

**FINAL REPORT**  
**DIPA BIOTROP 2018**

**“Landscaping” as Project Based Learning:  
Creating an Artistic School Garden  
as Contextual and Integrated Learning Media  
in SMPN 13 Kota Sukabumi**

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Abstract

This research is about to create a school garden landscape with sources derived from the work of students in several subjects. This research is done to see that school gardens can be a unifying theme between subjects, and school gardens can be a contextual and integrated learning media. The subjects involved in this research are Science and Craft. The results created are expected to be used as learning media for other subjects, such as language, cultural arts, mathematics and others.

This research was carried out by adjusting the mandate of SMPN 13 Kota Sukabumi as an art-fostered school in Sukabumi, for which school garden arrangement is expected to support the existence of pre-existing art facilities, namely open stage in the middle of the school garden that is given treatment.

This study involves students in several parts, especially the results of science learning in plant classification material and capillary use in planting with a simple hydroponic system. Also Craft subjects, in the material cultivation of fruit and vegetable plants, and handicrafts made from hard materials.

Keywords: landscape, school gardens, plants, hiroponics

## **1. INTRODUCTION**

### **1.1. BACKGROUND**

SMPN 13 Kota Sukabumi is a school that has been given the mandate as an art school by the Sukabumi government. Located on the southern of the city with a total land area of 5,762m<sup>2</sup>. There are 766 students, there are 34 teachers, 7 administrative staffs, 2 janitors, 1 librarian and 1 security officer. Actually, SMP 13 Kota Sukabumi has good soil and water condition, it is still very feasible to grow crops. Unfortunately, this school only has less than 10% of land that can be planted.

It was felt very important for SMPN 13 Kota Sukabumi to revitalize existing green open spaces. Because the green open space is proven to be able to influence children's brain development so that intellectual intelligence and social relationships of children in schools are better, although this is not the only thing that can bring positive change to children in school. The mandate of the school as a fostered art will be collaborated to be able to create a school garden that will also function as a place for students to create and more creative in learning. Teachers can also use the school's garden as a media for contextual and integrated learning.

### **1.2. AIM**

Landscaping that will be held at Sukabumi City Junior High School 13 aims to;

1. create a school garden that supports the school's mandate as an art-fostered school.
2. utilizing school gardens to be a learning resource and display space for student creations.
3. familiarize students and the entire school community to love the environment and be able to garden or grow crops.
4. train students to have an attitude of patience, independence, work hard and be able to work together in teams.

### **1.3. EXPECTED OUTPUT**

Through the school garden activities are expected to ;

1. create an artistic garden and synergy with the school mandate as an art school.
2. create an artistic Green Open Space that can be utilized in all the moments that are held in school.
3. make the school garden as one of the school habituation programs in the field of environment and health.
4. form students to be positive and characterized.



## 2. BENEFITS AND IMPORTANCE OF RESEARCH

The existence of a school garden is a necessity; this is a form of preserving and protecting nature, especially land and water, because the earth is our greatest inheritance for the next generations.

Schools are at the forefront of formal education; through schools we can convey all of messages to the next generation, one of which is to instill awareness and the need to conserve resources. SMPN 13 Kota Sukabumi strives to create a literate generation and is aware of the importance of managing the environment. One of the steps that will be taken is the making of an artistic school garden.

The benefits of the garden that will be made cover several things including:

1. Character building of students, school gardens can train students to have the attitude of loving God's creation, discipline, cooperation, honesty, skillful, responsible, loving environment and others.
2. Contextual learning, school gardens become the center of activities outside the classroom, become a display space of the work created by students and become a real learning resource for several subjects.
3. The school garden will be planted in addition to being beneficial for improving the nutrition of students, this garden will also be setup in such a way according to the needs and mandate of the school as an Art Development School.

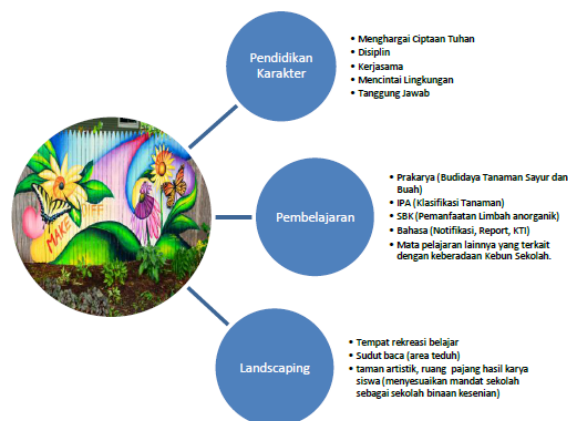


Figure 1. Schemes for utilizing school gardens.

## **4. METHODOLOGY**

### **4.1.Place and time**

The activity was held in Sukabumi City 13 Public Middle School, for 9 months, starting in March 2018 to November 2018.

