

Student Empowerment SMAN 5 Sigi: Geoliteracy, Local Wisdom, and Disaster Preparedness

Widyastuti^{1*)}, Amalia Novarita²⁾, Suwarni³⁾

Pendidikan Geografi, FKIP, Universitas Tadulako, Indonesia^{1), 2), 3)}

email: widyty@gmail.com¹⁾; amaliiiaanovarita@gmail.com²⁾; arniimeander@gmail.com³⁾

Dikirim: 07 Desember 2023	Direvisi: 7 Juli 2024	Diterbitkan: 28, Februari, 2025
---------------------------	-----------------------	---------------------------------

Abstract

This literacy empowers communities to devise fitting strategies and actions in line with their specific conditions. Local knowledge-based disaster literacy plays a crucial role during disasters. Consequently, it can decrease disaster impact, raise community resilience, and facilitate recovery in the aftermath. This service aims to assess students' level of geoliteracy about disaster-related information and encourage them to craft disaster education posters informed by local wisdom. This program relies on mentoring and demonstrations, designed to employ clear and accessible language for the students. Implementing geoliteracy services for students at SMA Negeri 5 Sigi, specifically making disaster education posters based on local knowledge, is an effective method to enhance students' comprehension of disaster mitigation while preserving the surrounding culture.

Keywords: Geoliteracy, Disaster, Local Wisdom, Poster

INTRODUCTION

As a Natural Disaster Laboratory, Indonesia is very vulnerable to disasters. The numerous disaster events throughout the year undoubtedly contribute to this vulnerability. In 2022, Indonesia experienced 3,544 natural disasters, with floods accounting for 1,531 of these events (Rosyida et al., 2023). Kulawi District in Sigi Regency, Central Sulawesi Province, is one of the most disaster-prone areas in Indonesia (BPS Kabupaten Sigi, 2022).

As a result of the disaster risk study, Sigi Regency has eight threats with a relatively high level of risk, including earthquakes, floods, landslides, flash flooding, droughts, extreme weather, and forest fires. Floods, with a puddle height of up to 70 cm, are a common disaster (Wijaya, 2021). The high potential for this disaster requires the community to gain knowledge on how to handle or prevent disasters, and then this method becomes a culture that is inherent in the values of local wisdom of the Indonesian nation and is maintained by local communities in Indonesia (Putri et al., 2021).

The level of disaster literacy in Indonesia is still low (Wijaya, 2021). Out of 70 countries, the literacy level in Indonesia ranks 62nd (Indonesia Literacy Level in the World, Ranking 62 out of 70 Countries (kemendagri.go.id)). The community needs to have disaster literacy; understanding disasters is an effort to make people aware of how to deal with disasters (Marlyono et al., 2016; Novarlia, 2013). Local wisdom is part of people's lives in terms of understanding, living, and facing all aspects of life. Community activities are based on the information of elders/ancestors to be implemented in life (Novarita et al., 2020; Suwarni, 2019). Disaster literacy based on local wisdom helps the community to develop abilities that follow local conditions and are community-oriented in overcoming disaster situations, thereby strengthening community resilience and sustainability (Adiputra, 2008; Mustofa, 2020).

Initial observations indicate that teachers introduce natural phenomena in classroom learning, particularly in geography and social studies, following the guidelines outlined in the textbook. Specifically, students in Sigi Regency lack knowledge about disaster literacy, which is rooted in local wisdom. The Government of the Republic of Indonesia, through Ministerial Regulation No. 64 of 2010, Articles 14 and 16, mandates the importance of disaster information literacy, stating that disaster mitigation encompasses both physical and non-physical activities. Community communication and education are part of non-physical disaster mitigation. Every sector, including the education sector, is experiencing an increasing need for information. Users use information as a medium to enhance their knowledge (Umasangadji et al., 2024).

The local community in Sigi Regency, Central Sulawesi Province, continues to cultivate local traditions and wisdom. Students' ability to understand disaster information is one of the most important elements in disaster management efforts. The fact that limited knowledge about disasters contributes to the increasing number of victims of natural disasters is a significant factor. Priowidodo & Luik (2013) found in their research that people experience increased anxiety when faced with natural disasters due to a lack of knowledge on how to mitigate these events.

Disaster education based on local wisdom can increase students' preparedness. Students' preparedness can significantly reduce disaster risk (Mustofa, 2020). The government and education units are trying their best to prepare a maximum learning process for students (Fernandez, 2024). For this reason, the purpose of this service is to mainstream disaster information by providing socialization and stimulating students to create educational posters related to disaster literacy based on local wisdom. This is done to ensure that pupils have an early understanding and awareness of threats and how to reduce disaster risk when disasters occur, both at school and outside of it.

