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Needs Analysis of the Development of Ethnomedicine Books as a Source of Student Learning in Ethnobotany Courses

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ABSTRACT

Book development is very important to do support the learning process because it is integrated with the competencies that must be mastered and learned by students. The first step before developing the book is to conduct a needs analysis. This activity aims to determine the level of student need for the availability of books as learning resources used during ethnobotany lectures on ethnomedicine material. This research was conducted on 35 student of biology at the State University of Medan. This research is a qualitative descriptive study using a survey method. Data collection was carried out using a closed questionnaire. The results showed that the analysis of learning materials, as many as 62.9% of respondents said that ethnomedicine is one of the difficult materials in ethnobotany courses. The highest percentage is when identifying plants used as medicine (54.3%). Based on the needs analysis, 54.3% of respondents needed ethnomedicine books to add insight, so that 51.4% of respondents strongly agreed to develop ethnomedicine books as learning resources. It can be concluded that it is necessary to develop an ethnomedicine book as a learning resource that is prepared based on student needs and adapted to the sub-CPMK of ethnobotany subjects on ethnomedicine material. This research is useful to determine the need for learning resources needed to overcome the problems faced by students in learning activities so that the products developed are in accordance with the needs of students.

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INTRODUCTION

Learning activities are activities that are carried out systematically and consist of various components such as educational goals, educators, students, learning methods or approaches, learning materials or materials, learning media or tools, learning resources, and evaluation of learning activities (Dolong , 2016). The learning process is a unity of components that are interrelated with each other and interact with each other to achieve the expected results optimally in accordance with the goals set (Hanafy, 2014). One of the

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important components to be developed is teaching materials.

Teaching materials are a form of material that can be used to assist educators in carrying out teaching and learning activities in the classroom and in the laboratory (Rezeqi, *et al.*, 2020). These teaching materials development activities must be integrated and support the learning process. One of the teaching materials that can be developed is books.

A good book will be a good learning resource for students in obtaining the information they need. Utilization of learning resources in the teaching and learning process plays a very important role for the implementation of interesting and meaningful learning activities (Fitriansyah, 2019). This is because learning resources can help and provide concrete learning experiences so that the objectives of learning can be achieved effectively and efficiently (Kasrina, *et al.*, 2012).

Ethnomedicine is one of the sub-topics in the ethnobotany course. Ethnomedicine is knowledge of various ethnic groups in maintaining their health. Ethnomedicine etymologically comes from the words ethno (ethnic) and medicine (drug). This means that ethnomedicine has a relationship with at least two things, namely ethnicity and medicine (Silalahi, 2016). Learning Outcomes of the Ethnobotany Sub-Material of Medicinal Plants (CPMK) are students who are able to explain the types of plants used by ethnic Indonesians as medicinal plants. This activity aims to broaden students' horizons about the plants used by certain ethnic groups in their respective treatment processes, because in general they are of different ethnicities, and the ways in which plants are used as medicine are also different.

Many studies on ethnomedicine have been carried out in Indonesia, including: Setyowati & Wardah (2007) on the diversity of medicinal plants of the Talang Mamak community around Bukit Tigapuluh National Park, Riau; Silalahi, *et al.* (2013) about local knowledge and diversity of medicinal plants in the Karo Batak sub-ethnic group in North Sumatra; Indriati (2016) regarding ethnobotany of medicinal plants used by tribal children in Tabun Village, VII Koto District, Tebo Regency, Jambi; Handayani (2015) regarding the use of medicinal plants by the community around the Gunung Simpang Nature Reserve, West Java; Octavia, *et al.* (2017) on the study of ethnobotany of medicinal plants in the area around Lake Buyan-Tamblingan, Bali; Nasution, *et al.* (2018) regarding the empirical use of medicinal plants in the Mandailing tribe in Batang Gadis National Park, North Sumatra; Elsi, *et al.* (2020) regarding the ethnobotany of medicines used by the Dayak Meratus indigenous people in the village of Hulu Sungai Selatan Regency, South Kalimantan.

Of the many studies that have been described, none of these studies have discussed the development of books that can be used by students as learning resources. Because of the importance of this ethnomedicine research, it is necessary to document in the form of a book that can be used as a means of reintroducing local knowledge, especially about the use of plants as medicine. It is intended that this local knowledge remains sustainable and can also be used as a source of learning for students in studying ethnobotany ethnomedicine material.

This research is a preliminary study of the development of ethnomedicine books as a source of student learning. The development of this book was carried out based on a student needs analysis questionnaire. This activity aims to determine student needs for the availability of books as learning resources used during ethnobotany lectures on ethnomedicine material. This research is expected to be the main basis for analyzing the importance of this

book being developed before the next stages, such as the design, development, implementation, and evaluation stages so that it becomes a unified whole for the development of a useful book to promote and preserve local knowledge about medicinal plants used by the community. ethnic groups in Indonesia.