### **4.2.Type of activity**

1. Make a vertical garden.
2. Providing basic knowledge about gardening to students, through craft subjects.
3. Practice planting in a simple hydroponic way, through Craft subjects.
4. Decorate / color the pot or other hard media, through the Craft subject.
5. Make a mini garden with hanging pots made from materials used in craft subjects.
6. Organize plants according to their groups, through science subjects.
7. Student activities outside of school hours related to plant care.

## 5. RESULTS AND DISCUSSION

SMPN 13 Kota Sukabumi with sufficiently fertile environmental conditions and fairly good water discharge, also supported by a large area, actually has good potential to have a school garden or a decent green open space. However, almost all of the school area is covered with cement and tiles, so that less than 10% of the total school area can be planted directly.

The area of land that allows it to be planted is divided into several places that are quite far apart. This makes it a bit of an obstacle to create a school garden, considering that at the time this research was taking place, the school was undergoing renovations in several parts, such as; the front fence of the school, several classrooms, and the inner gate.

To overcome the limitations of planting land, the researcher has made a series of vertical gardens on the ground which are on the right and left side of the open stage. This stage is a place commonly used as a center for everyday student activities, as well as grand arts activities.

The activity is divided into 2 periods,

Time	Activities
Periode1 March – July	<ul style="list-style-type: none"> <li>- Dissemination and planning of activities.</li> <li>- Grouping students and arranging a schedule of activities with students and team.</li> <li>- Prepare equipment and materials for gardening practices with students.</li> <li>- Practice planting green mustard and red spinach (the schedule is adjusted to the schedule of craft learning)</li> <li>- Purchase iron for vertical garden</li> </ul>
Period 2 July – November	<ul style="list-style-type: none"> <li>- Installation of vertical garden iron circuits.</li> <li>- Buy pots and plants for vertical garden.</li> <li>- Students practice and practice planting by means of hydroponics.</li> <li>- Make hanging pots from bottles, jars and other materials.</li> <li>- Make a hanging garden in front of the class.</li> <li>- Install a mini fence</li> <li>- Reporting</li> </ul>

Tabel 1. Activity Periods

To organize this vertical garden, researchers involved several teachers in science and craft subjects. This is intended to create a school garden that comes from the learning outcomes of several subjects, and later this school garden will also be used as a learning medium for all subjects.

During this research period, only a few types of students' work that could be included, such as;

1. Bottles, cups of used drinks and plastic jars, the result of craft learning on materials made from hard materials. These learning outcomes are utilized as hanging pots that will be used to make a mini garden in front of the class.
2. Painting *nyiru* bearing the letters that make up the words of SMPN 13 SUKABUMI.
3. Vegetable crops from learning outcomes in craft subjects, in the fields of fruit and vegetable crop cultivation. In this learning material, students are introduced to the steps of farming, starting from seeding, planting, care, and harvesting.
4. Watercress, pakcoy, and hydroponic lettuce. In addition to conventional farming methods, students are introduced to hydroponic farming methods.
5. In the science learning method, students also get knowledge about the theory of capillary on a simple hydroponic system that they apply to making pots that come from used plastic bottles.
6. Still in science subjects, students are invited to be able to classify the types of plants that exist and arrange them around the school yard.

All school garden supporting goods derived from the work of students, are prepared according to the schedule of subjects that have been running at school. Activities outside of school hours are held two to three times a week, as needed. The activities that are beyond the hours of study include; planting and adding nutritional water to hydroponic plants.

Planting results from the front school garden both planted conventionally or hydroponically, can be used as a vertical garden filling plant inside the school (the park next to the open stage).

Vertical garden on both sides of the stage, the plant pots are made to be easily adjusted to the event held on the stage. The aim is as a display of supporting stage decorations

For the continuation of this school garden, planning will be carried out more mature and make it one of the school activities, with a plan that involves all school people and adjustments in several things, such as: schedule and addition of accompanying teachers.

## **6. CONCLUSION**

From the results of this study, it was concluded that the school garden could be made based on the goals or mandates of the school, the theme could be determined according to conditions in the field.

The existence of a school garden actually has many benefits, in addition to being a green open area, school gardens can also be used as a display room for students' work, especially for schools such as Sukabumi City Public High School 13 which has a mandate as an art school in the city. School garden arrangement can be combined with the park or the existence of available art facilities.

The combination of a school garden, a garden, and the work of students can create a good creation space. More thematic and integrated learning can be built by combining several subject matter with themes related to school gardens. This requires some adjustments between cross-subject teachers and adjusting the right schedule.

However, many problems must be considered carefully so that the sustainability of the school garden, which supports many activities in the school, is maintained, including:

1. The consistency of the school to keep the school garden as a program that must always receive attention.
2. The commitment of all school members to maintain and maintain school gardens.
3. Hold continuous training for students, or make school gardens one of the routine extracurricular activities and become a habituation program for students.
4. The school has at least one school guard who is ready to take care of the school garden, especially during school holidays.