

Development Of Rural Tourism-Based Biology Learning Devices In Pentingsari Village Cangkringan Yogyakarta

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Abstract

This research is aimed to develop biological teaching aids based on rural tourism using 4-D model. This research development of biological teaching aids based on rural tourism using 4-D model (define, design, develop, and disseminate) which stated by Thiagarajan. This teaching aids used by students on biological lesson based on rural tourism, especially at tourism village of Pentingsari Cangkringan. This teaching aids consist of: booklet of Pentingsari tourism village potention which contains Ecosystem at Pentingsari tourism village, guidance for teacher which contains sylabus and lesson plan of rural tourism activity, and activity sheet of rural tourism for the students which contains lesson objectives and procedure of each activity. The result of this research show that this research produce biological teaching aids based on rural tourism using 4-D model.

Keywords:

Learning devices, Rural Tourism

1. INTRODUCTION

Indonesia has unique natural resources that have the potential to support education and tourism programs. Education, according to the Law No. 20 of 2003, is conscious and planned efforts to create a learning atmosphere and learning process in such ways that the students can actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble characters, and abilities needed by themselves, society, state and nation. Tourism, according to Law No. 10 of 2009, serves to meet the physical, spiritual, and intellectual needs of every tourist through recreation and travelling activities as well as increasing regional income, especially to realize the welfare of local people as the part of the tourism attractions. The importance of education and tourism has made both of them need to be integrated in utilizing existing natural resources, including through rural tourism.

Rural tourism is a tourism activity carried out in rural environments (Darau et al., 2010, p. 41). Besides, the rural tourism is seen as a form of tourism travel in the rural areas that have typical uniqueness from the aspects of culture and natural resources so that they can be utilized directly by the

tourists during the rural tourism activities (Irshad, 2010, p. 5). Based on this explanation, it can be concluded that rural tourism is tourism and learning activity at once that can encourage the tourists to carry out active learning processes.

The learning process requires interaction between the learners and learning resources within the learning environment, so that the learning process carried out will be interactive, inspiring, fun, challenging, and motivates the students to actively participate in it. The environment, with all of its problematic aspects is one example of the source of biology learning. Environment is closely related to the biology, because in the biology learning, it is required an environmental approach, where the approach is learning approach that seeks to improve the students' order through the use of the environment as the learning source (Syamsudduha, 2012, p. 23). The environment that is used as the learning resource has the potential to create meaningful learning.

The biology learning which is done through direct observation on the field will facilitate the students to uncover many objects and natural events in getting the expected scientific concepts. Based on some preliminary studies that have been carried out

at schools, the learning process done while traveling to the natural environment is much better to provide deeper understanding of the environment, and as a form of learning innovation. The limited time of the learning in the classroom makes it less optimal, where the learning is only limited to providing information either directly or using media, without any significant students' active participation. In addition, the learning done outside the classroom, especially while traveling, certainly requires a special design that needs to be prepared well by the teacher, because the teacher commonly does not have enough time to prepare it.

Starting from the research background, the researcher is interested in conducting a research on the development of rural tourism-based biology learning devices.

The objectives of this research and development are: (1) to develop rural tourism-based biology learning devices based on the 4-D model, and (2) to know the feasibility and suitability of rural tourism-based biology learning devices with the rural tourism principles in the learning process.

2. RESEARCH METHODS

The development of rural tourism-based biology learning devices was a form of research and development (R & D). The R & D model used for the basis of product development was an adaptation of the research on the development of the 4-D model (four-D model) proposed by Thiagarajan (1974, p. 5).

a. Type of Research

This research used 4-D model ini which consisted of *Define*, *Design*, *Develop*, and *Disseminate* stages.

b. Time and Place of the Research

This research was conducted on August-October 2014, in tourism village of Pentingsari.

c. Research Targets/Subjects

The Potential of Tourism Village of Pentingsari

d. Data Analysis Techniques

The development of *rural tourism*-based biology learning devices consisted of the stages of *define*, *design*, *develop*, and *disseminate*.

The *define* stage included the analysis of potential, curriculum, and needs. The analysis of the potential of rural tourism at Pentingsari Tourism village covered the potential of nature, education and tourism. The curriculum analysis included materials selection and basic competence which was further elaborated in the learning objectives, the analysis of Pentingsari tourism village gardens as the device for the rural tourism-based biology learning, and also the interviews with Pentingsari tourism village managers and high school teachers.

The *design* stage was the stage of the products design. The products designed included material booklet, guideline for the teachers, and rural tourism

working sheets. The designstage of each product consisted of material gathering, preparation of presentation scenario, and the product design.

