

School Environmental Education Activities to Enhance Plant Utilization for Students at SDN Kuin Cerucuk V, Banjarmasin City

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Abstract: Students' knowledge about plants is crucial. The school environment serves not only as a place containing various types of plants but also as a learning resource. Some plants available in the school environment have the potential for medicinal use as well as aesthetic purposes. The purpose of this activity is to enhance student's knowledge about the utilization of plants in the school environment through educational activities at SDN Kuin Cerucuk V, Banjarmasin. The activity was conducted at SDN Kuin Cerucuk V with 64 students from grades 4, 5, and 6, along with 7 teachers. Besides the importance of conducting education about medicinal plants, similar activities regarding the utilization of medicinal plants in the vicinity of SDN Kuin Cerucuk V, Banjarmasin, have not been conducted before. Based on the service results, it is known that the educational activity on the utilization of plants around the environment shows a positive response and enthusiasm. The educational activities were carried out through lectures in classrooms and using posters as a publication medium. The results of the education show that there was an increase in students' knowledge, with a pre-education average of 10.91 and a post-education average of 89.01. The improvement in knowledge can contribute to teaching and learning activities.

Keywords Education; Plants in the Environment; Students' Knowledge

Introduction

Plants have various benefits for humans and their environment, one of which is through the use of medicinal plants in households (TOGA). TOGA are plants utilized in the surrounding environment to enhance immunity, among other things (Harefa, 2020; Rulia et al., 2023), Besides through TOGA, it is hoped that the utilization of plants can increase as a means of greening, preservation, and beautification of the surrounding environment. Furthermore, the presence of TOGA can be used as a means of education and instilling environmental love characters. Environmental love characters are part of character education in learning (Murniyetti et al., 2016).

Some wild plant species even have benefits such as *Achantus ilicifolius*, which is used for its roots, stems, and leaves as a remedy for coughs, rheumatism, and high blood pressure (Ramadhan & Utami, 2023). The tiger on

the plant (*Crataeva adansonii*) is utilized by people to increase blood pressure (Syakran & Utami, 2022) while *Hibiscus tiliaceus* is used to treat wounds in diabetes patients (Mardiah & Utami, 2022). Plants like mundar (*Garcinia forbesii* King.), Manggis Burung (*Garcinia porrecta* Laness), and Asam Kandis (*Garcinia xanthochymus* Hook.) are also used as medicinal plants (Rahmadani et al., 2021). However, plants utilized as TOGA are generally found in yards and intentionally cultivated by communities because of their benefits, such as kumis kucing, binahong, noni leaves, brotowali, lime, ginger, and moringa (Diana Sari et al., 2015; Soendjoto et al., 2023)

Based on interviews conducted with students, it is known that the lack of knowledge among students about plants results in their inability to recognize various types of plants, including medicinal ones. Previous service learning gathered data indicating that the knowledge of medicinal plant utilization among residents of Pagatan

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Besar village showed limited initial knowledge, especially among those under 20 years old (Soendjoto et al., 2023). Other findings also indicate that the lexical knowledge of teenagers in the Buleleng area regarding medicinal plants for adolescents is relatively sufficient (Rasna, 2010). This suggests the need for education on plant utilization from an early age to prevent the loss of community knowledge, especially regarding medicinal plants in the surrounding environment.

Educational activities about plants can be conducted at the elementary school level because students know plants in their surroundings. Learning at the elementary school level has a longer duration compared to other educational levels such as secondary school, so students can maximize their potential well and instill a love for the environment (Muhammad, 2017). Love for the environment is a character trait demonstrated by preserving and improving the damage to the surrounding environment. Environmental care character education becomes an indicator of students' concern and sensitivity to their learning environment (Nasucha et al., 2020). One important aspect of education at the elementary school level is based on the Sustainable Development Goals (SDGs) as a commitment to improving society, with one of its goals being quality education and a healthy and prosperous life (Nurfatimah et al., 2022).

The activity was carried out at SDN Kuin Cerucuk V located in the city of Banjarmasin. SDN Kuin Cerucuk has 64 students with 7 teachers and is accredited as a grade B. In addition to the importance of conducting education on medicinal plants, similar activities have not yet been conducted regarding the utilization of medicinal plants in the surrounding environment of SDN Kuin Cerucuk 5 Banjarmasin. The purpose of the activity was to increase student's knowledge about the utilization of medicinal plants in the school environment through educational activities at SDN Kuin Cerucuk 5 Banjarmasin.

