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Practicality of the Pocketbook "Keanekaragaman Lepidoptera di Hutan Mangrof"

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Abstract

Students should receive material that is contextual and in a relaxed atmosphere so that it is easier to understand the learning material. For this reason, a pocketbook with teaching materials with local potential is an option. This study aimed to evaluate the practicality of the Pocketbook "Keanekaragaman Lepidoptera di Hutan Mangrof" or "Lepidoptera Diversity in the Mangrove Forest". This research is a development research with Tessmer's formative evaluation model that focuses on the practicality of the pocketbook. The expected practicality data were collected through a practicality test questionnaire in a small group (5 students) and actual practicality data were collected through field tests (17 students) with student response questionnaires. The data that has been filled in on the practicality test questionnaire instrument were analyzed quantitatively from the calculation of the total score of indicators and then analyzed by the formula for calculating the practical value. The test results show that the pocketbook which is the result of development research related to the diversity of Lepidoptera in the mangrove forest is categorized as very practical.

Abstrak

Siswa sebaiknya menerima materi yang bersifat kontekstual dan dengan suasana santai agar lebih mudah memahami materi pembelajaran. Untuk itu, buku saku dengan bahan ajar bermuatan potensi lokal merupakan salah satu pilihan. Penelitian ini bertujuan untuk mengevaluasi kepraktisan Buku Saku "Keanekragaman Lepidoptera di Hutan Mangrof". Penelitian ini merupakan peneltian pengembangan dengan model evaluasi formatif Tessmer yang berfokus pada kepraktisan buku saku. Data kepraktisan harapan dikumpulkan melalui angket uji kepraktisan dalam kelompok kecil (5 siswa) dan data kepraktisan aktual dikumpulkan melalui uji lapangan (17 siswa) dengan angket respons siswa. Data yang telah diisi pada instrumen angket uji kepraktisan dianalisis secara kuantitatif dari perhitungan skor total semua indikator dan kemudian dianalisis dengan rumus perhitungan nilai kepraktisannya. Hasil uji menunjukkan bahwa buku saku yang merupakan hasil riset pengembangan terkait dengan keanekaragaman Lepidoptera di hutan mangrof ini dikategorikan sangat praktis.

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A. Introduction

Many biodiversity materials are taught in biology learning at the high school level in Indonesia. Teachers must understand that learning materials should be contextual. One of the solutions to increase the success of contextual learning is to provide material on biodiversity based on local potential. This condition makes it easier for students to understand learning material and behave independently because the material is in the environment around students. Local-content teaching materials are teaching materials that take advantage of the surrounding environment (Suwarni, 2015). Local content is not only all the potentials and works that characterize the area, but also the natural and human resources in the area (Marliana & Hikmah, 2013)

Of course, it is not just material that can increase the success of learning biology. The packaging of attractive learning materials in the form of books that save space, are lightweight, and can be carried anywhere, in the sense used by students to learn, both inside and outside the classroom is an important and supportive aspect. Several pocketbooks on biology learning have been developed in high schools in Indonesia, such as those related to the respiratory system by Muhammad et al. (2015), the human excretory system by Fitrianti et al. (2018), Angiosperms based on environmental exploration by Lestari & Kuntjoro (2018), and biodiversity (Saputra & Sari, 2018). Pocketbook is a small book that can be stored in a pocket and is easy to carry everywhere (Damayanti, 2018; BPPB Kemdikbud, 2020).

To answer the two things mentioned above, pocketbook entitled 'Keragaman Lepidoptera di Hutan Mangrof' or 'Diversity of Lepidoptera in Mangrove Forests' has have been arranged. Furthermore, the practicality of the pocketbook was tested. The mangrove forest where this research was conducted and is a manifestation of the ecosystem diversity, is located in Pagatan Besar Village, Tanah Laut Regency. In this mangrove forest that is planned to become an ecotourism area (Soendjoto, 2019), some research regarding various species have been published, including those related to flora (Soendjoto & Arifin, 1999), birds (Riefani & Arsyad, 2019), Gastropoda (Nugroho et al., 2019), and fish (Kadarsah et al., 2019, 2020).

B. Materials and Method

This development research used the Tessmer's formative evaluation model focusing only on product practicality testing (Tessmer, 2013). The product practicality test consisted of small group tests and field tests only.

The initial stage of the research was to make an instrument of product practicality test. The practicality test instrument is in the form of a student response test questionnaire containing questions about the use of a pocket book with the title as mentioned above. The expected practicality data were collected through a questionnaire with the practicality test of learning media by students in the small group test, while the actual practicality data were collected through a student response questionnaire in the field test. Data were analyzed quantitatively by calculating the total score for all indicators and then analyzed by the formula for the practicality value of the pocketbook.

The research objects were 5 students for the small group test and 17 students for the field test. The students came from Class X SMAN 1 Kurau, Tanah Laut Regency. The criterion used to select students in the small group test was the representation of those who have the ability and knowledge of biodiversity. Furthermore, the criteria for students involved in field test were not familiar with the device as part of learning, learning strategies, learning environments, new software, targets to be achieved, and have not participated in a series of field tested product development tests.

