

# Increasing students' interest and knowledge about herbs in elementary school

Peningkatan minat dan pengetahuan siswa tentang jamu di sekolah dasar

Devi Anggraini Putri<sup>1</sup>, Riyadatus Solihah<sup>2</sup>, Rizka Efi Mawli<sup>1</sup>

<sup>1</sup>Department of D3 Laboratory Engineering, <sup>2</sup>Department of Pharmacy, STIKes Ngudia Husada Madura  
Jl. R. E. Martadinata No. 45, Mlajah, Bangkalan, 69116, Indonesia

## ARTICLE INFO:

Received: 2022-06-25  
Revised: 2022-07-24  
Accepted: 2022-08-20

## Keywords:

Education game,  
Elementary school,  
Herbs, Snake ladder  
game

## ABSTRACT

Herbs is not only a potent Indonesia herbal medicine but also the ancestor tried to keep the preservation of herbs. Therefore, knowledge about herbs is important to be preserved from an early age. However, currently the interest of Indonesian children in consuming herbs tends to decrease. The stigma that herbs is bitter is the reason why herbs is unlikeable. Based on the analysis of the demographic condition in Bangkalan, the quality of education is still low, interest and knowledge about herbs is also low. The purpose of this program is to increase students' interest and knowledge about herbs at SDN Demangan 3 Bangkalan. The methods are socializing, implementing educational games about herbs, and drinking together. Furthermore, students' interest on herbs was evaluated by using a questionnaire. Meanwhile, students' knowledge about herbs was analyzed and evaluated based on the results of the pre-test and post-test. The results of the program showed that students' interest in herbs increased by 83% after a learning media namely herbs snake ladder game was applied. In addition, students' knowledge about herbs also increased by 76% from 24 respondents. Thus, this program is recommended to increase the interest and knowledge of elementary school students about herbs.

©2022 Abdimas: Jurnal Pengabdian Masyarakat Universitas Merdeka Malang  
This is an open access article distributed under the CC BY-SA 4.0 license  
(<https://creativecommons.org/licenses/by-sa/4.0/>)

**How to cite:** Putri, D. A., Solihah, R., & Mawli, R. E. (2022). Increasing student interest and knowledge about herbs in elementary school. *Abdimas: Jurnal Pengabdian Masyarakat Universitas Merdeka Malang*, 7(4), 759-767  
<https://doi.org/10.26905/abdimas.v7i4.8193>

## 1. INTRODUCTION

Indonesia has the second biggest biodiversity in the world after Amazon's Forest in Brazil. This biodiversity becomes a big profit for Indonesia human resource. The Indonesian Country Study on Biodiversity reported that there are about 25,000-30,000 plants species in Indonesia. There are about 6,000 species used as treatment and only 2,500 plant species that have been reported to be potential as herbal medicines (Elfahmi et al., 2014). In Indonesia, people have known herbal medicine as herbs. Herbs was known as a traditional herbal medicine since a long time ago. One of Indonesia's biodiversity is defined on Herbs (Fatmawati & Putri, 2019). Herbs is reciped from the natural products. About 85% of herbal ingredients involved extract of plants. Furthermore, the potential of herbal plants also was attracted for developing countries such as India and China. About 65% of people in India consumed

herbal plants as their treatment. While in China, about 40% of recipes doctor based on herbal medicines (Putri & Fatmawati, 2019). Accordingly, this is a big opportunity for Indonesian researcher on natural products to develop herbs as herbal medicine and also participate to preserving herbs as an Indonesia inheritance ancestor.

In Indonesia, herbs is a local wisdom that is guarded its sustainability. Along with advancing knowledge science and technology, researchers have developed herbs in capsules, powders and also liquids ready to drink (Lisminingsih, 2022). In addition, herbs in Indonesia was not only used as herbal medicine, but also as a supplement health for maintaining body from diseases. Herbs can also be made from house plants called as *Tanaman Obat Keluarga* (TOGA) such as turmeric, kencur, ginger, galangal, and others (Hidayati, et al., 2017; Fitriana, et al., 2016). TOGA was also used to increasing the children appetite (Army, 2018). However, the interest of Indonesian children in consuming herbs tends to decreased (Itsmis, 2019). There is a stigma that herbs is bitter. So, it becomes the reason why herbs is unlikeable (Anisa, 2019). Hence, the team help to increase interest and knowledge children specifically about herbs through their reported research.