Method

The activity was conducted collaboratively involving class teachers, students, and a service team consisting of 2 Biology Education lecturers and 10 Biology Education students. Class teachers played a supporting role in the educational activities. The role of class teachers was to guide the service activities and assist in organizing students along with Biology Education students. The target participants were students at SDN Kuin Cerucuk V Banjarmasin, totaling 64 students from grades IV, V, and VI.

The school environment provides an opportunity for health maintenance and community knowledge enhancement. The schoolyard is a habitat for various

types of plants that can be utilized to the fullest extent, not only economically to increase income but also ecologically to produce oxygen and serve as sources of medicinal plants to improve human health.

The steps to address school issues include: Conducting pre-education written tests aimed at measuring students' initial knowledge before activities. Observing the school environment such as the schoolyard. Identifying various plants available around the school such as hibiscus (*Hibiscus rosa-sinensis*), snake plant (*Dracaena trifasciata*), *Syzygium myrtifolium*, ground orchid (*Cymbidium sp*), water jasmine (*Echinodorus palaefolius*), etc. Identifying offered solutions such as conducting education on the utilization of family medicinal plants around the school environment and creating posters to aid in the education process. Scheduling educational activities on medicinal plants for SDN Kuin Cerucuk 5 Banjarmasin. Implementing educational activities for students and teachers at SDN Kuin Cerucuk V in Banjarmasin. Evaluating activities through post-education to measure students' knowledge after the educational utilization of plant activities. The evaluation activity is based on the range of values and categories related to the difference between pre-and post-activities. Distributing posters as a form of socialization for educational activities to maintain the cleanliness of the school environment. As for the formula to measure knowledge about family medicinal plants through

$$\text{Average value} = \frac{\text{number of correct answer}}{\text{number of questionnaire takers}} \quad (1)$$

Community knowledge about additives is expressed in categories as presented in Table 1

Value Range	Quality Category
85.00 < x ≤ 100.00%	Excellent
70.00 < x ≤ 85.00%	Good
50.00 < x ≤ 70.00%	Enough
01.00 < x ≤ 50.00%	Low

Result and Discussion

SDN Kuin Cerucuk V has adequate land that can be utilized for planting family medicinal plants. This potential can be meaningful for students as a means to enhance their knowledge. The area around the school serves not only as a habitat for various intentionally cultivated plants but also as a source of learning. Students have the opportunity to gather information from their surroundings, thus contributing to the teaching and learning activities. The natural environment serves as a learning resource that provides real experiences for students (Nurwidodo et al., 2022).

Based on observation results, there are several plants in the school environment, including hibiscus (*Hibiscus rosa-sinensis*), snake plant (*Dracaena trifasciata*), *Syzygium myrtifolium*, ground orchid (*Cymbidium sp.*), water jasmine (*Echinodorus palaeifolius*), umbrella plant (*Polyscias scutellaria*), crown of thorns (*Euphorbia milii*), Moses-in-the-Cradle (*Rhoe discolor L.Her.*), aloe vera, and pluchea indica. Generally, the available plants serve an aesthetic function to enhance the beauty of the school environment, but some plants have the potential to be family medicinal plants. Some plants have dual functions as ornamental and medicinal plants (Kartika, 2018), therefore, introducing various uses of plants is an important aspect of basic knowledge and can enhance students' roles in maintaining the school environment.

Some plants available in the school environment that have the potential for medicinal use are as follows: Pluchea Indica (commonly known as Beluntas) is a plant commonly found as a boundary in the schoolyard. Morphologically, Beluntas have characteristics such as alternate leaf arrangement, and egg-shaped leaves with pointed tips. Its habitus is that of a shrub with a distinctive leaf scent. Beluntas is utilized to reduce body odor and is used as a deodorant additive (Sinaga et al., 2020). The presence of tannins, flavonoids, sterols, and alkaloids in Beluntas has antibacterial effects on *Staphylococcus epidermidis* and *Streptococcus mutans* (Maftuhah et al., 2016; Setiawan & Musdalipah, 2018). (2) Aloe vera is a plant often placed in pots. Aloe vera has special characteristics with fleshy stems. Additionally, its leaves have small serrations along the edges and pointed tips. The leaves are green with spotted surfaces. Generally, people use Aloe vera for treating burns. There is evidence that Aloe vera combined with chitosan has the potential to treat cut wounds (Cahyaningrum & Susanti, 2022). Additionally, plants like hibiscus, snake plant, and Moses-in-the-Cradle serve aesthetic purposes in the school environment.

