



Development of an Encyclopedia of Woven Plants of the Malay Tribe of Natuna District

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Abstract: The Malay tribe community in Natuna Regency still preserves one of the cultures, namely weaving several products that are used as tools to support their daily needs. This study aims to determine the validity of the encyclopedia of woven plants of the Malay tribe in South Bunguran District, Natuna Regency and to determine student responses to the encyclopedia of woven plants of the Malay tribe in South Bunguran District, Natuna Regency. The method used is design and development (D&D). Based on the results of the research that has been done, it is found that the media encyclopedia of woven plants of the Malay tribe of Natuna Regency has fulfilled the validity aspects where the media aspect is 95.29% (very valid), the material aspect is 96.67% (very valid), and the linguistic aspect is 97.27% (very valid). Learners gave a very good response where on a small scale trial and a large scale got a small scale score of 91.04% (Very good) and a large scale of 93.50% (Very good). It can be concluded that the encyclopedia of woven plants of the Malay tribe in Natuna Regency can be utilized as a biology learning media that is included in biodiversity material.

Keywords: Development; Encyclopedia; Malay tribe; Natuna; Woven plants

Introduction

Indonesia has the third largest tropical forest in the world (Syahputra & Jamilah, 2018; Zakariya, 2020). Forests are one of the natural resources that are rich in biodiversity and have various potentials to meet human needs (Saroh et al., 2020; Brata et al., 2022). One of them is plants that are used as plaits to support human needs (Brata et al., 2022). Plaiting is a type of traditional craft that remains in demand until now. Apart from its many benefits, it is also because of its ease of use (Riski et al., 2020). Wicker crafts It is also an art obtained from the life and culture of the community that has existed since the time of the ancestors (Sasmita et al., 2021; Dian, 2022). The Malay ethnic community in Natuna Regency, South Bunguran District still continues to preserve a woven craft tradition. However, the rapid process of globalization can threaten a tradition (Alfadhil et al.,

2021). It is necessary to combine traditional knowledge with education to make it sustainable. Education itself is a learning process obtained by students to be able to make students understand, understand, and be able to make students more critical in thinking (Rahman et al., 2022).

Education is also a form of effort to improve the quality of a person in the community (Fadhilah et al., 2022; Efendy, 2023). The National Education System Law No. 20 of 2003, states that education is a conscious and planned effort to create an atmosphere of learning and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed for themselves, society, nation and state (Matlani & Khunaifi, 2020). Education is also a central place that is the beginning of the development of science and culture (Ananda et al., 2024). The learning process is

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an integration of teaching and learning processes (Harahap et al., 2020).

Based on the results of interviews with students at SMAN 1 Bunguran Selatan, it was found that learning Biology is still less interesting so that it makes students bored. The use of Biology learning media is currently in the form of books that tend to contain long descriptions, few pictures and colors displayed so that students are less interesting to read. Students tend to like interesting reading with little description and lots of pictures or colors (Ami et al., 2012). Images can increase interest in reading because images can help readers imagine (Hanifah et al., 2020; Sulistyono et al., 2023). There are still many students who also do not know the biodiversity found in the surrounding environment. From some of these media weaknesses, it can be concluded that schools need additional new learning resources.

One of the learning resources that can be used is an encyclopedia. Encyclopedia is able to provide visualization that can attract students' interest in the learning process (Mulyani & Armiati, 2021). The utilization of learning resources such as encyclopedias will affect student motivation and learning outcomes (Febrianti & Sunandar, 2024). Therefore, encyclopedia media is needed as a learning resource for students. Local wisdom is the capital for the formation of an ancestral character. It is the wisdom that makes a nation have cultural roots (Septia, 2024). Currently, woven handicrafts are still produced by the Malay community of Natuna Regency, especially in South Bunguran District, which has a variety of characteristics, shapes and ornaments using materials available in nature.