Based on the previous research, that many natural products have good pharmacological effects such as *Momordica charantia*, *Glycine max*, *Chromolaena odorata*, *Muntingia calabura*, and *Ananas comosus*. Furthermore, the researchers also reported that Indonesia postpartum herbs had good antibacterial and toxicity activities (Fitriana et al., 2021). Besides that, the team have also applied the research result through a community service program conducted at SMPN 19 Surabaya and published to many online mass media (Anisa, 2019; Goestiana, 2019, Itsmis, 2019). Therefore, this program is very helpful to increasing interest and knowledge student about herbs.

According to the previous studies, the team want to develop this community service program on elementary school as known as Sekolah Dasar (SD) in Bangkalan. The determination of elementary school students as public object was based on the previous analysis situation and survey that the students was not interested about herbs, drinking herbs is unusual, they were assumed that herbs is bitter, and they have not enough knowledge about herbs ingredients and its benefits. Furthermore, the students were not enough interested to study about herbs.

Bangkalan is a regency area in East Java which is located on the western tip of Madura Island. This geographical area becomes profit for Bangkalan because Bangkalan is bordered directly with Surabaya as a mother city East Java. However, the growth economy in Bangkalan is still very low. Badan Pusat Statistik data on 2020 reported that the economy Bangkalan is the lowest second and ranked on 6<sup>th</sup> of poor people in East Java. Because of that, the level education is also still low. Hence, the team was trying to improve the quality of education from an early age through science and technology approach.

Refer to the analysis situations and problems that have been outlined, the team is trying to apply the science and technology (Ghozali & Fatmawati, 2021) and their reported research through this community service program to increasing interest and knowledge student about herbs at SDN Demangan 3 Bangkalan. SDN Demangan 3 is one of the elementary schools located in Bangkalan, East Java. Although it is located in the center of city, SDN Demangan 3 has only 81 students from class 1 to 6 in 2022. Therefore, this program is expected capable to increase the quality education, interest and knowledge specifically about herbs at SDN Demangan 3 Bangkalan.

## **2. METHODS**

### **The Activity Design**

The activity design of this program was conducted based on ADDIE model (Analysis, Design, Development, Implementation, dan Evaluation) as shown in Figure 1.

