



## **Ethnomedicine as a Phenomenological Pedagogical Bridge: Optimizing Contextual Learning in Phase E through Local Lived Experiences**

**Friti Sinta<sup>1</sup> Fitri Arsih<sup>2</sup> Syamsurizal<sup>3</sup> Relsas Yogica<sup>4</sup>**

<sup>1, 2, 3, 4</sup>Universitas Negeri Padang

Email: [pritisinta1406@gmail.com](mailto:pritisinta1406@gmail.com)

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**Abstract:** *Biology learning in Phase E under the Merdeka Curriculum emphasizes the importance of contextual learning grounded in students' real-life experiences. However, the implementation of contextual learning often remains superficial and has not fully addressed the meaning-making dimension of learning. This study aimed to explore local ethnomedicinal knowledge as lived experience and to examine its relevance for optimizing contextual learning in Phase E biology education. This study employed a qualitative research design using a phenomenological approach. Data were collected through in-depth interviews with informants who had direct experience with ethnomedicinal practices and were analyzed to reveal the essential meanings of these experiences. The findings indicate that ethnomedicine is experienced as embodied knowledge embedded in everyday practices and supported by strong cultural legitimacy. Conceptually, this study positions ethnomedicine as a phenomenological pedagogical bridge that connects students' lived cultural experiences with abstract biological concepts. The findings contribute to a meaning-oriented framework for contextual learning and offer conceptual insights aligned with the principles of Phase E learning in the Merdeka Curriculum.*

**Keywords:** *ethnomedicine; contextual learning; phenomenology; Phase E biology; Merdeka Curriculum*

**Abstrak:** Pembelajaran Biologi Fase E dalam Kurikulum Merdeka menekankan pentingnya pembelajaran kontekstual yang berangkat dari pengalaman nyata peserta didik. Namun, implementasi pembelajaran kontekstual masih sering bersifat permukaan dan belum menyentuh aspek pemaknaan pengalaman belajar. Penelitian ini bertujuan untuk mengeksplorasi pengetahuan etnomedisin lokal sebagai pengalaman hidup (lived experience) serta mengkaji relevansinya dalam mengoptimalkan pembelajaran kontekstual Biologi Fase E. Penelitian ini menggunakan pendekatan kualitatif dengan metode fenomenologi. Data dikumpulkan melalui wawancara mendalam dengan informan yang memiliki pengalaman langsung dalam praktik etnomedisin, kemudian dianalisis untuk mengungkap makna esensial dari pengalaman tersebut. Hasil penelitian menunjukkan bahwa etnomedisin dipahami sebagai pengetahuan yang dialami, terwujud dalam praktik sehari-hari, dan memiliki legitimasi budaya yang kuat dalam kehidupan masyarakat. Secara konseptual, penelitian ini memposisikan etnomedisin sebagai jembatan pedagogis berbasis fenomenologi yang menghubungkan pengalaman budaya peserta didik dengan konsep-konsep biologi yang bersifat abstrak. Temuan ini memberikan kontribusi konseptual bagi pengembangan pembelajaran kontekstual yang berorientasi pada pemaknaan dan relevan dengan prinsip pembelajaran Fase E dalam Kurikulum Merdeka.

**Kata kunci:** etnomedisin; pembelajaran kontekstual; fenomenologi; Biologi Fase E; Kurikulum Merdeka

## INTRODUCTION

Learning in Phase E of senior high school under the Merdeka Curriculum emphasizes the importance of contextual learning that connects scientific knowledge with students' real-life experiences (Hasnawati, 2012). Learning is no longer positioned merely as the transmission of abstract biological concepts, but as a process of meaning construction rooted in learners' interactions with their social, cultural, and ecological environments. In this context, contextual learning is expected to foster meaningful understanding, critical thinking, and relevance between school knowledge and everyday life (Putri, 2023). However, in practice, contextual learning is often implemented superficially, limited to the use of examples or illustrations drawn from students' surroundings without engaging the deeper meanings embedded in their lived experiences. As a result, local contexts function merely as pedagogical accessories rather than epistemological foundations for learning. This gap indicates that contextual learning still requires approaches that are capable of engaging students at the level of meaning-making, not only content familiarity.

One promising yet underutilized source of contextual meaning is local ethnomedicinal knowledge, which refers to community-based knowledge systems related to the use of plants and natural resources for maintaining health and treating illnesses developed through long-term interactions between humans and their environment (Kanne Dachi & Tambunan, 2025). In many rural communities, ethnomedicinal practices are not perceived as alternative knowledge but as everyday lived experiences transmitted across generations through observation, practice, and social interaction (Romadhonsyah *et al.*, 2025).

In educational research, ethnomedicine has predominantly been discussed as local content or cultural enrichment integrated into science learning. Previous studies largely emphasize its role in increasing student motivation, engagement, or cultural awareness, which tends to position ethnomedicine as an external supplement to formal science education rather than as a meaningful knowledge system shaping students' understanding of biological phenomena (Fitriyah *et al.*, 2022).

