

The use of local landscape as a field laboratory for geography of education

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Informasi artikel	A B S T R A K
<i>Sejarah artikel</i>	
Diterima : 26 Aug 2019	Keterampilan geografis yang perlu dimiliki oleh setiap geografer pada umumnya yaitu keterampilan peta, keterampilan lapangan, dan keterampilan interpretasi citra satelit. Untuk mencapai kompetensi keterampilan lapangan diperlukan suatu lokasi untuk dapat dijadikan bahan untuk kajian praktikum setiap mata kuliah. Laboratorium Lapangan Pendidikan Geografi dapat dikaji secara mendalam berdasarkan analisis tingkat kebutuhan pembelajaran. Basis kebutuhan lokasi praktikum sebagai laboratorium dilihat dari fungsi laboratorium sebagai suatu kawasan untuk melakukan pengujian dan pengukuran secara cermat dan akurat atas fenomena yang diteliti. Kajian dilakukan melalui identifikasi lansekap lokal dengan mendeliniasi kawasan melalui pemanfaatan citera satelit, dan identifikasi potensi dari setiap kawasan yang terpilih secara deskriptif. Dalam kajian ini, kawasan Gunung Galunggung dapat dijadikan sebagai Laboratorium Lapangan Fisik Pendidikan Geografi dan Kampung Naga dapat dijadikan sebagai Laboratorium Lapangan Geografi Sosial dan Budaya.
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A B S T R A C T	
Keywords:	Geographical skills that need to be shared by each geographer in general are map skills, field skills, and satellite image interpretation skills. To achieve field skills competency, a location is needed to be used as material for practicum studies for each subject. The Geography Education Field Laboratory can be studied in depth based on an analysis of the level of learning needs. The basis of the lab location requirements as a laboratory is seen from the laboratory function as an area to carry out careful and accurate testing and measurement of the phenomenon under study. The study was carried out through the identification of local landscapes by delineating the area through the utilization of satellite citera, and identifying potential from each area that was chosen descriptively. In this study, the Gunung Galunggung area can be used as a Physical Field Laboratory for Geography and Kampung Naga Education can be used as a Field Laboratory for Social and Cultural Geography.

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Introduction

The ability to solve a problem and making a decision is an important thing to be built within the student's self. Generally, the learning process in classroom provides knowledge and experience to students to obtain knowledge information. Geography teachers are not only limited to transfer the theoretical knowledge, but also have to have a responsibility to improve students intellectual abilities, especially to develop relevant skills in problem solving and decision making and it can only be obtained by field learning.

Educational geography needs scale models, properties, and actual field learning that have relevance in learning geosphere in purpose to achieve the teaching competence. In addition, the need of development in the field of geography requires detailed and in-depth analysis, which requires a minimum standard of geography's laboratory. The needs of applied research in geographical sciences should be able to provide solutions related to location,

remembering the location is an important thing in geography.

A comprehensive geographical review model to demonstrate to the community a geographical solution to certain environmental problems is needed. Field laboratories are required to support the learning process in the classroom, remembering the practice in laboratories, field observations and field visits are fundamental for earth sciences, environmental sciences, and geography (Ramasundaram, Grunwald, Mangeot, Comerford, & Bliss, 2005). Fieldwork in Geoscience today has changed and developed due to the increase in technology and the need to keep up with the rapid pace of modern day life (Fuller, 2012) 1. Open space offers opportunities that are not found indoor learning process, and physical environment contributes in student's learning process with the skills they have. An open space which was designed for learning process is needed because it can be useful when they contribute in learning process throughout the classroom.

Spatial ability is a mental capacity to manipulate visual patterns, as demonstrated by the level of difficulty and complexity in visual stimulus materials that can be handled successfully (Carrol, J, 1993; Kell & Lubinski, 2013). In geography, spatial ability is one of the essential abilities to be possessed by geographers, considering the geographic skills in general have three main skills: map skills, field skills, and interpretation skills for photography (Monk & Alexander, 2007). With spatial skills, student could understand the environmental characteristics, problems that are found in the environment and problem solving.

As owned by KSDH Field Laboratory (forest resource conservation) and Ecotourism in Hasanuddin University, the diversity of vegetation and animals must be developed for educational, research and Community service (Achmad, Ngakan, Umar, & Asrianny, 2012). The same thing is also done by Indrayati & Setyaningsih in 2017 which examines Rembang Regency as geo-tourism and field laboratory geography. The function of field laboratories can be utilized as geo-study, in outdoor study activities, including

field observation activities, photography, landscape, natural resource study, and for geography learning interests.

It could be used as a reference to develop similar things in Tasikmalaya, Given that Tasikmalaya's has a potential and is very diverse both from the aspect of physical, social and cultural diversity. That could be used as a starting point to develop field laboratories for Geography Education Department in Universitas Siliwangi. The conditions of local landscape can be utilized as a field laboratory for geography education and can be examined based on the field of study and analysis needs of Geosphere (lithosphere, hydrosphere, atmosphere, biosphere and anthroposphere).