## Increasing students' interest and knowledge about herbs in elementary school

Devi Angraini Putri, Riyadatus Solihah, Rizka Efi Mawli

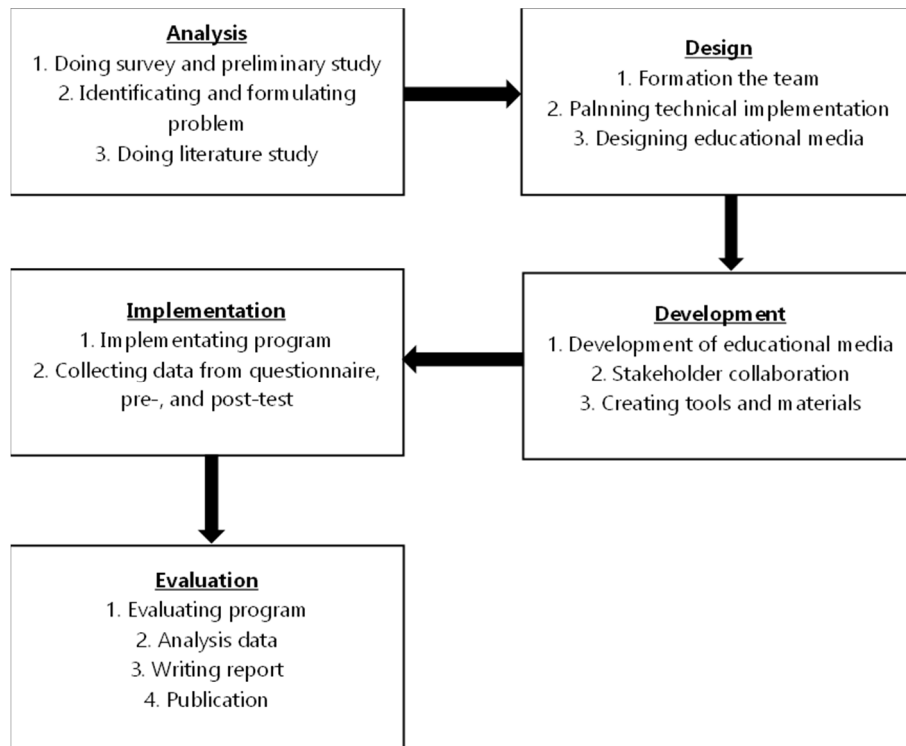


Figure 1. Schematic the activity design based on ADDIE model

### Materials

Tools and materials used in this community service program are projector, pointer, educational media namely herbs snake ladder game, the large dice, and glasses. While, the used materials are mineral water, herbs, ginger, *kencur*, turmeric, *temulawak*, *galangal*, betel leaves, lemongrass, cardamom, cloves, tamarind java, lemon, and fennel seeds. The materials were used as demo to show directly about the usual ingredients to make herbs.

### Implementation

Implementation of this program was conducted with indoor and outdoor learning system in one time meeting. The indoor learning consists of the following activities: socialization about herbs, and drinking herbs together. While, the outdoor system is implementation of learning media or namely education game about herbs. Besides that, before and after activities were conducted pre-test and post-test to students.

Socialization about herbs was completed by the presented material by the team in class (indoor). The presentation contains the history, efficacy, various types of herbs, and also an introduction about herbs ingredients. Moreover, the team have also given tool demonstration about herbs ingredients such as ginger, *kencur*, turmeric, *temulawak*, *galangal*, betel leaves, lemongrass, cardamom, cloves and others. The aim of this tool demonstration is to introduce herbs ingredients physically

Next, the second activity was implementation of learning media or namely herbs snake ladder game in outside class (outdoor). In this learning media was provided a large snake ladder board about 3

x 3 meters. There are 100 columns that have been numbered. Some of the columns were given pictures of herbs ingredients, snakes, and ladders. In addition, two of the large dice about 20 x 20 centimeters containing numbers were also provided. The students played by moving foot step as the appear dice number and guess the name of herbs ingredients in the column. If the student is able to guess the name of the herbal ingredients correctly, then he will go to the next column according to the ladder instruction. While, when the student guesses it wrongly, then he will go to the previous column according to the snake instruction. This activity was done until either they reach the highest column number, which is number of 100 or the time is over. This education game could be played by more than two students. From here, students will study about herbs ingredients quickly and fun. In addition, this game will stimulate students to increase their interest and knowledge about herbs.

The activity of drinking herbs together is the final activity step and at the same time to closing this activities. In this activity, all students, teachers, and the team drank herbs that had been prepared by the team. The prepared herbs has been certified by BPOM and have a distribution permit so that herbs is safe for consumption.

### **3. RESULTS AND DISCUSSION**

#### **Results**

Based on the implementation activity held in June 2022 at SDN Demangan 3 Bangkalan, there are some results.

#### **Socialization of herbs**

The socialization about herbs was presented by the team in the class (indoor). The presentation was conducted about the history, efficacy, and the various types of herbs, and also introduction herbs ingredients as shown in Figure 2. Introduction about herbs ingredients was done by showing directly of the common example herbs ingredients used in daily life. This activity was attended by students from class 1 to 6 with total of 60 students.



**Figure 2.** Socialization of herbs by team: (a) The presentation; and (b) The sharing session

#### **Implementation of education game about herbs**

The applied education game was a media education with snake ladder game concept. The dimension of media is 3 x 3 meters. In addition, a big dice could attract the students to join this game. The implementation of this media was done in outside class (outdoor) with the representative students in four teams. Every team was contained about 4-5 students. The winner is when the team can achieve the highest number and play with a right technical rule. The situation of implementation educational game media called herbs snake ladder game was shown in Figure 3.