This study argues that ethnomedicine should not be treated merely as contextual content, but rather as a phenomenological bridge between students' lived cultural experiences and abstract biological concepts. From a phenomenological perspective, knowledge is constructed through lived experience and the meanings individuals attach to those experiences, positioning local cultural practices as embodied knowledge that carries meaning and legitimacy within learners' environments (Zahavi, 2019). In the context of Phase E learning, particularly in biological topics such as viruses, bacteria, and fungi, ethnomedicinal practices provide concrete entry points for conceptual understanding by connecting indigenous knowledge with formal scientific concepts, enabling students to negotiate meaning rather than perceiving the two knowledge systems as separate or conflicting (Sudarmin, 2014).

Therefore, this study aims to explore local ethnomedicinal knowledge as lived experience and to examine its potential role in optimizing contextual learning in Phase E. By employing a phenomenological approach, this research seeks to uncover the essential meanings underlying ethnomedicinal practices and to articulate their pedagogical relevance for biology education, particularly in relation to contextual and culturally grounded learning (Hasnawati, 2012).

The novelty of this study lies in its conceptual positioning of ethnomedicine as a phenomenological pedagogical bridge that connects lived cultural knowledge with formal

biological abstraction. Rather than focusing solely on instructional effectiveness, this study contributes a meaning-oriented framework for contextual learning that supports culturally responsive science education in Phase E (Sudarmin, 2014).

## **METHOD**

### **1. Research Design**

This study employed a qualitative research design using a phenomenological approach to explore local ethnomedicinal knowledge as a lived experience of the community and to examine its relevance for contextual Biology learning in Phase E. The phenomenological approach was selected because it enables an in-depth exploration of the subjective meanings attached by community members to ethnomedicinal practices they experience and perform in their daily lives, rather than merely describing the types of plants or their uses.

### **2. Research Context and Participants**

The research was conducted within a community where ethnomedicinal practices remain an integral part of everyday life. Participants were selected through purposive sampling based on the following criteria:

- a. having direct experience in using medicinal plants,
- b. possessing knowledge about the methods and purposes of ethnomedicinal use, and
- c. being involved in the intergenerational transmission of ethnomedicinal knowledge.

Participants consisted of community members considered to have relevant experiential knowledge of ethnomedicine, such as elders, community figures, or individuals who regularly apply medicinal plants in family health practices.

### **3. Data Collection Techniques**

Data were collected through in-depth semi-structured interviews aimed at exploring participants' experiences, interpretations, and meanings related to ethnomedicinal practices. The interviews focused on:

- a. types of medicinal plants used,
- b. methods of utilization,
- c. sources of ethnomedicinal knowledge, and
- d. the meanings and values attached to these practices in everyday life.

In addition to interviews, field notes were used to document social contexts, participant expressions, and situational aspects observed during the data collection process, thereby enriching the understanding of participants' lived experiences.

### **4. Data Analysis**

Data analysis was conducted using phenomenological analysis, which involved the following stages:

- a. verbatim transcription of interview data,
- b. repeated reading of transcripts to obtain a holistic understanding,
- c. identification of significant statements related to ethnomedicinal experiences,
- d. formulation of meanings from these statements, and
- e. clustering the meanings into essential themes representing the core nature of ethnomedicinal practices as lived experiences.

This analytical process aimed to reveal the essential meanings underlying ethnomedicinal practices rather than to measure frequencies or produce statistical generalizations.

### **5. Trustworthiness**

Trustworthiness was ensured through credibility and confirmability. Credibility was enhanced by careful attention to the consistency of participants' narratives and sustained engagement during the interview process. Confirmability was supported through reflexive notes to ensure that interpretations were grounded in participants' accounts rather than researcher assumptions.

## **6. Ethical Considerations**

Ethical considerations were observed throughout the study. Participants were informed about the purpose of the research prior to data collection, and informed consent was obtained. Participant anonymity and confidentiality were maintained by using pseudonyms and excluding identifiable information from the research report.

## **RESULT AND DISCUSSION**

### **Results**

The findings indicate that local ethnomedicinal knowledge is perceived by community members not merely as information about medicinal plants, but as an integral part of their everyday lived experiences. This knowledge is acquired through direct interaction with the surrounding environment and transmitted across generations through practice, observation, and social experience within families and communities.

One informant explained that the use of medicinal plants has been a common practice since childhood and is learned through lived experience rather than formal instruction:

*“Since childhood, our parents have taught us which leaves to use for fever or wounds. It is something ordinary, not something new or strange.”* (Informant 1)

This finding suggests that ethnomedicine functions as lived knowledge, rather than as abstract or symbolic information. Such practices possess strong cultural legitimacy and are understood as contextually appropriate health solutions within the local environment.

