Local Potential as Sources of Science Learning and Integration in Sets-Based Learning (Science, Environment, Technology, Society)

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Abstract. This study aims to identify the local potential of Kepahiang Regency as a science learning resource based on the perceptions of teachers in junior high schools and their integration into SETS-based learning. The method used in this research is a literature study and a survey using a questionnaire given to 33 science teachers. The next stage is mapping the local potential of Kepahiang Regency in SETS-based learning. The results of the questionnaire analysis showed that 51.5% of teachers strongly agree that natural resources can be used as a science learning resource, 63.6% of teachers agree that conservation areas can be used as a science learning resource, 84.8% of teachers agree that art can be used as a science learning resource and 72.7% of teachers agree that crafts can be used as a resource for learning science. The mapping results show that the local potential of Kepahiang Regency can be integrated into SETS-based learning. So it can be concluded that there are 4 local potentials of Kepahiang Regency that can be used as science learning resources, including the potential for natural resources, the potential for conservation areas, the potential for arts, and the potential for crafts. This potential can also be integrated into SETS-based learning.

Keywords: Organizational Commitment · School Culture · Teacher's Performance

1 Introduction

Science is a rational science that describes the life of living things systematically. The application of science in learning is generally limited to natural phenomena using scientific methods that provide opportunities for students to experiment according to the material being taught [1]. The purpose of learning science in schools is to develop curiosity, positive attitudes and awareness about the interplay of relationships between science, the environment, technology and society [2]. After participating in science learning, students are expected to have a scientific attitude to solve a problem using scientific stages [3]. Curiosity, respect for data, critical thinking, openness, cooperation and sensitivity to the surrounding environment are scientific attitudes that students must have [4].

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Local potential is the potential that exists in an area where the situation can be developed, so that it can provide benefits to the community. Local potential possessed by an area can be in the form of natural resources, industry, culture, services, artistic creations, and traditions that support the economy of the surrounding population [5]. Local potential in Kepahiang Regency, Bengkulu Province is very varied, consisting of several aspects including livestock, agriculture, energy sources, and tourism [6]. Teachers are expected to enrich students' knowledge in the form of activities that are appropriate to the social and natural environment around students [7]. Science learning using the SETS approach can connect the science concepts studied with the environment, technology and society as an integration so that students are faced with actual situations and conditions and are expected to be able to apply learning outcomes at school in everyday life [8–10]. The SETS approach has five components consisting of introduction, concept formation, concept application, concept consolidation and assessment. Furthermore, model SETS are very suitable for learning science [11].

Science learning in class is based on local potential and is integrated with the SETS approach (Science, Environment, Technology, Society) guiding students to gain knowledge in a meaningful way, this is because students are faced with real conditions in their daily lives [12], and raise problems that have scientific concepts that are developing around us such as thFe environment, technology and society [13]. In addition, one way to increase attitudes and sensitivity to the environment is to promote the values of local wisdom [14, 15].

This study aims to identify the local potential of Kepahiang Regency as a science learning resource based on the perceptions of teachers in junior high schools and see its integration into SETS-based learning. (Science, Environment, Technology, Society).

2 Methods

The method used in this research is a literature study and a survey using a questionnaire. The study began by seeking information about local potential in Kepahiang District and conducting a survey by giving questionnaires to 33 junior high school science teachers to find out teachers' perceptions of local potential-based learning.

Furthermore, an analysis of the local potential-based junior high school science material was carried out which. could be integrated into the SETS (Science, Environment, Technology, Society) approach. The data obtained were analyzed, presented, and concluded.

3 Results and Discussion

Local potential is a potential in an area that can be developed, thus providing benefits [16]. The general characteristics of local potential are that it exists in the environment of a community, the community feels ownership, is united with nature, has universal characteristics, is practical, easy to understand, and is a hereditary heritage. Kepahiang Regency which is located in the highlands has a cool climate so it has potential in the agricultural, livestock, fisheries, mining, and tourism sectors. Geographically, Kepahiang Regency is located between 101° 55' 19' to 103°01' 29' East Longitude and 02°43' 07'

Table 1. Local Potential of Kepahiang District

No	Category	Local Potential
1	Agriculture Sector	Kepahiang Regency which is located in the highlands has a cool climate, thus making agricultural products grow well. Because of this, Kepahiang Regency has an agricultural sector that should be taken into account, especially food crops, such as rice, corn, horticultural crops, and other secondary crops. Other mainstay commodities produced are coffee and pepper.
2	Tourism Sector	Panoramic potential of Kabawetan Tea gardens, Suro Lake, Waterfall Tours (Curug Embun Waterfall, Sengkuang Waterfall, Bukit Hitam Waterfall, Curug Terambon Waterfall), Flora (Raflesia Flowers), Musi Hydroelectric Reservoir, Hot Springs
3	Conservation area	Bukit Jupi has a lot of flora and fauna.
4	Cultural Potential of the Rejang Tribe (Arts and Crafts)	Types of dances: These include the Sekapur betel dance, the Kejei dance, the persistent dance, the Mendulah dance, the Semambe Cupik dance, the coffee picsking dance, the rice harvest dance, the Bujang Semulen dance for choosing rice. Types of folk songs: Includes gritan songs, mambak songs, nyerambeak songs, merjung songs. Other dominant types of culture: These include batik jang, bugei (traditional house), penan suhet, sihet, rikung (regional writing), tap rajo, calcidian stone axe, and cakup dryen.