The product (pocketbook) was practical if the response from students is at least 60%. The type of practicality data was quantitative data in the form of user assessment scores. The values that have been filled in on the questionnaire instrument were then calculated and analyzed using the following steps.

a. Add up the total score for all indicators.
b. Assess the practicality using the formula and categorize it based on the modified practicality category of Sugiyono (2013). The practicality calculation formula is: $P = \frac{f}{N}$
where P is total score, f is score, and N is maximum score. Practicality categories are presented in Table 1.

Table 1 Practicality category

No	Criteria (%)	Category
1	80.00 – 100	Very Practical
2	60.00 – < 80.00	Practical
3	40.00 – < 60.00	Quite Pratical
4	20.00 – < 40.00	Less Practical
5	0 – < 20.00	Not Practical

Source: Modified from Sugiyono (2013)

C. Results and Discussion

In general, less than 10% of students in both expected practicality and actual practicality tests responded that this pocketbook was impractical

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(Table 2). In other words, this pocketbook is very practical in learning biology, regarding especially materials of Lepidoptera diversity.

Table 2 Student response to the pocketbook practicality

No.	Questions	Expectation (%)		Actual (%	
		Yes	No	Yes	No
1	Are the contents of the pocketbook's easy to learn and the implementation of its contents related to writing, language, pictures, and supporting information in it to foster creative thinking skills?	80	20	88	12
2	Can the meaning of the instructions given to acquire creative thinking skills be understood?	100	0	88	12
3	Is the time provided for studying the pocketbook sufficient?	80	20	88	12
4	The study time exceeds the predetermined schedule, can we continue studying not in class session?	100	0	94	6
5	Have the contents of the pocketbook related to how to practice creative thinking have never been doing before?	100	0	100	0
6	Was there no pocketbook learning method before?	100	0	100	0
7	Is the learning material interesting to learn?	80	20	88	12
	Total	640	60	647	53
	Average (%)	91.43	8.57	92.43	7.57

Based on expected practicality data, the pocket book is easy for students to understand and can guide students in practicing creative thinking because the instructions are very clear. The pocketbook arranged can be studied in a short time and can be used apart from study hours. In particular, students have never used a pocketbook before and it is also a way to practice creative thinking.

The pocketbook has advantages, at least make it easier for teachers and students to use it. According to Mulyadi (2015), the suitability of books with the level of readability and experience of students is important, because it affects the interest and motivation of students to read and study the material in the book.

Many good inputs were conveyed by both from teachers and from students. These things, of course, are considered to revise the pocketbook as follows. Some sentences need to be simplified. There were still many scientific terms that were not familiar among students. Examples of Lepidoptera species in general should be added. For the record, in this pocketbook 12 species of butterflies (*Candalides cyprotus, Eurema brigita, E. hacebe, Papilio aegeus, P. polytes, Acraea violae, Hypolimna misippus, H. antedon, Hypolamnus bolina bolina, H. b. nerina, Tirumala lymniace*, and *Tisiphone abiona*) as well as 1 species of moth (*Penicilifera apicalis*) were introduced.

Based on those inputs, the solutions that have been designed are simplification of language or effective sentence composition, preparation of glossaries, and further research. The last solution becomes an interesting theme for the next activity. According to Sugiyono (2013), revisions with attention to student input need to conduct to produce better products so that learning can take place optimally according to the objectives. Therefore, after the individual test, the pocketbook is ready for use at the next stage of research to train students' creative thinking skills.

The practicality test is not only a stage to test the practicality of using the pocketbook, but also to train students' creative thinking skills. The high practicality value of teaching materials can help students understand the concept of biology independently (Sajidan, 2016; Riefani et al., 2020). More than that, pocketbook can be used to enrich the contents so that it is more than just ordinary textbook. Thus, the advantages of the pocketbook is increased, not only in small size and light weight, but also in an attractive design and content that is rich in knowledge and facilitates students to practice creative thinking skills. Nieveen (2010) argues that product development is practical if the product is easy for students or teachers to run and is richer than student textbooks.

In this study, students argued that the pocketbook contained descriptions and pictures help them understand the concepts of biodiversity and Lepidoptera in a coherent and independent manner. The pocketbook also helps them improve creative thinking skills. Students feel more flexible and fluent to come up with original thoughts so that they are able to describe their ideas. The

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pocketbook is also unique because students have never used it before. In addition, the pocketbook can overcome the boredom resulting from the presentation of textbooks that are less interesting and irrelevant to their daily lives. Wijayanti (2019) states that pocketbooks providing local insight material make them easier for students to experience learning and increase their interest because the content presented stimulates students to further explore the material and practice creative thinking skills.

D. Conclusion

From the expectation practicality test and also the actual practicality test, the pocketbook on 'Keragaman Lepidoptera di Hutan Mangrof' (Lepidoptera Diversity in the Mangrove Forest) is stated to be very practical to use in learning. Good suggestions from teachers and students are considered for revision so that a best quality pocketbook is obtained.

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