was conducted in one day, on August 20, 2025, at SMPN 13 Padang City. The training event was attended by 54 participants. The participants of this activity were social studies (IPS) teachers who are members of the MGMP IPS for SMP/MTs across Padang City. This program was designed to enhance teachers' understanding and skills in developing innovative learning media, such as raised-relief maps, connected to the topic of Indonesia's geographical features. The training method combined lectures (delivering material on the importance of integrating learning media into each subject, particularly in social studies) with a hands-on demonstration of creating raised-relief map projects of Sumatra Island and West Sumatra Province.

The following is an explanation of the community service (PKM) activity on raised-relief map training:

a. Opening Remarks

The raised-relief map training event began with opening remarks from the head of the Social Studies Teachers' Association (MGMP IPS) for SMP/MTs in Padang City. The training activity was considered highly effective, as it broadened teachers' perspectives, particularly on the importance of enhancing learning effectiveness by integrating instructional media into the teaching and learning process.

The purpose of this activity was to enhance teachers' skills in developing raised-relief map learning media using simple tools and the engraving technique in the map-making process. In conclusion, the head of the MGMP expressed that social studies teachers have great expectations for the university, particularly through this community service (PKM) program, to continue organizing similar training activities with various diverse and up-to-date social studies learning topics.

b. Discussion and Q&A Session

The discussion and Q&A session was conducted to assess participants' satisfaction, understanding, feedback, and the challenges encountered during the training process. This session provided an opportunity for interaction between the presenters and the participants (teachers), aiming to make the training activities more focused and effective in their implementation.

The next activity was a presentation delivered by Mr. Jasrio Effendi, M.Pd, a lecturer of the Learning Media course, who discussed the topic of Indonesia's geographical conditions combined with the discussion on learning media.



Figure 3 Presentation on the Role of Learning Media in the Learning Process

In Figure 3, the presentation on the role of learning media in the teaching and learning process is delivered in front of the training participants, who are social studies teachers. The topics presented include a general overview, case studies in learning, and the latest information related to learning media. Participants were provided with updated insights on learning media and discussed real classroom cases experienced by teachers regarding the use of instructional media.

The presenter also explained, from a theoretical perspective, the materials used and the step-by-step process of creating raised-relief maps.

c. Demonstration

The demonstration involved assigning a hands-on training task to the participants, who were social studies teachers, by dividing them into two groups. Each group consisted of about 20–25 members. The activity focused on the creation of raised-relief maps of Sumatra Island and West Sumatra.

The teachers carried out their work based on the instructions provided by the lecturers and the student team. The task was completed up to 50% of the total process, including painting, distinguishing elevation levels using color variations, and composing the map legend.

Participants worked in their respective groups with assistance and guidance from the PKM student team, who distributed the materials and tools needed for making the raised-relief maps. Throughout the map-making process, the participants were supervised by the lecturers and student team. If any difficulties were encountered, immediate assistance was provided by the PKM team. The following figure shows the participants during the raised-relief map training activity:



Figure 4 Demonstration Activity on Making Raised-Relief Maps

Figure 4 shows that the participants were very enthusiastic during the raised-relief map-making activity, and it can be seen that the PKM team immediately assisted participants whenever difficulties were encountered.

One of the main challenges faced by social studies teachers in teaching the topic of Indonesia's geographical conditions is that the material is often considered abstract. From the discussion results, many teachers expressed difficulty in explaining the relationship between physical landforms and occupational activities. In this context, the raised-relief map serves as a valuable tool, as it visually represents the Earth's surface with color distinctions based on elevation levels. This helps students better visualize landforms and understand their connection to the livelihoods of local communities. After the demonstration activity was completed, each group of participants or teachers was asked to present the results of their work.



Figure 5 Presentation of the Completed Raised-Relief Map Media

The training participants or teachers presented the process of creating the raised-relief maps, explained the mapping principles, and related the maps to the topic of Indonesia's geographical conditions, including the influence of elevation on human occupational activities.

d. Feedback

The feedback from participants toward this community service (PKM) activity was considered positive. This was reflected in the participants' impressions and suggestions, expressing their hope that similar activities would be regularly organized by Universitas Negeri Padang.

Evaluation and Sustainability

Evaluation aims to measure the level of success of the training and mentoring activities conducted (Kusnayadi et al., 2019). The evaluation is divided into two stages. The first stage is the process stage, which is assessed during the training implementation. This stage evaluates participant attendance and the training process to determine whether the training was effective or not. The second stage is known as the final stage, which evaluates the level of success in creating raised-relief maps and the ability to utilize these maps as learning media in various social studies topics related to mapping.

After the raised-relief map training activity was completed, it was important to ensure the sustainability of the program (Ambiyar et al., 2024). The community service team, consisting of lecturers and students, designed a strategy to maintain the program's continuity by establishing a learning community in the form of a WhatsApp online group among MGMP IPS teachers and the service team. This group serves as a discussion forum for issues related to learning media and the topic of Indonesia's geographical conditions, allowing teachers to directly consult and share experiences.

The creation of this forum has proven effective in supporting the sustainability of the PKM program, as it helps address various challenges through collaborative discussion. It is also expected that the integration of this learning media can be incorporated into the curriculum, making it an essential part of the teaching and learning process.

Challenges in the Training

Based on observations from the training conducted at smpn 13 padang city, several issues were identified in the teaching and learning process of social studies. The main problem found was the limited use of learning media during lessons and the lack of concrete media creation, which affected the low level of interaction between students and teachers, particularly when teaching topics related to indonesia's geographical conditions (chandra et al., 2019).

This training focused on the development of raised-relief maps as learning media. Through these maps, teachers can facilitate students in discovering geographical concepts on the earth's surface by observing land and water features represented in different colors according to elevation levels. This direct observation of the physical form of the raised-relief map helps students better understand spatial characteristics (husna et al., 2016).

One of the challenges encountered during the training was that some social studies teachers in padang city, who were members of the mgmp ips, did not attend the raised-relief map-making workshop held at smpn 13 padang city. However, overall, the implementation of this activity has successfully encouraged teachers to develop innovations in teaching, both theoretically and practically, through a contextual learning approach that enhances students' problem-solving skills.

CONCLUSIONS

The raised-relief map training proved to be effective in enhancing teachers' competence in developing innovative learning media for social studies subjects. By mastering the stages of map creation from sketching, preparing paper pulp, drying, coloring, to arranging the map legend teachers gained practical skills that can be directly applied in the classroom.

Raised-relief maps provide a tangible and interactive representation of Indonesia's diverse topography, making it easier for teachers to explain the relationship between geographical conditions and human activities. Therefore, raised-relief maps should continue to be promoted as a contextual, engaging, and effective alternative learning medium to support the success of social studies education.

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