## Increasing students' interest and knowledge about herbs in elementary school

*Devi Angraini Putri, Riyadatus Solihah, Rizka Efi Mawli*



**Figure 3.** Implementation of education games media:  
(1) Application of herbs snake ladder game; and (2) Giving a reward to the student winner

### The activity of drinking herbs together

The activity of drinking herbs together was executed in the class (indoor) by all students, teachers and team. Before drink herbs, every student has been already confirmed for breakfast and given a number of snacks also. The aim is for avoid the worst thing happened like vomit or sick stomach. In this activity, every student was given a cup of herbs that has been prepared by the team as in Figure 4.



**Figure 4.** Students of SDN Demangan 3 are drinking herbs together

### Student characteristics based on the class

Table 1 is the characteristics of students as known as respondents who filled in questionnaire, pre-test and post-test. According to data on Table 1, the most respondents was the class of 6<sup>th</sup> with total of 13 students (54.17%).

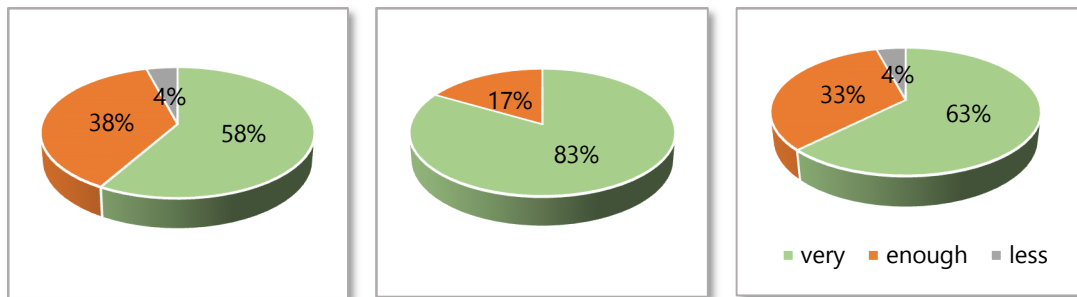
**Table 1.** Respondent characteristics in SDN Demangan 3

Grade level	Frequency	Percentage (%)
Class 4	9	37.5
Class 5	2	8.33
Class 6	13	54.17
Total	24	100

### Student's interest about herbs

Analysis of student's interest about herbs was based on the results reviewed questionnaire from some of the parameters that become the activities in this program. Those parameters were the presented

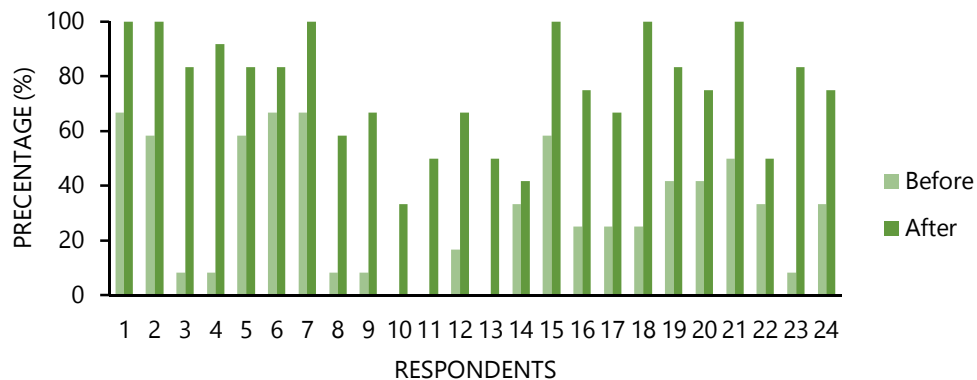
material in socialization activity, the applied learning media, and drinking herbs together as shown in Figure 5. The questionnaire results provided that the most of students was very interested about herbs with the percentage values of 58%, 83%, and 63%, respectively. This result showed that the program activities are able to increase the student's interest about herbs. Among three stimulus parameters, the applied learning media, snake ladder game about herbs, is the most interested with percentage of 83%.