Methods

The study of local potentials for development as a Geography education field laboratory in this matter is examined by two aspects: physical geography, and social geography and culture. The identification is based on the complexity of field in Geography Education Department. Area analysis is done by several stages, which are creating delineation area by utilizing satellite imagery; field survey; and study focused only two analyses namely, analysis of field needs for study of physical geography (hydrosphere, Biosphere, and lithosphere, and the land landscape) and social and cultural geography review.

The research was conducted with a descriptive analysis on two locations, Mount Galunggung and Kampung Naga. These considerations are based on the region's consideration that both regions have the potential to serve as a laboratory function of geography education field.

Result and discussion

Potential area of Gunung Galunggung as an outdoor laboratory for physical Geography

The best method to learn geography is through field observation investigation, or exploring a geosphere phenomenon. Geographic phenomena are often become the core topics and problems that are directly relevant to student life (Butzow, 2019; Waite, Morrill, & Dulli, 2017).

The area of Mount Galunggung is administratively included into the government of Sukaratu subdistrict, Tasikmalaya Regency. The location is located about 17 km from downtown Tasikmalaya and 8 km from the capital of Tasikmalaya Regency. Mount Galunggung has an altitude of 2,168 meters above sea level or 1,820 meters from the mainland of Tasikmalaya city.



The astronomical location is at coordinates 7.25° - 7° 15' 0" south and 108,05°-108° 3' 30" east. Gunung Galunggung area has a potential that could be used as a field laboratory with integrated tourism area. Gunung Galunggung area is known as an attraction area in Tasikmalaya because it has an interesting landscape.



Figure 1. The area of Mount Galunggung

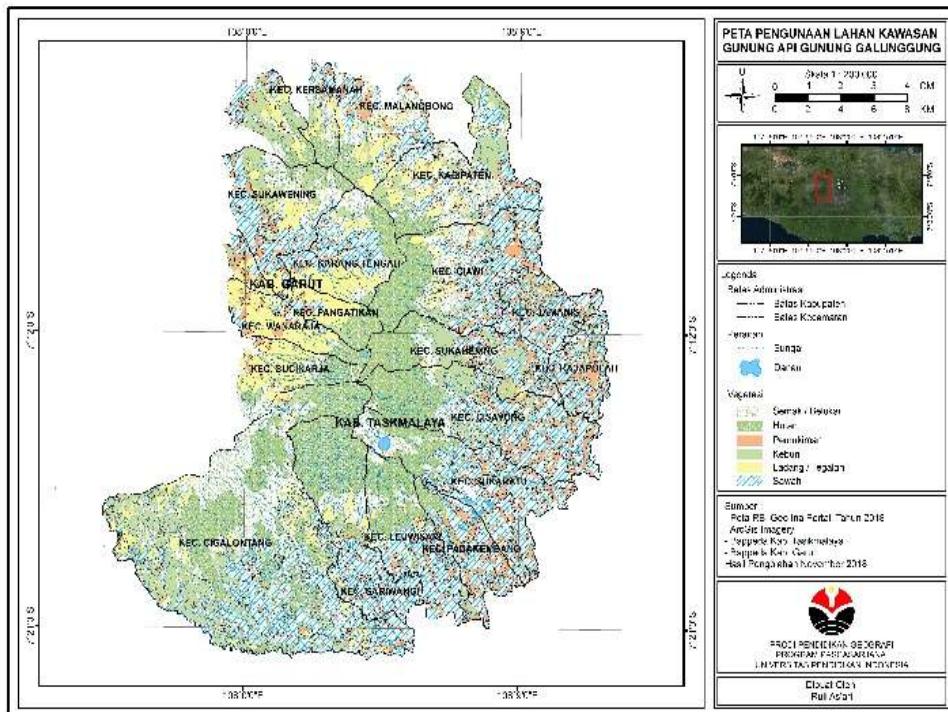


Figure 2. Map of Mount Galunggung

Below are the potential areas of Mount Galunggung that could be used as an outdoor laboratory:

1. Laboratory of flora and fauna

Based on the field survey, Mount Galunggung has a various species of vegetation and animal. Based on the results of the study, there are 20 types of 9 families of Chichlidae which is the dominant species with six types (Haryono, 2013).

Aside from aquatic zone, the endemic vegetation of Mount Galunggung are *Anapalis Javanica*, *Nephentes*, and the family of orchid. The area of Mount Galunggung has become the main contributor of a high oxygen level. Based on the explanation, there are four potential areas in Mount Galunggung that could be an outdoor laboratory for biosphere study, which are Mount Dinding, Mount Siang, Mount Guntur, and Mount Beuti Canar.