METHOD

This research is a qualitative descriptive type using a survey method, and was carried out at Medan State University in February 2021. The population in this study were all biology students at Medan State University. The sampling technique was done by purposive sampling. The criteria for the respondents involved in this study were biology students in semester VI of the 2020/2021 academic year who were taking ethnobotany courses. Data collection techniques using instruments in the form of closed questionnaires to see the level of difficulty and the need for learning resources needed by students during ethnobotany lectures for ethnomedicine material. The distribution of this questionnaire is done online using Google Form. There are 35 students who have become respondents in this study. The data obtained were then analyzed by descriptive percentage.

RESULTS AND DISCUSSION

Learning Material Analysis

Material analysis relates to facts, concepts or principles of material relevant to the development of books in learning. The results of the study based on questionnaires that have been filled out by respondents related to the analysis of difficulties of learning materials in studying ethnobotany subjects, ethnomedicine materials can be seen in Table 1.

Table 1. Recapitulation of the Results of the Difficulty Analysis of Learning Materials

No	Question	Findings
1.	Do you think that the ethnomedicine material in the ethnobotany course needs to be studied?	Highly Necessary (48.6%) Necessary (48.6%) Unnecessary (0%) Highly Unnecessary (2.9%)
2.	Do you have difficulty in studying ethnomedicine material in ethnobotany courses?	Yes (62.9%) No (37.1%)
3.	In which part do you think you have difficulty in studying ethnomedicine material in ethnobotany courses? (There can be more than 1 answer) Note: 35 respondents	Identification of medicinal plants (54.3%) Identification of methods to treat certain people (31.4%) Identification of the uses and benefits of traditional medicines used by the community (37.1%) Miscellaneous (2.9%)

Table 1 shows that as many as 17 respondents (48.6%) who have filled out the questionnaire said that the ethnomedicine material is very necessary to be studied. This is because the ethnomedicine material emphasizes two things, namely the knowledge and behavior of the community in preventing and curing disease (Fitmawati, *et al.*, 2016). Ethnomedicine studies are important especially to find new chemical compounds with fewer side effects, resistant effects caused by existing drugs, and prevention methods

before the emergence of new diseases. (Silalahi, 2016). It has great potential and prospects in the development of herbal and herbal medicines for health, industrial products, and also tourism, targeting domestic and foreign markets (Fitmawati, *et al*., 2016). In addition, by studying ethnomedicine material, students have indirectly been educated in caring for and preserving plants and local knowledge, because according to Silalahi (2016) when viewed from the progress of science and technology (internet, cell phones), acculturation, and forest fires will accelerate the rate of loss of local knowledge from year to year.

Based on the results of the questionnaire, 22 respondents (62.9%) said that ethnomedicine is one of the most difficult materials in ethnobotany courses. The difficulty of ethnomedicin material according to the respondents lies in identifying plants used as drugs (54.3%). This is supported by O'Brien's (2010) research that 70% of students' answers during the identification exercise answered they did not know the identified plants. According to Liunokas (2020), it is difficult to understand the characteristics of the plants found, because students only read concepts without applying their knowledge in the field. Likewise, the low ability to identify plants in the surrounding environment is because these plants are rarely used.

Improving student identification skills can be done in several ways, for example students can be invited to always read books about plant identification, invite students to directly see plants in the field, and ask students to describe the plants they get (Susilawati & Sugandi, 2018).

The material analysis carried out is also related to the collection of information on ethnomedicine material by searching for various sources that support ethnomedicine research and also preparing books that are adapted to the ethnomedicine sub-CPMK in ethnobotany courses. This activity uses sources such as books and publications journals. This is in line with Cahyadi (2019) that material analysis aims to identify the main parts of the material that will be developed and compiled systematically as a basis for formulating the formulation of the learning objectives developed.

Learning Resource Needs Analysis

The results of the study based on questionnaires that have been filled out by respondents regarding the need for the development of an ethnomedicine book can be seen in Table 2.

Table 2. Recapitulation of Learning Resource Needs Analysis Results

No	Question	Findings
1.	Do you have textbooks or other handbooks for ethnomedicine material in ethnobotany courses?	Yes (25.7%) No (74.3%)
2.	How many books do you use as learning resources for ethnomedicine material in ethnobotany courses?	< 1 Book (68.6%) 1-2 Books (28.6%) 2-3 Books (2.9%) > 3 Books (0%)
3.	Are you looking for other learning resources to help you understand the ethnomedicine material in the ethnobotany course?	Always (17.1%) Often (17.1%) Sometimes (51.4%) Never (14.3%)
4.	What learning resources did you use when studying ethnomedicine in the ethnobotany course? (There can be more than 1 answer)	Textbooks (40%) Modules (28.6%) Internet (82.9%) *E-book* (37.1%)