**Figure 5.** The chart questionnaire results about student's interest reviewed of: (1) The presented material; (2) The applied learning media; and (3) the activity of drink herbs together

### Student's knowledge about herbs after the program was implemented

The difference analysis student's knowledge about herbs before and after the program was analyzed based on the results pre-test and post-test. The test result was reviewed from the correct answer of 12 questions about herbs ingredients. Based on the test results in Figure 6, before the program was implemented, the student's knowledge was still very low with an average of 31%. While, after the program was given, an increasing student's knowledge was presented with an average of 76%. This result exhibited that there is an improvement student's knowledge about herbs after the program was implemented.



**Figure 6.** The data knowledge of student before and after the program was implemented

### Discussion

The community service program activity to improve the student's interest and knowledge about herbs at SDN Demangan 3 Bangkalan was successfully attended by 60 students from class 1 to 6. The implementation of this program through a number of activities such as socialization about herbs,

implementation of learning media namely herbs snake ladder game, and drink herbs together. These activities were made as analysis parameters of student's interest about herbs through questionnaire. Furthermore, the student's knowledge was measured based on the results of pre-test and post-test about herbs ingredients. The pre-test and post-test were given based on the level ability of elementary school students who are still at the elementary level or fundamental.

The respondents who filled the questionnaire, pre-test and post-test were elementary school students in class of 4, 5, and 6 with percentage of 37.5; 8.33; and 54.17%, respectively, as shown in Table 1. Based on these data, the highest respondent is the 6<sup>th</sup> class students. There are the caused factors including: (1) The limit ability of students to read and write; (2) The low level of student's self-confident to meet a new challenge; and (3) the minimum student facility for example a writing tool. Because of that, the respondents obtained only 24 students from total of 60 students who attended. Therefore, this program is recommended for students in class of 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup>.

The student's interest about herbs was validated based on the questionnaire results after the program was applied. The result was evaluated from the parameters of implemented program activities: the presented material about herbs in socialization activity, the applied education game about herbs, and the activity of drinking herbs together. All the implemented activities exhibited good testimony results from the respondents as shown in the graph as Figure 5. The result showed that the conducted program activities could improve the student's interest about herbs. Therefore, this program activities could be applied to elementary school students in class of 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> to increase the student's interest about herbs.

Among the three implemented program activities, the implementation of learning media namely herbs snake ladder game has the highest results with value of 83% (see Figure 5). The created media was based on the reported study previously about developing learning media about snake ladder game to improve student's interest on social studies (Syawaluddin et al., 2020) and geometry study (Munadah et al., 2021) in elementary school. By little modification, the team is trying to develop learning media then called it herbs snake ladder game. Hence, herbs snake ladder game could be applied to increase student's interest in elementary school about herbs. Besides that, the presented material in socialization activity and drinking herbs together are also based on the previous reported study that the methods are also effective to be applied for students in elementary school (Setiawan et al., 2018).

The student's knowledge about herbs was based on the results of pre and post-test related with herbs ingredients. The pre-test was given before the program activities have been applied. Then post-test have been given after the activities was applied completely. The test results showed enhancement result rapidly (see Figure 6). Even, there are 6 students (25% of respondents) with excellent result. Therefore, the student's knowledge about herbs increased after the program was applied.

#### **4. CONCLUSION AND RECOMMENDATIONS**

The community service program activities had been implemented at SDN Demangan 3 Bangkalan. The aims of this program are increasing student's interest and knowledge about herbs in elementary school at SDN Demangan 3. The method implementation was conducted by many activities such as socialization about herbs, the application of learning media namely herbs snake ladder game, and drinking herbs together. The result showed that the student's interest about herbs increased about 83% after the learning media was applied. And student's knowledge about herbs also increased about

76%. Therefore, this program activities are effective to be applied for increasing student's interest and knowledge about herbs at SDN Demangan 3 Bangkalan.

The program is recommended to be applied in class of 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> on elementary school students to know more that herbs is an inheritance culture of Indonesian ancestors. Other educational game media modifications about herbs are expected to be developed for improving the student's interest on herbs. Furthermore, for preserving herbs, the stakeholders support is also needed.