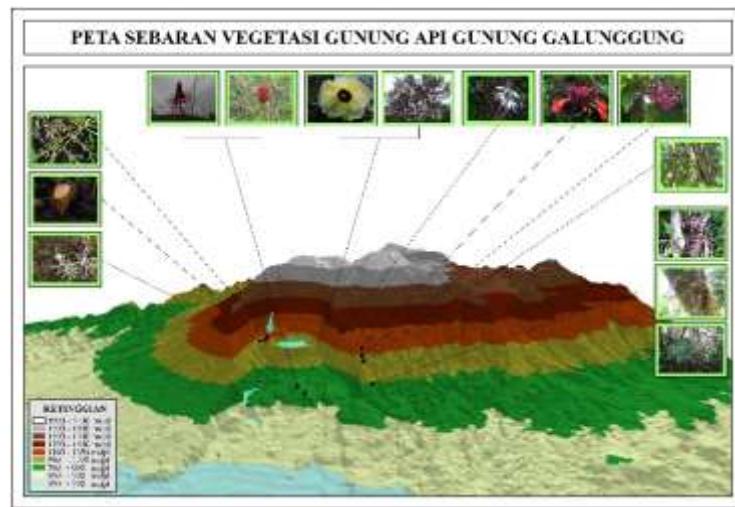


Figure 3. Map of the distribution of endemic vegetation in Mount Galunggung

2. Laboratory of morphology and mitigation

Mount Galunggung has well-known history related to its eruption in the past. Based on the eruption history, Mount Galunggung has been erupted in 1822, 1894, 1918, and 1982. Mount Galunggung is one of the active volcanoes in Indonesia, in which has a huge chance to erupt anytime.

Mount Galunggung has a relation in morphology with Tasikmalaya city and district which is known as Bukit Sepuluh Ribu (The Ten Thousand Hills of Tasikmalaya). Based on geological aspect, the hills in Mount Galunggung area are a natural form that includes to one of the wonders. Besides, the existence of the hills has a function as a natural fort from the possibility of lava flow from Mount Galunggung. Bukit Sepuluh Ribu has several functions, which are geological function, ecological function, hydrological function, aesthetic function, economic function, defense function, education function, and tourism function (Fadjarajani & As'ari, 2016). By looking at those functions, the objects study could be adjusted with the level of necessity of a field work in educational geography.

There are several models that can be used as a teaching material based on the morphology of Mount Galunggung, which are illustration and visual media with contextual learning.

Kampung Naga as a Socio-Cultural laboratory for Educational Geography

Kampung Naga is a village inhabited by a group of people who are vigorously upholding the customs of their ancestral (Gunara, 2017). The people of Kampung Naga live in an order which is situated in modesty and local wisdom (Nurjanah, 2013; Gunara, 2017) 2. Kampung Naga was located in Neglasari Village, Salawu, Tasikmalaya District. Kampung Naga is one of the villages in West Java which still maintain their traditional society. Kampung Naga has a distinct uniqueness compared to other societies. The area of Kampung Naga is 1.5 hectare. The uniqueness of Kampung Naga's society could be seen by their living values, in which still strongly maintained up until now. The society still holding on to their principles, etiquettes, and traditional values to make it sustainable as the time goes.



Figure 5. Area distribution of Kampung Naga based on satellite imagery

Based on its distribution, the areas are divided into three main areas, which are The Holy Area (restricted area that should be taken care of its sustainability), The Clean Area (area in which the citizen are living), The Dirty Area (particular area on the valley and located in the outer ring of Kampung Naga, normally used as lavatory and dump the waste) (As'ari & Hendriawan, 2016).

The uniqueness of Kampung Naga society could be used as a study of Socio-Cultural Geography. The values of Kampung Naga's local wisdom could be examined deeply and served as a source of learning and research development.



Figure 6. The settlement area in Kampung Naga

Based on the study of Kampung Naga's society, there are several findings that could be used as a basis in determining the study's location for developing the outdoor laboratory of educational geography, which are: 1) sustainable environmental development based on the local wisdom, 2) Integrated management of sustainable environment in a form of traditional

ceremonies, 3) Customary legal basis preserved in a form of taboos, prohibitions, and orders which has been internalized as a main principles of life, 4) Cultural inheritance system through traditional communities, families, and ceremonies, and 5) Sustainability in community systems and environmental management continue that has been passed from older generations to the

younger ones (As'ari, Rohmat, Darsiharjo, Maryani, & Ningrum, 2019).

Summary

The laboratory has a function to perform precise testing and measurement of the phenomenon that has been examined. The parameters of measurement are diverse according to the research. The development of Tasikmalaya's local potency could be used as an outdoor laboratory for educational geography which could be studied according to the necessity of the lessons. The indicators are divided based on the fields in geography, which are hydrosphere, lithosphere, anthroposphere, biosphere, and atmosphere. The development of the study could be deeply analyzed based on the needs. The area of Mount Galunggung could be used as an outdoor laboratory for physical geography and Kampung Naga could be used as an outdoor laboratory for socio-cultural geography. Both of the studies could be integrated as one package of field trip. In this case, Educational Geography program in Universitas Siliwangi applied it as a field trip in one particular lesson. The field trip could be used as an evaluation for the lesson in class.

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