The Potential of the Local Wisdom PjBL Model Applied to the Processing of Medicinal Plants in Talang Duku Village Jambi

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Article Info

ABSTRACT

Purpose of the study: This study investigates the integration of PjBL with local wisdom to develop an innovative PjBL-Ethnoscience learning model. Incorporating ethnoscience-based approaches into PjBL, this model aims to equip students with 21st-century skills. Specifically, the research explores the potential of this model in the context of medicinal plant processing in Talang Duku Village, Jambi.

Methodology: A qualitative approach was employed, utilizing surveys, interviews, and participant observation to gather comprehensive data on current medicinal plant processing practices and the potential impacts of implementing the PjBL-Ethnoscience model. The study involved close interaction with local practitioners and students to understand this integrated learning model's practical applications and educational benefits.

Main Findings: The findings reveal that the PjBL model's syntax effectively applies to medicinal plant processing activities. This integration enhances students' understanding of biological concepts related to plants and connects them with local cultural practices. The study demonstrates that such activities can serve as a robust foundation for biology education, particularly in plant-related topics, fostering a deeper appreciation of local knowledge and sustainable practices.

Novelty/Originality of this study: This research presents a novel approach by merging the PjBL model with ethnoscience, particularly in medicinal plant processing in Talang Duku Village, Jambi. The study preserves cultural heritage and promotes sustainable practices by leveraging local wisdom. This innovative model provides a science learning base intimately connected to students' cultural backgrounds, making education more relevant and engaging. The PjBL-Ethnoscience model enhances academic learning and instills a sense of community and environmental stewardship among students.

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1. INTRODUCTION

Local wisdom, which is often called traditional knowledge, has an important role in various communities throughout the world. It includes the accumulated knowledge, practices, and cultural heritage that have been passed down from generation to generation. This local wisdom often proves invaluable in overcoming various challenges, including in the processing of medicinal plants. In Talang Duku Village, located in Jambi province, Indonesia, the application of the PjBL model to the processing of medicinal plants is a unique and sustainable approach to utilizing traditional knowledge for the benefit of the local community [1].Talang Duku

Village, located in Muaro Jambi, is rich in biodiversity and natural resources. This area is home to a wide variety of medicinal plants that have been traditionally used by local residents for generations to treat health and wellness problems. This plant is not only a source of traditional medicine but also plays an important role in the culture and identity of the community[2]-[5].

This research aims to explore the potential of the PjBL model in preserving and promoting traditional knowledge of medicinal plant processing in Talang Duku Village. This report seeks to examine how this model can help preserve local wisdom, ensure equitable distribution of benefits, and contribute to sustainable management of medicinal plant resources. This study will explore traditional plant processing practices in villages, the challenges faced, and how the PjBL model can overcome the challenges of biology learning problems and can be used as a basis.

The PJBL model represents an opportunity to bridge the gap between modern approaches to medicinal plant processing and the invaluable traditional knowledge of Talang Duku Village. By exploring this potential, we hope to improve the welfare of communities, protect their cultural heritage, and contribute to the sustainable management of medicinal plant resources in the region[6]-[15]. This research aims to explain the innovative application of local wisdom for the benefit of everyone, and ultimately, become a model for similar initiatives in other regions. PjBL is a learning model with a scientific approach that is highly recommended for providing 21st century skills, namely Project Based Learning (PjBL) [17]- [20]. PjBL with a local wisdom approach is a learning model where students are given a project to solve problems based on aspects of PjBL practices that have long been used by many local communities. Therefore, research was carried out to explore the potential of the PjBL model in the processing of medicinal plants by the Talang Duku Jambi community.

2. RESEARCH METHOD

This research uses a qualitative method approach, which combines surveys, interviews, and participant observation to collect data regarding current medicinal plant processing practices and the potential benefits of implementing the PjBL model. This research was conducted in the Talang Duku area, Muaro Jambi Regency in March-July 2023. The data collected was divided into two, namely primary and secondary data and then analyzed using the Miles and Huberman models [21]. [22] The Miles and Huberman model is often used in conjunction with various qualitative data analysis software to facilitate data organization and analysis. The main advantage of this model is that it provides a structured framework for analyzing qualitative data and helps researchers derive meaning from their data systematically. [23] These researchers using this model will typically perform several iterations of data reduction, data presentation, and conclusion drawing, refining their analysis as they proceed. This model is flexible and can be adapted to various research contexts, making it a valuable tool for qualitative researchers.