METHOD

Twenty students from class XI at SMA Negeri 5 Sigi participated in the implementation. We carry out the service in three stages. **In the first stage**, the service group conducted a preliminary survey to find out the field conditions. We make observations to pinpoint the issues students are facing. Additionally, **the second stage** involves implementing the service, which includes the following activities:

- (1) Students in the Kulawi area of Sigi Regency participate in a socialization program about disaster literacy, which is based on local wisdom. Before initiating the socialization, the service team directly administers a pretest to the students. Next, the service team delivers the material to the students using Mrs Suwarni's lecture method.
- (2) The service team provided the students with the material through the lecture method, and Mrs Amalia and Mrs Widyastuti led discussions on disaster geography literacy, drawing on local wisdom for disasters in Kulawi, Sigi Regency. Disaster information literacy consists of four parts: knowing the source of disaster information, evaluating disaster information, organizing disaster information, and utilizing and conveying disaster information. Additionally, the Sigi Regency introduced participants to local wisdom concerning disaster literacy. In the Kulawi region, earthquakes, floods, and landslides are the most common disasters.

- (3) The service team involves students in creating disaster education posters that reflect local wisdom. Through mentorship, the team encourages students' creativity in making posters based on local wisdom to help them understand the importance of disaster preparation and mitigation in their area.
- (4) The service team and the service assistance team directly administered the post-test to the students after creating posters and showcasing the participants' work.

The third stage involves written reporting. Overall, the stages of service are shown in Figure 1.

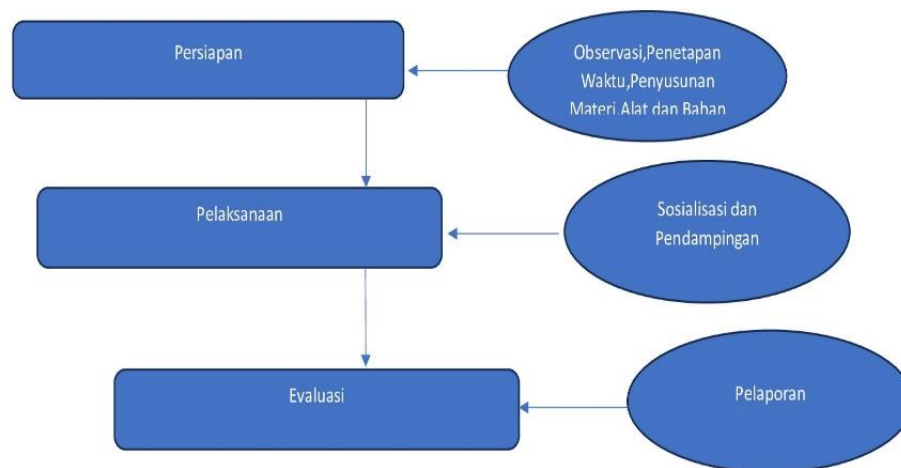


Figure 1. Flow of service activities

RESULTS AND DISCUSSION

On July 4-5, 2023, SMA Negeri 5 Sigi, Kulawi District, hosted Community Service (PKM). Twenty students from class XI participated in this activity, which ran from 08.00 to 12.00 WITA. Overall, the details of the activities carried out during PKM are as follows:

The socialization of disaster literacy, grounded in local wisdom, showcases various disaster threats like earthquakes, floods, and landslides in Kulawi District (Figure 2). This socialization also discusses the community's inherited local wisdom as a strategy for disaster mitigation and adaptation.



Figure 2. Presentation of material

Following the socialization, the activity proceeded by encouraging students to express their creativity through the creation of disaster education posters, drawing inspiration from local wisdom, and dividing them into groups. We assigned each group the task of creating posters that illustrated the aspects they had learned during the socialization (Figure 3). This poster's creation aims to strengthen students' understanding through visual expression while increasing their involvement in the learning process.



Figure 3. Poster Creation

Next, the posters that have been made by each group are presented as seen in Figure 4. SMA Negeri 5 Sigi displayed the posters both indoors and outdoors.



Figure 4. Poster presentation by students

The final step, known as the evaluation stage, involves assessing the posters created by the socialization participants. According to the service instrument, the average level of geoliteracy among students at SMAN 5 Sigi was 85.71%. This stage allows for further input and improvement. We carried out the evaluation by collecting data from socialization activities, and figure 5 shows the results.