---

## REFERENCES

- Anisa, N. I., (2019, Oktober 29). *Serunya ribuan siswa SMPN 19 Surabaya serentak minum jamu di halaman sekolah, jamunya ramuan khusus*. Tribun Jatim.
- Army, R., (2018). *Jamu ramuan tradisional kaya manfaat*. 1st ed. Jakarta: Badan Pengembangan dan Pembinaan Bahasa Kemendikbud.
- Badan Pusat Statistik. (2020). *Kabupaten Bangkalan dalam angka 2020*. 1st ed. Bangkalan: BPS Kabupaten Bangkalan.
- Elfahmi, E., Woerdenbag, H. J., Kayser, O., (2014). Jamu: Indonesian traditional herbal medicine towards rational phytopharmacological use. *Journal of Herbal Medicine*, 4(2), 51-73.  
<https://doi.org/10.1016/j.hermed.2014.01.002>
- Fatmawati, S. & Putri, D. A., (2019). *Dobrak jamu sebagai Indonesia brand preference melalui konsep smart scientific evidence*. 1st ed. Surabaya: AISINDO.
- Fitriana, W. D., Ersam, T., Shimizu, K., Fatmawati, S. (2016). Antioxidant Activity of *Moringa oleifera* extracts. *Indonesia Journal Chemistry*, 16(3), 297-301. <https://doi.org/10.22146/ijc.21145>
- Ghozali, M. I. A. & Fatmawati, S. (2021). Pembelajaran daring di sekolah dasar pada era pandemi Covid 19. *EduBase: Journal of Basic Education*, 2(2), 61-68.  
<https://doi.org/10.47453/edubase.v2i2.427>
- Goestiana, W., (2019, Oktober 29). *Lestarian warisan Indonesia, ribuan siswa SMP minum jamu serentak*. BASRA (Berita Anak Surabaya).
- Hidayati, M. D., Ersam, T., Shimizu, K., Fatmawati, S. (2017). Antioxidant activity of *Syzygium polyanthum* extracts. *Indonesia Journal Chemistry*, 17(1), 49-53. <https://doi.org/10.22146/ijc.23545>
- Itsmis. (2019, Oktober 29). *Lestarian budaya lokal, ITS ajak siswa SMP minum jamu*. ITS News.
- Lisminingsih, R. D., (2022). Training on herbal plants and simplicia processing at the Miftahul Jannah Mosque, Malang Regency. *ABDIMAS Jurnal Pengabdian Masyarakat Universitas Merdeka Malang*, 7(2), 267-280. <https://doi.org/10.26905/abdimas.v7i2.6307>
- Munadah, R., Rahayu, P. S., Pranandari, E., Jukia, F., Rosdianti, V., (2021). Penerapan permainan ular tangga dalam peningkatan hasil belajar geometri bangun ruang di kelas V SD 006 Rambah Samo. *Trapsila: Jurnal Pendidikan Dasar*, 3(1), 46-56. <http://dx.doi.org/10.30742/tpd.v3i1.1445>
- Putri, D. A. & Fatmawati, S., (2019). Metabolit sekunder dari *Muntingia calabura* dan bioaktivitasnya. *ALCHEMY Jurnal Penelitian Kimia*, 15(1), 57-78. <https://doi.org/10.20961/alchemy.15.1.23362.57-78>



**Increasing students' interest and knowledge about herbs in elementary school**

*Devi Anggraini Putri, Riyadatus Solihah, Rizka Efi Mawli*

Setiawan, I., Suharyanto & Dianto, R., (2018). Peningkatan pengetahuan tentang jamu pada siswa-siswi di Sekolah Dasar Negeri 1 Boyolali. *Jurnal Surya Masyarakat*, 1(1), 54-58. <https://doi.org/10.26714/jsm.1.1.2018.54-58>

Syawaluddin, A., Rachman, S. A. & Khaerunnisa, (2020). Developing snake ladder game learning media to increase students' interest and learning outcomes on social studies in elementary school. *Simulation & Gaming*, 1-11. <https://doi.org/10.1177/1046878120921902>

---