3. RESULTS AND DISCUSSION

Based on the results of observation data analysis, interviews and documentation, the results of research PjBL with a local wisdom approach is a learning model where students are given a project to solve problems based on aspects of PjBL practices that have long been used by many local communities. Therefore, research was carried out to explore the potential of the PjBL model in the processing of medicinal plants by the Talang Duku Jambi community can be presented in the following table 1.

Table 1 Local wisdom of the Talang Duku community in processing plants into medicine

Local Wisdom	Description
Betemas	Betemas is a traditional treatment that uses turmeric as a healing medium and uses matra (prayer) where the turmeric is cut and thrown. After that it is attached to the head
Bebarut	Berbarut is a healing activity that uses parts of plants such as leaves, stems, roots and fruit which are used as a treatment medium by attaching them to the sick part of the body, usually before use it is heated (Layur).
Tepung tawar	Tepung Tawar is a healing activity carried out by making several types of plants and rice which are mashed or cut into small pieces and poured onto the sick parts of the body.
Betangas	Betangas is a steam bath made from herbs and plant parts.

Tabel 2. List of medicinal plants used by the people of Talang Duku Jambi

Local Name	Scientific name
Bunga Rayo	*Hibiscus rosa-sinensis*
Kunyit	*Curcuma domestica*
Lengkuas	*Alpinia galanga*)
Padi	*Oryza sativa*
Jahe	*Zingiber officinale*
Serai	*Cymbopogon citratus*
Duku	*Lansium domesticum var. Kumpeh*
Durian	*Durio zibethinus*
Jeriangau	*Acorus calamus*)

Based on Table 1, the results of the exploration of plant processing activities into medicinal media by the Talang Duku community have been passed down from generation to generation. There are 4 treatment techniques and 10 plants used. The techniques are betemas, bebarut and plain flour. Of these 4 techniques, there are 2 that describe the syntax of the PjBL model which has the potential to become a basis for learning biology regarding plant classification material and increasing a more comprehensive understanding of science, especially by incorporating local wisdom into the educational process. PjBL integrates local wisdom that is deeply rooted in community culture and traditions. [24]-[25] By connecting science concepts with local culture and practices, students can understand subject matter more easily. This relevance can make science more interesting and accessible. Local wisdom often involves practical knowledge and sustainable practices related to the environment, agriculture, health, and more. By incorporating real-world applications into science education, students can see the immediate relevance and practicality of scientific concepts. Local knowledge often covers various disciplines, such as biology, ecology, chemistry, and agriculture. PjBL can encourage interdisciplinary learning by connecting various branches of science through local knowledge. The local wisdom of the Talang Duku community is not only in medicine but in the form of processing plants into food coloring and traditional cooking spices. The picture shows women processing plants into traditional cooking spices.

Figure 1. Local wisdom of the Talang Duku Jambi Community

This approach can help students understand how various scientific disciplines are interconnected. PBL often emphasizes hands-on, experiential learning. Learners may have the opportunity to engage directly with local ecosystems, conduct experiments, or participate in traditional practices. This direct experience can deepen their understanding of scientific concepts. By integrating local wisdom, PJBL promotes respect for different cultures and their knowledge systems. [26]-[28]This inclusivity can create a more positive and inclusive learning environment, encouraging students from diverse backgrounds to engage with science. any local wisdom practices are related to environmental sustainability. By teaching these practices alongside scientific principles, PjBL can foster a sense of concern for the environment and awareness of ecological issues. Critical thinking and problem Solving: Indigenous knowledge often involves solving complex problems with limited resources. PjBL can encourage students to develop critical thinking and problem solving skills by applying scientific methods to local challenges. Community involvement, PjBL usually involve close collaboration with local communities.

This can provide students with the opportunity to work alongside experts and community members, gaining insight and knowledge that may not be available in a traditional classroom. Preservation of traditional knowledge, By incorporating local wisdom into science education, PJBL contributes to the preservation and

revitalization of traditional knowledge systems, ensuring that valuable cultural practices and knowledge are passed on to future generations[29]-[32]. Global perspective, apart from focusing on local wisdom, PJBL can also encourage students to think globally. They may see how local knowledge and practices connect to broader scientific and environmental issues, fostering a global perspective.

4.   CONCLUSION

In conclusion, there is potential for applying the local wisdom PJBL model to the processing of medicinal plants in Talang Duku Village, Jambi. This potential can be seen in the treatment of betemas, bebarut, betangas and plain flour which in the processing process illustrates the syntax of the PjBL model. Apart from that, it can also be concluded that this local wisdom is also able to empower communities, preserve traditional knowledge, encourage sustainability, improve health outcomes, and create economic opportunities.

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