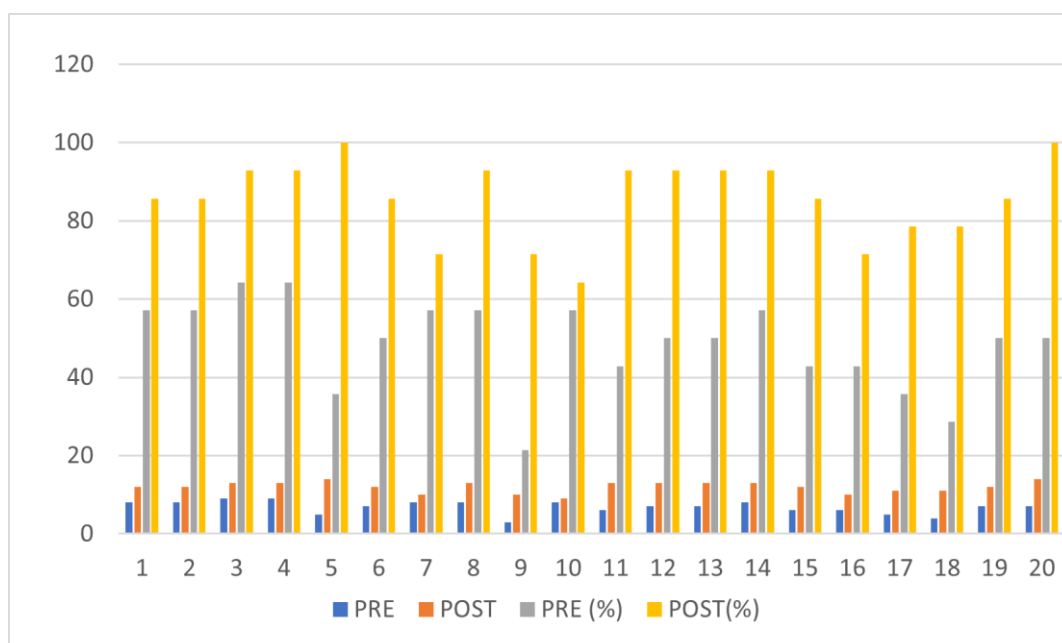


Figure 5. Diagram of pre-test and post-test results

Before initiating socialization, the service team-prepared presenter directly administers a pretest to students to gauge their comprehension of disaster literacy. According to the service instrument, the average level of geoliteracy among students at SMAN 5 Sigi was 48.58%. Then, after the posttest, student comprehension increased by 37.13%. From the socialization

materials used, it is evident that the community still incorporates a significant amount of local wisdom, which manifests in the form of habits, activities, and community ethics. The community primarily consumes natural resources to support post-disaster food security, and they also use these materials in their housing. Students in Kulawi District gain a deeper understanding of local wisdom through socialization activities, as the community inherits more of it. Socialization serves as a means of raising awareness about disasters for educational purposes (Mustofa, 2020; Qurrotaini et al., 2022). Students can better understand disaster risk and mitigation measures through socialization (Nurjannah, 2021). The following are the socialization materials given to students (Figure 6).