The development of an encyclopedia of woven plants of the Natuna Regency Malay tribe is expected to be a means to preserve the woven plants of the Natuna Regency Malay tribe. In addition, the encyclopedia of woven plants of the Natuna Regency Malay tribe can also be a useful source of information for researchers, students, students and the general public who are interested in studying woven plants. Therefore, researchers are interested in developing an Encyclopedia of Natuna Regency Malay Woven Plants.

This study aims to determine the validity of the encyclopedia of woven plants of the Malay tribe in South Bunguran District, Natuna Regency and to determine student responses to the encyclopedia. Encyclopedia woven plants of the Malay tribe in South Bunguran District, Natuna Regency.

Method

This research began in the even semester of the 2023/2024 academic year. This research was conducted at SMAN 1 Bunguran Selatan, Natuna Regency. The research was conducted in South Bunguran District,

Natuna Regency. This research was conducted in Cemaga Village, South Cemaga Village, Middle Cemaga Village, and North Cemaga Village, South Bunguran District, Natuna Regency.

This research is a type of development research. What was developed in this study was an encyclopedia of Natuna Regency woven plants. The research method used by researchers is design and development (D&D) (Sari et al., 2020).

There are six stages in the D&D model, where each stage is a refinement of the previous ones that have explored the stages of the D&D model first. The stages of the D&D model are as follows: "1) Identification of problems, 2) Describe the objective, 3) Design and develop the artifact, 4) Subject the artifact to testing, 5) Evaluate the results of testing and 6) Communicate those results." (Yusuf et al., 2022).

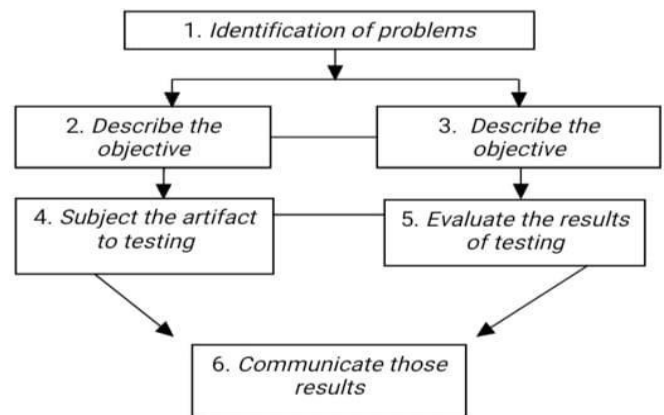


Figure 1. Stages of the D&D model

The problem identification stage includes interviews and observations. The description stage includes an explanation of the purpose of product development. The design and development stage includes the selection of initial designs, initial drafts, background colors, formats, and validation with three language validation experts, three media validations, and three material validations. The product trial stage includes a small-scale trial with 8 students and a large-scale trial with 20 students of grade 10 SMAN 1 Bunguran Selatan. The evaluation stage of product trial results includes summative evaluation and formative evaluation. The communication stage includes writing a research report that has been carried out. Measuring the level of validation of encyclopedia media as learning media using the formula from (Aini et al., 2024).

$$P = \frac{\sum_{i=1}^4 x_i}{\sum_{j=1}^4 x_j} \times 100\% \tag{1}$$

Description: P = Presentation of choice; $\sum xi$ = Total score of the expert's answer, $\sum xj$ = Number of highest answer scores

Meanwhile, as a basis for making decisions to revise the media, assessment characteristics are used:

Table 1. Characteristics of Learning Media Validity

Percentage %	Criterion Validity	Description
80-100	Very valid	No revision
66-79	Valid	No revision
56-65	Fairly Valid	No revision
40-55	Less Valid	Revised
30-39	Invalid	Revised

Analysis of responses to encyclopedia development. The percentage of student responses was calculated using the following formula (Wicaksono et al., 2014).

$$\% NRS = \frac{\sum_{i=1}^n NRS}{NRS \text{ Maksimum}} \times 100 \quad (2)$$

Description: %NRS = Percentage of Student Response Score (NRS); $\sum_{i=1}^n NRS$ = Total Student Response Score (NRS) on each question item; Maximum NRS = $\pi \times$ best option score.

