Evaluation of garden functions of SMAN 2 Lubuk Basung as science-based education park

Afrinaldi1,2 and H Rifai2,*

1Senior High School 2 Lubuk Basung, Agam District, West Sumatera, Indonesia
2Department of Physics, Faculty of Mathematics and Natural Sciences, Universitas Negeri Padang, Jl. Prof Hamka, Padang 25131, Indonesia

*rifai.hamdi@gmail.com

Abstract. The background of this research is to see how far the SMAN 2 Lubuk Basung park can function as a science-based education park (Edupark). The purposes of the research are to evaluate the function of SMAN 2 Lubuk Basung garden as a science-based Edupark as a learning medium as well as to provide recommendations or input on the use of the park to produce a science-based edupark that is more functional, clean, neat and well-maintained. This study uses a method of observing park user activity and polling methods by distributing questionnaires to 70 students. The data obtained in this study are presented in the form of tables, mapping, documentation, and description. Based on observational data and questionnaires on student activities, the function of the park as a science-based edupark has not been used to its full potential. The results of the calculation of the questionnaire on 70 students with a percentage 44.3% of leisure activities, 35.7% of photo activity, 8.57% of sports activities and 11.43% of learning. Based on the questionnaire data on the supporting elements of the activity contained in the park, it shows that Edupark of park at SMAN 2 Lubuk Basung has not been used optimally as a science-based edupark, as evidenced by the results of questionnaire calculations on 70 respondents that the percentage obtained was 50% for very decent category, 21.4% for a decent category and 11.4% for an inappropriate category.

1. Introduction

Physics is one of the branches of science that underlies the development of advanced technology and the concept of living in harmony with nature. As a science that studies natural phenomena, physics also provides good lessons to live in harmony based on natural law. Management of natural resources and the surrounding environment will not run optimally without a good understanding of physics. SMAN 2 Lubuk Basung is one of the schools with an environmental perspective, but there are still many students who do not understand that there are many applied physics that apply in the school environment.

The use of the school environment is very necessary in an effort to make the school an integral part of the local community. The school is not a separate place from the community. In this way the function of the school as a center of social cultural and community renewal and development will be realized. Besides that the environment is very rich with media resources and learning aids.
In Al-Quran the beauty of the garden is often used in describing the beauty of heaven, as the guidance of Allah SWT. “And deliver good tidings to those who believe and do good, that for them there are provided Gardens which flow rivers in them. Every time they were given a sustenance of fruits in those heavens, they said: This is what was given to us first. They were given similar fruits and for them there were holy wives and they were eternal in them” (Q.S Albaqarah: 25)

Park is an area that contains hard and soft material components that support each other that are intentionally planned and made by humans in their use as indoor and outdoor refreshments. According to [3], the garden is a plot of open land with a certain area in it planted trees, shrubs and grasses which can be combined with the creation of other materials which is commonly used for sports, relax, play, gather and so on.

Park design needs to be selected and arranged in detail, so that the park can be functional and aesthetic [2]. Park Elements can be classified into:
a. Based on the basic types of elements
   • Natural element
   • Artificial elements
b. Based on the impression generated
   • Soft elements such as plants and animals
   • Hard materials such as paving, fencing, park benches, ponds, garden lights and so on
c. Based on possible changes
   • Major elements (elements that are difficult to change) such as rivers, mountains, beaches, rain, fog, temperature, humidity, wind, and so on.
   • Minor Minor elements (elements that can be changed) such as small rivers, small hills, plants and man-made elements.

While the definition of edupark is a place that is capable of creating highly valuable offerings, which is a learning value for the educational program goals.

2. Research Methods
The research location was in SMAN 2 Lubuk Basung, Agam Regency, located on Jalan DR. Muhammad Hatta Lubuk Basung. Element data consist of soft and hard material. Soft material in edupark park SMAN 2 Lubuk Basung includes various types of plants as shown in Figure 1. Hard material in edupark park at SMAN 2 Lubuk Basung covers various forms, as shown in the Figure 2.