LITERASI, BENCANA, KEARIFAN LOKAL

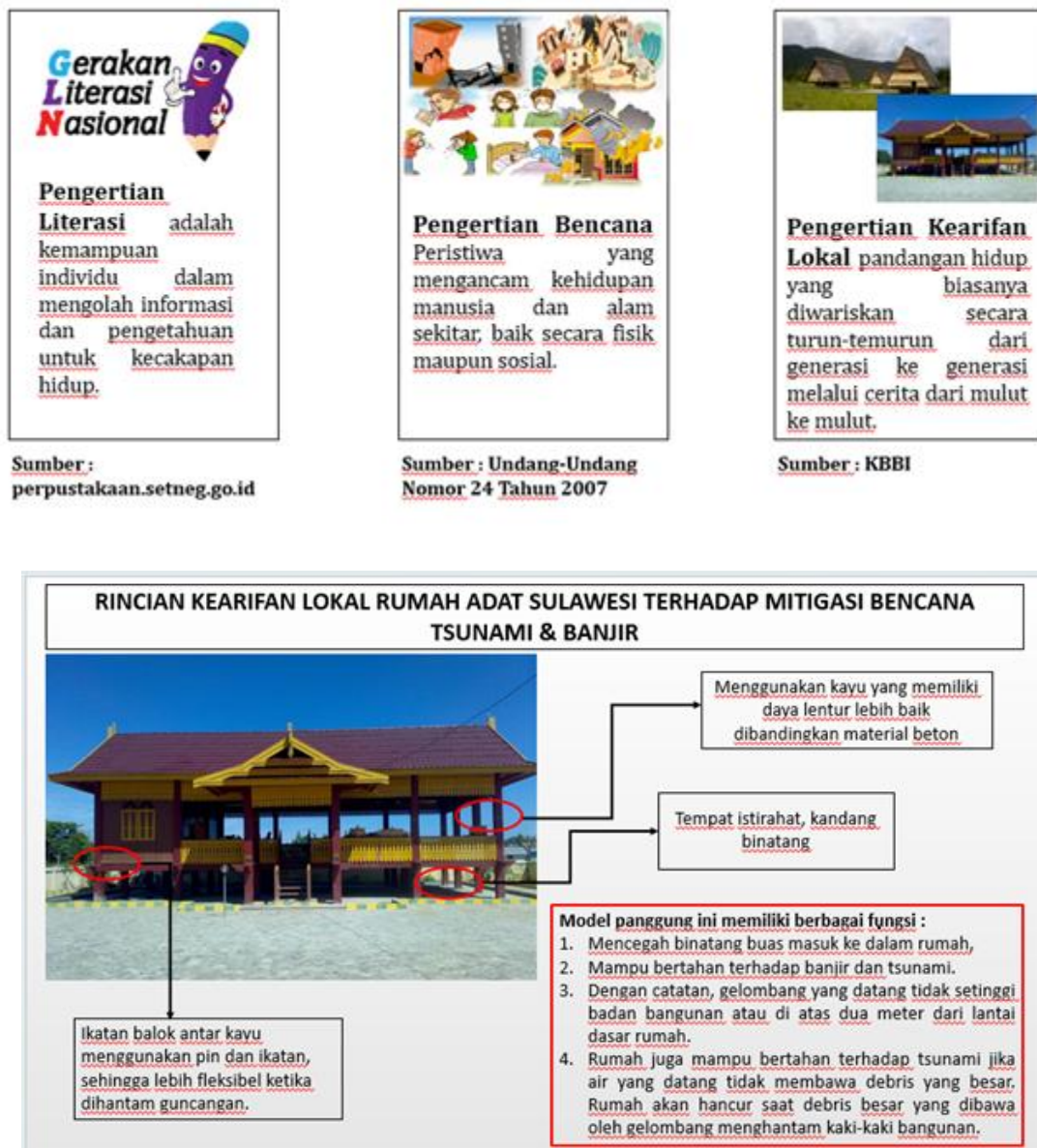


Figure 6. Some of the socialization materials

All parties must regularly engage in service activities in disaster-prone areas. Disaster simulation by the school will improve disaster mitigation. Making posters is an effective first step in improving students' geoliteracy. The education sector must implement disaster risk reduction priorities to cultivate a generation resilient to disasters. This aligns with Pahleviannur (2019) assertion that awareness education activities, aimed at reducing disaster risk in an area, can enhance understanding of disasters.

Involving students in creating disaster education posters based on local wisdom is a simple yet effective step they can take. This aligns with Talan et al., (2020) findings, indicating that students' creativity is discernible through their high level of activity and their capacity to select intriguing features. Through this activity, students not only learn about disaster mitigation but also explore local wisdom that may already be known but not fully understood. By being creative in creating posters, students can more easily internalize information and relay it in a way that is interesting and easy for others to understand. Teachers and the school community's active participation in this activity will enhance their knowledge and comprehension of disaster mitigation, while also ensuring the preservation of local cultural heritage. Thus, all parties in the school can contribute to building awareness and preparedness to face disasters.

CONCLUSIONS AND SUGGESTIONS

The results of service activities at SMA Negeri 5 Sigi indicate a 37.13% increase in student's knowledge and understanding of disaster-related geoliteracy. The process of making posters involving students is intended to provide opportunities for the younger generation to participate in understanding and preserving their local wisdom actively. As part of their responsibilities, they should comprehend the significance of disaster preparedness and mitigation in their respective regions.

ACKNOWLEDGMENTS

The devotion team would like to express their gratitude to Tadulako University for funding this activity through the Faculty of Teacher Training and Education (FKIP) and the Institute for Research and Community Service (LPPM), ensuring its smooth and successful execution.