Table 2. Category of Student Response Percentage

% NRS	Category
$0\% \leq \% NRS < 36\%$	Very Less
$36\% \leq NRS < 52\%$	Less
$52\% \leq NRS < 68\%$	Simply
$50\% \leq NRS \leq 75\%$	Good
$75\% \leq NRS \leq 100\%$	Very good

Result and Discussion

Result

The results of observations found 9 types of woven plants used by the Malay tribe of Natuna Regency, Bunguran District. The list of woven plant species can be seen in table 3.

Table 3. Natuna Regency Malay Tribe's Woven Plants

Local Name	Scientific Name	Family
Bemban	<i>Donax caniffiformis</i>	Marataceae
BambooBetung	<i>Dendrocalamusasper</i>	Graminea
Bambu Buluh	<i>Schizostachyum bracheeladum</i>	Graminea
Eceng Gondok	<i>Gichhornia crassiper</i>	Pontederiaceae
Pandan Duri	<i>Pandanus tectorius</i>	Pandanaceae
Kelapa	<i>Cocos Nucifera</i>	Arecaceae
Pisang Kepok	<i>Musa acumminata balbisiana</i>	Musaceae
Rotan Tikus	<i>Flagellaria indica</i>	Flagellariaceae
Rumbia	<i>Metroxylon Sagu</i>	Arecaceae

Based on the table above, the Areceae and Graminea families are the most widely used as wicker plants in Natuna Regency, Bunguran District, especially bamboo, which has many uses as wicker (Fibriyanti et al., 2020).

Table 4. Validation Assessment Results

Expert Validator	Percentage	Criteria
Media Expert	95.29%	Very Valid
Language Expert	96.67%	Very Valid
Material Expert	97.27%	Very Valid

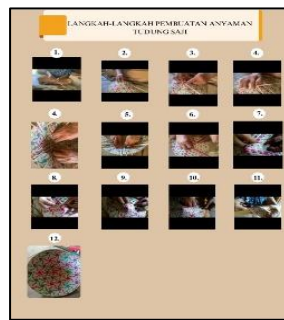
The validity test involved three experts, namely media experts, language experts, and material experts. The validation results that have been obtained show very valid results. Thus the encyclopedia developed is worth testing with a little improvement. The encyclopedia draft developed was made with the canva application. The size of the encyclopedia is 21 x 29.7 cm using A4. The following encyclopedia draft display can be seen in table 5.

Table 5. Encyclopedia Draft

Encyclopedia Section	Image
Front cover	
Directions for use	
Contents	

Encyclopedia Section

Image



Bibliography

Glossary

variety of interesting designs, saves time, and does not have to have a laptop or pc, just use a device (Monoarfa, 2021; Dahliani, 2023). The encyclopedia trial was carried out with small-scale and large-scale experiments where the encyclopedia trial aimed to measure student responses to the developed product.

Table 6. Student Response Questionnaire Results

Description	Percentage	Criteria
Small Scale	91.04%	Very Good
Large Scale	93.50%	Very Good

In the assessment of the results of the trial, the total number of questions was 12, divided into positive and negative, each of which amounted to 6 questions. The aspects assessed start from the suitability of the material, the appearance of the encyclopedia, and language. On a small scale, the sample is taken as much as 20% of the population, while on a large scale, the sample includes 60% of the entire population (Prayitno, 2017).

Discussion

Based on the results of interviews with Biology Teachers and Class X students at SMAN 1 Bunguran Selatan on December 14, 2023, information was obtained that learning on biodiversity submaterial conducted at school so far is the lecture and discussion method. Teachers deliver the material using media such as powerpoint, textbooks, worksheets and direct examples of the surrounding environment by providing examples of biodiversity in general. Teachers at SMAN 1 Bunguran Selatan have not utilized local potential as a learning resource. Learning resources are everything that can be used for students and teachers to understand the material and learning experience (Dewi & Firanti, 2024). Meanwhile, based on the results of observations of the LKS book used, there are still many shortcomings including LKS content that is not based on local potential. The examples contained in the LKS book are only using animals or plants from other regions or countries.