The community service activities were conducted in the classrooms of SDN Kuin Cerucuk V Banjarmasin. These activities involved presenting materials about the types and uses of medicinal plants around the environment. The provision of education aimed to enhance student's knowledge about the utilization of medicinal plants in the school environment. The activities included (1) welcoming remarks by the school principal and the head of the community service team, (2) recitation of prayers, (3) presentation of souvenirs to the school principal and group photos, (4) presentation of materials about the types and benefits of medicinal plants, (5) ice-breaking activities, and (6) distribution of posters to the school. Documentation of the education activities is presented in Figures 1 and 2.



Figure 1. Student educational activities



Figure 2. Taking a group photo with the service team, teachers and students at SDN Cerucuk V

Throughout the activity, the students showed good enthusiasm, as seen from their responses to the questions posed by the students. In addition to educational activities through lectures, the service team also prepared posters to internalize students' knowledge. Posters are a form of publication media consisting of text and images containing disseminable information. Posters play a role as informative media packaged with an attractive appearance so that students can recognize their meanings (Pradana et al., 2022; Wicaksana et al., 2020). Posters are part of educational media containing concise, clear, and communicative sentences accompanied by attractive designs and colors for readers. Posters are placed in the classroom to be read by all students in each class. The contents of the posters include "Keep the classroom clean," "Don't forget to water the plants," and "Do not pluck plants indiscriminately." The poster can be seen in Figure 2.



Figure 2. Example of a poster given to SDN Kuin Cerucuk V in Banjarmasin

After carrying out educational activities, it is continued with post-activity implementation by measuring students' knowledge after it is carried out. The results of students' knowledge are in Figure 3.

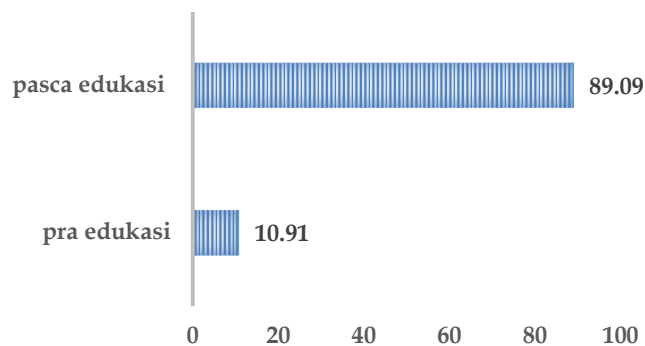


Figure 3. Knowledge of Pre- and Post-Education Students

Based on Figure 3, it is known that the student's knowledge increased by more than 300% compared to pre-education. Based on these findings, it is ensured that educational activities can enhance students' knowledge of plants in their surroundings. This is in line with the fact that outreach can increase public knowledge about plant utilization related to conservation efforts (Soendjoto et al., 2023).

This difference is marked in the pre-education stage where students were only able to recognize 4 out of 14 types of plants available in their environment. The four plants recognized by the students are aloe vera, hibiscus, water hyacinth, and mother-in-law's tongue. Other plants such as beluntas and mangkokan were not known by the students. The four recognized plants were identified by the students by mentioning specific characteristics or traits and their frequent use compared to other plants. In the post-training phase, it was found that students could recognize 12 types of plants available in the school environment well. Furthermore, students' ability to mention the utilization of plants could be done well by the students.

Conclusion

The educational activity on utilizing plants in the surrounding environment showed a positive response and enthusiasm. The school environment serves not only as a cultivation area for various plant species but also as a learning resource. Some plants available in the school environment also have potential medicinal properties, such as blunts. The educational activities were carried out through lectures in classrooms and the use of posters as a means of publication. The results of the education showed an increase in students'

knowledge, with an average score of 10.91 in pre-education and 89.01 in post-education.

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