REFERENCE

- Adiputra, W. M. (2008). Literasi Media dan Interpretasi atas Bencana.pdf. *Jurnal Ilmu Sosial Dan Ilmu Politik*, 11(3), 287-414.
- BPS Kabupaten Sigi. (2022). *STATISTIK DAERAH KABUPATEN SIGI 2022*. Biro Pusat Statistik Kabupaten Sigi. <http://journal.um-surabaya.ac.id/index.php/JKM/article/view/2203>
- Fernandez, A. J. (2024). Penguatan Pemahaman Implementasi Kurikulum Merdeka Bagi Komite Pembelajaran. *Bakti Cendana*, 7(1), 76-82. <https://doi.org/10.32938/bc.7.1.2024.76-82>
- Indonesia Literacy Level in the World, Ranking 62 out of 70 Countries - Amir Machmud Library (kemendagri.go.id)
- Marlyono, S. G., Pasya, G. K., & Nandi. (2016). Peranan Literasi Informasi Bencana Terhadap Kesiapsiagaan Bencana Masyarakat Jawa Barat. *Jurnal Pendidikan Geografi*, 16(2), 116-123.

<https://doi.org/10.17509/gea.v16i2.4491>

- Mustofa, M. (2020). Pendidikan Kebencanaan Berbasis Kearifan Lokal Dalam Penguatan Karakter Siapsiaga Bencana. *Geodika: Jurnal Kajian Ilmu Dan Pendidikan Geografi*, 4(2), 200-209. <https://doi.org/10.29408/geodika.v4i2.2776>
- Novarita, A., Ferdi, Suryono, H., & Lusikoy, F. G. (2020). Eksistensi tradisi Nosemparaka manu di tengah masyarakat Desa Wombo Kecamatan Tanantovea Kabupaten Donggala.
- Novarlia, I. (2013). Model Pembelajaran Berbasis Literasi Geografi Dalam Upaya Membangun Kecerdasan Ruang Peserta Didik (Vol. 53, Issue 9) [Universitas Pendidikan Indonesia]. <https://doi.org/10.1017/CBO9781107415324.004>
- Pahleviannur, M. R. (2019). Edukasi Sadar Bencana Melalui Sosialisasi Kebencanaan Sebagai Upaya Peningkatan Pengetahuan Siswa Terhadap Mitigasi Bencana. *Jurnal Pendidikan Ilmu Sosial*, 29(1), 49-55. <https://doi.org/10.23917/jpis.v29i1.8203>
- Priyowidodo, G., & Luik, J. E. (2013). Literasi Mitigasi Bencana Tsunami untuk Masyarakat Pesisir di Kabupaten Pacitan. *Ekotrans*, 13(1), 47-61. <https://erepo.unud.ac.id/id/eprint/21432/1/8ab08cad8d0229afd065504424d53330.pdf>
- Putri, A., Putri, F., & Suprihani, E. (2021). Pengelolaan Tanah dan Air Berbasis Kearifan Lokal Untuk Mencegah Bencana Alam Longsor. *Proceedings Series on Social Sciences & Humanities*, 1, 141-146. <https://doi.org/10.30595/pssh.v1i.88>
- Qurrotaini, L., Amanda Putri, A., Susanto, A., & Sholehuddin, S. (2022). Edukasi Tanggap Bencana Melalui Sosialisasi Kebencanaan Sebagai Pengetahuan Anak Terhadap Mitigasi Bencana Banjir. *AN-NAS: Jurnal Pengabdian Masyarakat*, 2(1), 35. <https://doi.org/10.24853/an-nas.2.1.35-42>
- <https://doi.org/10.24853/an-nas.2.1.35-42>
- Rosyida, A., Aziz, M., Firmansyah, Y., Setiawan, T., Pangesti, K. P., & Kakanur, F. (2023). Profil Kebencanaan Daerah Tahun 2022 (Vol. 2). Pusat Data Informasi dan Komunikasi Kebencanaan (BNPB).
- Suwarni. (2019). Nilai-nilai kearifan lokal Ritual Maccera' Tappareng Dalam Danau Tempe, Kelurahan Kaca, Kecamatan Marioriawa, Kabupaten Soppeng.
- Talan, M. R., Lein, A. L., & Nahak, K. B. (2020). Pemanfaatan Infografis Dalam Gerakan Literasi Sekolah Di Smk. *Bakti Cendana*, 3(2), 85-91. <https://doi.org/10.32938/bc.v3i2.555>
- Umasangadji, F. M., Suhada, D., Ratu, N. C., & Widiastuti, T. (2024). Rancang Bangun Website Profil Sebagai Sarana Penyebaran Informasi dan Promosi di SMA Negeri 9 Kupang. *Bakti Cendana*, 7(1), 21-29. <https://doi.org/10.32938/bc.7.1.2024.21-29>
- Wijaya, R. C. (2021). Potensi Banjir Bandang Pada Wilayah Sigi Sulawesi Tengah Indonesia. *Borneo Engineering*, 5(2). <https://doi.org/10.35334/be.v5i2.1838>