This D&D research produces Encyclopedia media used for grade 10 students in science subjects. The problem found in schools is the lack of local wisdom-based learning media used by students in the learning process. This is what makes the encyclopedia of woven plants of the Malay tribe in Natuna Regency, Bunguran Selatan District the goal of facilitating students' understanding of biodiversity. The use of encyclopedias can improve students' ability to think critically and make students motivated to learn.

Encyclopedia development as a tool to help provide understanding to students (Mardin et al., 2024). Encyclopedia is a collection of writings containing a variety of complete information arranged alphabetically

The encyclopedia creation process uses the Canva application. Canva was chosen because it is easy, has a

and printed in book form (Renita, 2020; Fadhilah et al., 2022; Solin et al., 2023). Encyclopedia makes it easy for students or teachers to get information about materials or facts from various topics needed in preparation for teaching (Soleka, 2022). Aspects that can be prioritized in making encyclopedias are image design and color selection so that students are not bored. In general, encyclopedias are learning media that have several advantages including containing detailed and detailed information, there are many pictures that help students explore the imagination of the books they see and feel real. And the information contained in the encyclopedia is according to fact. So, the encyclopedia can be used as a reference material or reference about material related to what is needed by the reader. In addition, in the encyclopedia there is an index in the book and there are also instructions for use (Putri, 2022). Encyclopedia discusses a science that is more detailed than the two branches of science (Anjani, 2022).

The utilization of encyclopedias in a lesson can be responded well by students (Winda et al., 2020). Encyclopedia development is supported by the learning theory of constructivism and cognitivism with benefits as a means of skills (Rahma et al., 2024). As research conducted by Sabilla et al. (2023) proves that encyclopedias provide visualization of content that is closely related to images so that it can attract readers and increase motivation to learn.

The developed encyclopedia has been revised several times, both in terms of content and appearance, based on feedback from validators. The validity test process has also been carried out to ensure that this encyclopedia is suitable for use. According to (Ramadhani et al., 2023) that product validation can be carried out by several experts or experts who have experience to evaluate the advantages and disadvantages of the products produced.

Material expert validation showed very valid results (97.27%). Material validation is carried out to determine the feasibility of the encyclopedia (Julianti et al., 2021). The diversity material presented from woven plants is very feasible to be included in the encyclopedia. Based on the validation of language experts, the results are very valid (96.67%). This is because the encyclopedia made uses simple language, proper writing according to the rules, formal sentences, easy to understand, making it easier for students to read and understand the material (Chandra et al., 2020).

The results of media validation show very valid results (95.29%) because the appearance of the encyclopedia that is designed is suitable and attractive in accordance with the opinion (Renita, 2020). The selection of colors, logos, and images must be presented in a balanced and harmonious manner. The cover design must feature sufficient contrast, aesthetic color

combinations, and use illustrations that are suitable for describing the contents of the encyclopedia.

If a media appears attractive, organized, and neat without clutter, it will arouse the curiosity of users and act as an effective learning media design or resource because it has paid attention to layout and readability well (Fatmalia et al., 2024).

Conclusion

Based on the results of the research that has been done, it is found that the media encyclopedia of woven plants of the Malay tribe of Natuna Regency has fulfilled the validity aspects where the role of the media is 95.29% (very valid), the material aspect is 96.67% (very valid), and the linguistic aspect is 97.27% (very valid). Students gave a very good response where in the small scale trial and large scale got a small scale score of 91.04% (Very good) and a large scale of 93.50 (Very good). It can be concluded that the encyclopedia of woven plants of Malay tribes in Natuna Regency can be utilized as a biology learning media that goes into biodiversity material.

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No conflict interest.

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