Another informant emphasized that ethnomedicinal practices are inseparable from daily life and shape how community members understand health and illness:

*“For minor illnesses, we usually do not go directly to a doctor. We first try the herbal remedies that have long been used in our households.”* (Informant 3)

These findings demonstrate that ethnomedicine represents a form of embodied knowledge, embedded in social practice and carrying both functional and cultural meaning.

### **Discussion**

The findings of this study suggest that ethnomedicine should not be positioned merely as local content or as a supplementary component in biology education. Instead, ethnomedicine functions as a meaningful source of knowledge that can serve as a pedagogical bridge between students' lived cultural experiences and abstract biological concepts. From a phenomenological perspective, knowledge is constructed through lived experience and the meanings individuals attach to those experiences. Therefore, ethnomedicine holds epistemological potential to connect cultural knowledge with formal school science.

This finding aligns with the work of Syafiuli, Wasita Aji, and Salsabiltisa (2025), who argue that learning grounded in indigenous knowledge through an ethnopedagogical approach fosters culturally responsive education and enhances student engagement. In

this view, local knowledge does not merely function as contextual illustration, but as a foundation for meaning-making in the learning process.

Furthermore, a systematic review by Ali et al. (2025) highlights that the integration of ethnoscience in science education contributes to improved scientific literacy and conceptual understanding, as learners relate scientific explanations to familiar real-life experiences. This supports the findings of the present study that ethnomedicine enables students to negotiate meaning between indigenous knowledge and formal biological concepts, particularly in topics related to viruses, bacteria, and fungi.

Unlike previous studies that primarily assess the effectiveness of ethnomedicine integration in terms of learning outcomes or student motivation, this study emphasizes meaning-making as the core of contextual pedagogy. Ethnomedicine is not treated merely as a local example, but as pre-existing experiential knowledge that learners bring into the classroom and through which scientific concepts can be meaningfully understood.

These findings are also consistent with Yuliana *et al.* (2021), who demonstrated that ethnoscience-based contextual learning enhances students' scientific literacy by facilitating conceptual understanding through lived experience. Thus, science learning extends beyond the transmission of concepts toward supporting learners in constructing meaning grounded in their everyday realities.

Within the context of Phase E learning under the Merdeka Curriculum, this study contributes a conceptual insight that contextual learning should move beyond superficial references to students' environments. Meaningful contextual learning must be rooted in learners' lived experiences and position local knowledge as an epistemological foundation rather than a pedagogical accessory.

### **Conceptual Novelty**

The conceptual novelty of this study lies in its positioning of ethnomedicine as a phenomenological pedagogical bridge that connects lived cultural knowledge with formal biological abstraction. Rather than focusing on instructional effectiveness or measurable learning outcomes, this study offers a meaning-oriented framework for contextual learning, contributing both theoretical and practical implications for culturally responsive biology education in Phase E.

### **Pedagogical Implications**

The findings of this study suggest several pedagogical implications for biology learning in Phase E under the Merdeka Curriculum. First, ethnomedicinal knowledge can be utilized not merely as contextual examples, but as meaningful entry points for conceptual understanding. Teachers may design learning activities that begin with students' lived experiences related to traditional health practices before introducing formal biological explanations.

Second, positioning ethnomedicine as experiential knowledge allows learners to actively negotiate meaning between indigenous knowledge and scientific concepts. This approach supports contextual learning that is epistemologically grounded, enabling students to perceive science not as detached from daily life but as connected to familiar cultural practices.

Third, a phenomenological orientation encourages teachers to shift from content transmission toward facilitating meaning-making processes. By acknowledging students'

prior cultural experiences as legitimate knowledge, biology learning can become more inclusive and culturally responsive without compromising scientific rigor.

Importantly, these pedagogical implications do not prescribe specific instructional models or claim direct improvements in learning outcomes. Rather, they highlight the potential pedagogical relevance of ethnomedicine as a foundation for contextual learning aligned with the principles of Phase E in the Merdeka Curriculum.

## CONCLUSION

This study explored local ethnomedicinal knowledge as lived experience and examined its potential role in optimizing contextual learning in Phase E biology education. Through a phenomenological approach, the findings reveal that ethnomedicine is experienced by community members as embodied and meaningful knowledge embedded in everyday life rather than as alternative or supplementary information.

The study contributes conceptually by positioning ethnomedicine as a phenomenological pedagogical bridge between students' lived cultural experiences and abstract biological concepts. This perspective extends existing discussions on contextual learning by emphasizing meaning-making rather than instructional effectiveness or learning outcomes.

Within the framework of the Merdeka Curriculum, the findings suggest that meaningful contextual learning should be grounded in learners' lived experiences and recognize local knowledge as an epistemological foundation for understanding scientific concepts. While this study does not claim direct pedagogical outcomes, it offers a conceptual framework that may inform culturally responsive biology education in Phase E.

Future research may further explore how phenomenologically grounded local knowledge can be translated into specific instructional designs and examined across diverse educational contexts.

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