The research method used is through a qualitative - descriptive model, which evaluates factual conditions for all components of the park. Data compilation is done by direct observation on site, then accompanied by direct interviews with the school and distributing questionnaires to students as the object of research. Data analysis is done through several processes or stages, because the initial stages come from observing objects, so this research is inductive research. The stages in this inductive research are as follows observation, literature study, analysis and discussion and the final stage of conclusions.

![Gajah Mini Grass](image1)
![Protective Plants](image2)
![Medicinal Plants](image3)

**Figure 1.** Types of Soft Materials in Edupark Park SMAN 2 Lubuk Basung
Park

Water Falls

Pool

Gazebo

Relaxing chair

Trash Can

Parking Lot

Basketball Court

Volleyball Court

Figure 2. Types of Hard Materials in Edupark Park SMAN 2 Lubuk Basung

3. Results and Discussion

3.1 Observation data
To obtain various data about activities or activities of users is carried out for 1 week. From the results of observations or observations of student activities as follows:

| No | Activity       | Man | Women | Total |
|----|----------------|-----|-------|-------|
| 1  | Relax          | 175 | 180   | 355   |
| 2  | Photography    | 45  | 115   | 150   |
| 3  | Sports         | 450 | 320   | 770   |
| 4  | Learning       | 48  | 65    | 113   |
|    | Total number in 1 week |   |       | 1388  |

3.2 Questionnaire Data Against Students
Students' opinions were captured using a questionnaire and obtained the following data:

| No | Activities  | Respondents | Percentage |
|----|-------------|-------------|------------|
| 1  | Relax       | 31          | 44.3%      |
| 2  | Photography | 25          | 35.7%      |
| 3  | Sports      | 6           | 8.57%      |
| 4  | Learning    | 8           | 11.43%     |
|    | Total       | 70          | 100%       |

| No | Category         | Respondents | Percentage |
|----|------------------|-------------|------------|
| 1  | Very Worthy      | 35          | 50%        |
| 2  | Worthy           | 15          | 21.4%      |
| 3  | Less Worthy      | 12          | 17.2%      |
| 4  | Not Worthy       | 8           | 11.4%      |
|    | Total            | 70          | 100%       |

| No | Category           | Respondents | Percentage |
|----|--------------------|-------------|------------|
| 1  | Trash Can          | 12          | 17.1%      |
| 2  | Park Bench         | 25          | 35.8%      |
| 3  | Gazebo             | 13          | 18.6%      |
| 4  | Identity of each park | 8           | 11.4%      |
| 5  | Tree Protectors    | 12          | 17.1%      |
|    | Total              | 70          | 100%       |

3.3 General evaluation of Geopark functions
Based on the observations and questionnaires on student activities, the function of Edupark of the park is still limited to a playground or a place to relax, not widely used as a learning medium. This is evidenced by the results of observations and questionnaires on 70 students, where leisure activities were 44.3%,
photography activity 35.7%, sports activities 8.57% and learning activities 11.43%. Therefore, it is necessary to develop a science-based edupark learning module.

4. Conclusion
From the results of an analysis on the Evaluation of Parks Function of SMAN 2 Lubuk Basung as edupark based on science, it can be concluded that:

a. Based on the analysis and evaluation of the park at SMAN 2 Lubuk Basung in terms of soft material and hard material including decent parks, but still limited to a place to relax, learning activities are not dominant, therefore it is necessary to develop a science-based Edupark learning module.

b. There are facilities that must be added in order to make the park more optimal as an educational place of learning, among others,
   - Trash can
   - Park bench
   - Gazebo
   - Identity of each park
   - Protective tree

It is expected that the result of the study can contribute towards the understanding about a functional science-based Edupark. Furthermore, it can also be used as a reference for planning and utilizing a science-based school park that will be built to function optimally.

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