	Note: 35 respondents	National Journals (74.3%) International Journals (17.1%)
5.	Do you need an ethnomedicine book in ethnobotany courses to increase your insight and knowledge about medicinal plants?	Highly Necessary (45.7%) Necessary (54.3%) Unnecessary (0%) Highly Unnecessary (0%)
6.	Do you agree with the development of books as a learning resource so that it is easier to understand ethnomedicine material in ethnobotany courses?	Highly Agree (51.4%) Agree (48.6%) Disagree (0%) Highly Disagree (0%)
7.	How do you develop books as a learning resource that you want to help study ethnomedicine material in ethnobotany courses? (There can be more than 1 answer) Note: 35 respondents	Equipped with pictures of plants (71.4%) Equipped with the benefits of plants used by the community (74.3%) Equipped with medicinal plant processing methods (74.3%)

Based on Table 2, 26 respondents (74.3%) who have filled out research questionnaires say that they do not have textbooks or other handbooks for ethnomedicine material in ethnobotany courses. This can be seen from the statement of 24 respondents (68.6%) who do not have books. In fact, books are one of the teaching materials whose presence is needed by students in supporting the learning process both when in class and during independent learning activities.

The books used can be in the form of text books or non-text books that support the lecture material. Textbooks are commonly used to support learning activities that contain descriptions of certain materials that are arranged systematically with a specific purpose (Rahmawati, 2015), while non-text books are companion books that support the learning process at every level of education (Rofi'ah, *et al.*, 2021).

To overcome the lack of learning resources, most respondents (82.9%) seek their learning resources from the internet. The rapid development of technology, namely the internet, has changed the paradigm to obtain various kinds of information without being limited by space and time. The high use of the intern*et al*so increases the value of the benefits of the internet, for example in the learning process.

Through the internet, students can access various information and knowledge according to their needs that are relevant to the lecture material. Utilization of the internet network as a learning resource will help simplify and speed up the completion of lecture assignments (Setiyani, 2010). The internet can also access various kinds of references such as research results and study articles from various fields (Sasmita, 2020). Through the internet, learning materials delivered by teachers can be accessed completely by students so that this can provide broad insight to students (Anisah & Azizah, 2017).

Based on the questionnaire that has been filled out by students, 19 respondents (54.3%) said that they still need ethnomedicine books to broaden their knowledge. According to Siahaan, *et al*. (2021) teaching materials in the form of books can facilitate the learning process and have attractiveness and are able to motivate students to be more active in the learning process, more interactive, and more critical to answer various problems related to the material. Surahman & Yeni (2019) also added that the teaching and learning process will be more effective if there are textbooks

that match the material presented by the lecturer.

If the purpose of learning is to make students proficient in various kinds of competencies, to achieve these goals students must have experience and practice in finding information. An effective tool for this is textbooks because they already present it programmatically (Efendi, 2009). Therefore, from the results of this needs analysis questionnaire, 18 people (51.4%) of respondents strongly agreed to develop an ethnomedicine book to support their knowledge in studying ethnobotany.

Based on the questionnaire that has been filled out by respondents, the development of books as learning resources needed to help study ethnomedicine material in ethnobotany courses is equipped with pictures of plants (71.4%), with the benefits of plants used by the community (74.3%), as well as by processing medicinal plants (74.3%). Pictures of plants are needed to identify the types of plants that can be used as medicinal herbs, both single ingredients and mixtures. The benefits of medicinal plants are needed to identify the uses of plants that are used as drugs, while the method of processing medicinal plants is needed to find out how plants can be processed into medicines. Usually, there are several of the same herbs that can be used to treat a single disease, but the way they are used may differ.

There are several suggestions given by students regarding the development of ethnomedicine books that are developed as learning resources to make them easier to understand, including: 1) the books to be developed are equipped with pictures of medicinal plants, local names and scientific names of medicinal plants, descriptions of medicinal plants, benefits or efficacy of medicinal plants, methods of use or processing of medicinal plants, and medicinal properties of plants; 2) the language used is communicative and easy to understand; 3) the references used in the book are relevant to the contents of the book; 4) The appearance of the book cover must be attractive and reflect the contents of the book.

CONCLUSION

Based on the analysis of learning materials, as many as 22 respondents (62.9%) said that ethnomedicine is one of the difficult materials in ethnobotany courses. The highest difficulty lies in identifying plants used as medicine (54.3%). Meanwhile, based on the analysis of the need for book development, 19 respondents (54.3%) needed ethnomedicine books to broaden their knowledge, so as many as 18 people (51.4%) respondents strongly agreed to develop ethnomedicine books in ethnobotany courses as a learning resource. The book was then developed based on the results of a questionnaire that had been filled out by students which was adjusted to the sub-CPMK of the ethnobotany course on ethnomedicine material.

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