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The Practicality of Popular Scientific Book of *Pteridophytes* Diversity in Tabanio Beach Forest, Tanah Laut District, South Borneo

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Abstract

Learning using popular scientific books based on the local potential of an area is one solution that can be used to overcome students' lack of reading interest in learning due to limited learning resources in the Pteridophyta concept. This study aims to describe the practicality of a popular scientific book Diversity of the Tabanio Coastal Forest Pteridophyta. The method used is development research with the Tessmer formative test. The results showed that popular scientific books that have been developed obtained student responses with an average of 94.3% with very good criteria and the results of implementing the use of popular scientific books with an average of 92.6% with very good criteria. This shows that a popular scientific book Diversity of Tabanio Coastal Forest Pteridophyta is very practical to be used as an enrichment material in learning Low Plant Botany.

Abstrak

Pembelajaran dengan menggunakan buku ilmiah populer (BIP) berdasarkan potensi lokal yang dimiliki sebuah daerah merupakan salah satu solusi yang dapat digunakan untuk mengatasi kurangnya minat membaca mahasiswa dalam pembelajaran karena keterbatasan sumber belajar pada konsep *Pteridophyta*. Penelitian ini bertujuan untuk mendeskripsikan kepraktisan buku ilmiah populer Keanekaragaman *Pteridophyta* Hutan Pantai Tabanio. Metode yang digunakan adalah penelitian pengembangan dengan uji formatif Tessmer. Hasil penelitian menunjukkan buku ilmiah populer yang telah dikembangkan memperoleh hasil respons mahasiswa dengan rata-rata sebesar 94,3% dengan kriteria sangat setuju dan hasil keterlaksanaan penggunaan buku ilmiah populer dengan rata-rata sebesar 92,6% dengan kriteria sangat baik. Hal tersebut menunjukkan bahwa buku ilmiah populer Keanekaragaman *Pteridophyta* Hutan Pantai Tabanio sangat praktis digunakan sebagai bahan pengayaan dalam pembelajaran Botani Tumbuhan Rendah.

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A. Introduction

Learning resources are information presented in various forms of media to make it easier for students to learn in accordance with the wishes of the curriculum (Depdiknas, 2008). The curriculum developed should adapt to the potential of each region, this can certainly empower students according to the potential and needs of themselves and their environment, so that there is a huge opportunity for regions and education managers to make adjustments, modifications, and contextualization of the curriculum according to their needs with the potential of the region and the reality on the ground (Fitriansyah *et al.*, 2018). Learning resources are very influential on learning achievement, the more and more complete learning resources and their presence is easily accessible, the easier it is for students to prepare themselves in the learning process which will ultimately improve student learning achievement (Riyani, 2015). Some examples of learning resources are books, modules, magazines, films, popular scientific books and so on.

Popular scientific books (BIP) are one type of book that contains knowledge and presents facts and is written in easy and interesting language (Setiawan, 2017; Fajeriadi *et al.*, 2019). BIP is a scientific book written in a way that is easy to understand by the general public at large, such as teachers, lecturers, students, scientific practitioners, and enthusiasts in the field of science (UNSOED, 2016). In line with this, Pammai (2014) explains that BIP itself can essentially be used by all groups, both by students from various levels and levels of education as well as the general public. So, BIP is a book that contains knowledge and presents facts and is written in language that is interesting and easy for the general public to understand. Several studies on the practicality of BIP have been carried out by Irwandi *et al.* (2019); Fajrin *et al.* (2021); and Putra *et al.* (2021). As for other studies on the practicality of learning resources such as those conducted by Ramadhan *et al.* (2020); Aminudin *et al.* (2020); and Fauzan *et al.* (2021).

BIP is expected to be able to overcome problems in the Low Plant Botany course, especially the limited learning resources on the concept of Pteridophytes diversity which contains material with examples from the surrounding or local environment which brings about understudies' absence of premium in perusing so that learning results are not ideal. This is supported by Rizqia (2020) who argues that other facts that can hinder the learning process are the use of teaching materials that have not been effective and the lack of giving examples in the learning process. So it is necessary to develop teaching material to support the learning process. The development of learning resources can make it simpler for understudies to comprehend the material introduced by the instructor.

Based on the description above, it encourages researchers to develop BIP for the diversity of Pteridophytes in the Tabanio Coastal Forest based on local and practical potential.

B. Materials and Method

This research method is a development research focused on Tessmer's (1994) Formative Evaluation which includes preliminary research, expert testing, individual testing, small group testing and field testing. A fundamental report was led to break down the fundamental materials that can be utilized in learning Low Plant Botany. The results of the preliminary research became the basis for the preparation of the BIP entitled "Pteridophyta Diversity of the Tabanio Coastal Forest". Before the practicality test was carried out, this book went through the master approval stage. The common sense of BIP was gotten from a progression of little gathering tests and field tests utilizing understudy reaction instruments and execution instruments utilizing well known logical books.

C. Results and Discussions

Data on the practicality of BIP is divided into two types of data, namely student responses and the implementation of using BIP in learning.

1. Student Response

The practicality of BIP for the diversity of Pteridophytes in the Tabanio Coastal Forest was obtained in light of the results of student responses to the practicality of expectations and actual as shown in Table 1.

Based on the results of student responses, it can be seen in Table 1 that an average value of 94.3% was obtained with a strong agreement, because students showed a sense of pleasure with learning using BIP. This happens because they have never studied using BIP, the material of which is often found in the environment where they live. In addition, the BIP has been equipped with illustrations of various kinds of images that match the material so that it can grow and increase student interest in learning a new material. In line with this, Astuti *et al.* (2021) stated that the positive response shown by Abdul Kadir High School students showed that students were happy with learning using BIP entitled "Types of Shrimp in Tabanio Coastal Waters". This is because they have never previously learned to use BIP, the material of which is often found in the environment where they live.