Source: Department of Investment and PTSP of Kepahiang Regency

to 03°46' 48' South Latitude. This area is divided into a cultivation area of 48,177.69 hectares (72.45%) and a forest area of 18,322.31 hectares (27.55%). Like other regions in Indonesia, Kepahiang Regency also has a tropical climate with an average rainfall of 233.5 mm/month, with three dry months and nine wet months. The average relative humidity is 85.21% and the average daily temperature is 23.87 °C, with a low ambient temperature (15-240C) and has a wealth of natural resources that are beneficial to the community [17]. as well as potential used as a source of learning science in schools. Local potential has begun to be used as a learning resource in various schools as a place for cultural inheritance and the introduction of local potentials to students [18]. Integrated learning based on local wisdom can also fortify students from foreign cultural influences that can damage students' character [19]. The results of the analysis of the

Table 2. Perceptions of Junior High School Teachers in Kepahiang Regency on Local Potentials as Learning Resources

Statement	Answers (%)			
	SS	S	TS	STS
The local potential of the natural resources section can be used as a source for junior high school science learning	51,5	48,5	0	0
The local potential of the conservation area can be used as a science learning resource for SMP	63,6	36,4	0	0
Local potential in the arts can be used as a source of science learning	12,1	66,7	21,2	0
Local potential in the craft sector can be used as a science learning resource	6,1	72,7	21,2	0

perceptions of 33 junior high school teachers in Kepahiang Regency on local potential in science learning can be seen in Table 1 (Table 3).

In general, the data in Table 2 states that the local potential in Kepahiang Regency can be used as a science learning resource. The local potential in Kepahiang Regency consists of natural resources, conservation areas, arts and crafts. Learning using the SETS approach is an integrated learning that is able to teach students to have the ability to look at things in an integrated manner by paying attention to four elements, namely Science, Environment, Technology, and Society [10]. In addition, SETS learning will also reconstruct students related to critical social, decision making, action, and sustainability [20]. The application of the SETS approach to science material will guide students to think globally and act to solve environmental problems, both the local environment and environmental relations with everything related to society and participate in problem solving according to their capacity [21].

In Table 2 it is known that 21.2% of teachers do not agree that the arts and crafts can be a source of science learning, this condition is due to the lack of information about local potentials that can be integrated into learning. In dance students can observe various kinds of body movements, especially hand and foot movements. This potential can be used as material for science learning about the relationship between tissue structures and organ system structures [22].

Table 3. Potential Locations and Applications in Science Materials with the SETS Approach.

Local Potential	IPA Material	SETS Approach (Science, Environment,Technology, Society)
Natural Resources	Measurement	1. Carry out scientific activities such as measuring the temperature of hot water baths and measuring the mass of kabawetan tea leaves. 2. Collecting information about issues that develop in the community related to learning materials. 3. Using technology to summarize the results of activities. 4. Presenting the results of activities in front of the class
Conservation area	Classification of Living Things	1. Carry out scientific activities by taking an inventory of living and non-living things on Jupi Hill. 2. Gathering information about issues that are developing in the community related to Bukit Jupi 3. Using technology to summarize the results of activities in Bukit Jupi and look for characteristics of living things on the internet. 4. Presenting the results of activities in front of the class.
Art	Motion System	1. Carry out scientific activities by observing the activity of the muscle contractions of the hands and feet of a dancer. 2. Collecting information about issues that develop in the community related to the material being studied. 3. Using technology to understand how muscles work. 4. Presenting the results of activities in front of the class.
Craft	Environmental pollution	1. Carry out scientific activities by observing environmental pollution due to waste from craft activities. 2. Gather information about issues that develop in the community related to crafts. 3. Using technology to find solutions to environmental pollution problems. 4. Presenting the results of activities in front of the class.

4 Conclusion

The results of the analysis of teacher perceptions in Kepahiang Regency, Bengkulu Province have 4 local potentials that can be used as science learning resources, including the potential for natural resources, the potential for conservation areas, the potential for arts, and the potential for crafts. This potential can also be integrated into SETS-based learning.

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