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In addition, BIP has been equipped with illustrations of various kinds of images that match the material so that it can grow and increase students' interest in learning new material.

Table 1 Student Response Result for Expected and Actual Practicality

No	Indicator	Practicality	
		Hope	Actual
1	The use of this BIP makes me have a high willingness to take lessons	5,0	5,0
2	The use of this BIP makes me have a high willingness to make good use of study time	4,7	4,7
3	The use of this BIP makes it easier for me to understand the lesson	5,0	4,8
4	This beep is very interesting and not boring	5,0	5,0
5	This beep allows me to get rid of my self-concept	4,3	4,5
6	In the event that the utilization of BIP is completed this way, I can recollect the ideas from the exercise material longer	4,3	4,6
7	The use of BIP can help solve problems in everyday life related to learning topics	5,0	5,0
8	The use of this BIP has broadened my horizons	5,0	5,0
9	In the event that BTR learning is done with a request model, it can improve learning accomplishment	4,3	4,3
10	In the event that BTR learning is done this way, it can expand the resolve of gathering work	4,7	4,8
11	BTR learning using BIP makes my ability to interpret problems better	4,3	4,6
12	BTR learning using BIP makes my ability to assume better	4,7	4,6
13	BTR learning with BIP makes my ability to formulate problem solutions (deduction) better	4,7	4,7
14	BTR learning using BIP makes my ability to argue better	4,7	4,7
15	BTR learning using BIP makes my ability to draw conclusions (inference) better	4,7	4,7
	Earning Score	**70,3**	**71,0**
	Percentage (%)	**93,8**	**94,7**
	Average (%)	**94,3**	
	Criteria	**Very agree**	

Note: BTR is the acronym of Botani Tumbuhan Rendah Course

Another reason that causes students to strongly agree with learning using BIP is because the display of attractive pictures and presentation of BIP content is easy for students to understand so that it can improve learning outcomes. This is in accordance with the research of Dharmono *et al.* (2019) shows that the presentation of material in teaching materials accompanied by pictures associated with knowledge and adapted to student experience can improve students' critical thinking skills in learning.

Based on the outcomes of student responses who strongly agree with learning using BIP, it is expected to increase student interest in the learning process which in turn will improve student learning outcomes.

2. Implementation of the use of BIP

The implementation of the use of BIP is one of the data to measure the practicality of BIP entitled "Diversity of Pteridophytes of the Tabanio Coastal Forest". The data on the results of this implementation were obtained from 3 observers who observed the learning activities as a whole and poured their observations on the observation sheet provided. The results of observations on the implementation of the use of BIP can be seen in Table 2 below.

Table 2 Result of Observation of the Implementation by Use of BIP

No	Aspects of assessment	Score		
		P1	P2	P3
1	Understudies read the front (table of contents, instructions and explanation of contents)	1	1	1
2	Students read the introductory information	1	1	1
3	Students read descriptions of general information	1	1	1
4	Students look at pictures and descriptions in BIP	1	1	0
5	Students look at the writing on the colored boxes	0	1	1
6	Students read facts about the division of *Pteridophyta*	1	1	1
7	Students reading the glossary	1	1	1
8	Understudies use BIP when mentioning objective facts	1	1	1
9	Understudies use BIP while examining information	1	1	1
	Earning score	**8**	**9**	**8**
	Percentage (%)	**88,9**	**100**	**88,9**
	Average	**92,6**		
	Criteria	**Very good**		

Based on the data contained in Table 2, observations on the implementation of the use of BIP obtained an average of 92.6% which is included in the very good criteria. These results illustrate that the BIP that has been developed can be said to be practically used in learning.

The outcomes of excellent implementation prove that learning has gone well according to the

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plan contained in the RPS. The plan has been designed to increase students' motivation to learn. This motivation is what makes students eager to follow the learning step by step until it is finished. The above results are in line with Akbar (2013) good learning is carried out interactively, inspiring, fun, challenging, and motivating students to participate actively.

Another reason that causes the high implementation results is also due to the existence of instructions for using BIP which allows students to know the steps for using BIP in a coherent manner from beginning to end, which is thought to be able to convey information systematically in the learning process according to the plan. This can be seen from the results of the implementation of the use of BIP which received very good criteria from the three observers. The statement above is in line with Hartati and Sholihin (2015) that the use of BIP not only supports the learning process but also contributes to improving critical thinking skills. Critical thinking ability is the ability to think in accordance with the power of the mind and think reflectively to focus on the results of observations in a lesson. In addition, the BIP that has been developed is expected to be used as a reference in choosing good teaching materials so that they can be used in practical learning to achieve a predetermined learning goal.

Based on the results of student responses and the implementation of the use of BIP, it shows that the BIP entitled "Diversity of Pteridophytes of the Tabanio Coastal Forest" is very practical to be used as enrichment material in learning Low Plant Botany because it has advantages such as containing material on the types of Pteridophytes found around students, particularly the individuals who live in settlement close to Tabanio Beach Forest. In addition, the developed BIP contains the characteristics and benefits accompanied by pictures that match the original plant, making it simpler to distinguish the Pteridophyta species being considered. The introduction of the created BIP is organized so that it is straightforward and learnable. As per Lucardie (2014) intelligent and fun learning is viewed as an instrument that supports understudies' focus and helps in the assimilation of learning materials.

D. Conclusion

The popular scientific book entitled "*Pteridophyta* Diversity of the Tabanio Coastal Forest" which has been developed is very practical based on the results of student responses, namely an average of 94.3% with the criteria of strongly agreeing and the implementation of the use of popular scientific book, which is an mean of 92.6% with very good criteria.

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