The *develop* stage included the development of rural tourism-based biology learning devices, validation, and product testing.

The *disseminate* stage was done at the schools and tourism places.

3. RESULTS AND DISCUSSION

The next step after the *define* stage is the design.

a. Guide for the Teachers

This guide contains the basics of biology learning through rural tourism activities and contains biology learning devices that are used when the rural tourism activities take place. This teacher's guide makes it easier for them who will carry out rural tourism activities in Pentingsari Tourism Village.

b. Rural tourism worksheet for the students

The rural tourism worksheet is a handbook for the students who will carry out rural tourism activities in Pentingsari Tourism Village. This rural tourism worksheet contains learning objectives and procedures for the activities to be carried out in each activity. Besides, it also provides an observation sheet and discussion questions for the students related to the rural tourism activities in Pentingsari Tourism Village

c. Booklet of Pentingsari Tourism Village Potential

This booklet contains the materials developed from the potential that exists in Pentingsari Tourism Village and has been adapted to the materials studied at high schools. This has also been adapted to the current 2013 curriculum, so that this booklet can be used for learning biology through rural tourism activities in Pentingsari Tourism Village. This booklet can be used as a reference in terms of evaluation when the activities take place for both guides and teachers. For the students, this booklet can be used as the clarification of rural tourism activities.

d. Develop

This development stage includes the preparation of rural tourism devices, product validation, revision I, limited trials, revision II, and field trials (extensive trials).

Preparation of Rural Tourism Devices Draft

The preparation of the rural tourism devices draft is in accordance with the design that has been made. This rural tourism devices draft consists of the Pentingsari Tourism Village potential booklet, rural tourism worksheet for the students, and the rural tourism guide for the teachers.

Product Validation

This product validation is carried out by the expert lecturers, practitioners, and three peer reviewers. The comparison of the assessment of

Pentingsari Tourism Village booklet product by the expert lecturers, practitioners, and peer reviewers can be seen in the following histogram.

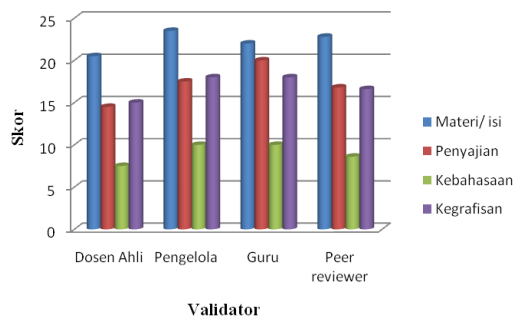


Figure 1.

Comparison of the assessment of Pentingsari Tourism Village booklet

Based on the comparison of the assessment of the potential booklets of Pentingsari Tourism Village from the aspects of material/content, presentation, language, and graphics, the highest score is obtained from practitioners, because according to them, the product developed is very beneficial for them (both high school teachers and Pentingsari Tourism Village managers).

The comparison of product assessment of the guideline for the teachers by expert lecturers, practitioners, and peer reviewers can be seen in the following histogram.

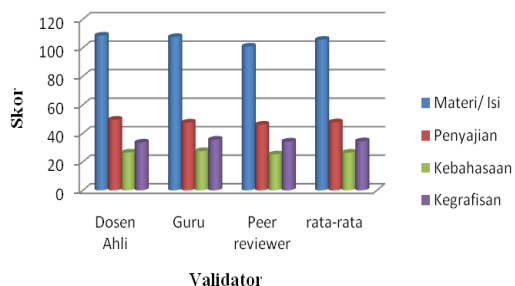


Figure 2.

Comparison of Assessment of Guideline for the Teachers

Based on the comparison of the guideline for the teachers, the highest score is obtained from expert lecturers, while from the aspects of the language and graphics, the highest average score is obtained from the practitioners.

The comparison of product assessment of rural tourism worksheet by expert lecturers, practitioners, and peer reviewers can be seen in the following histogram

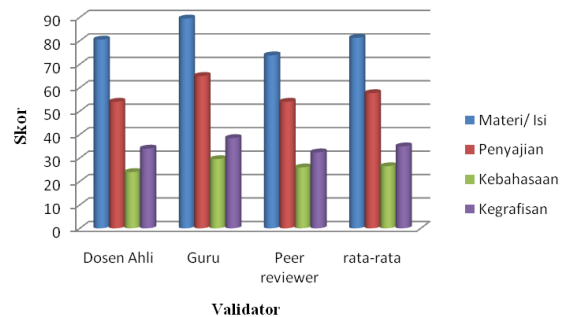


Figure 3.

Comparison of the assessment of Rural Tourism Worksheet

Based on the comparison of the assessment of rural tourism worksheet viewed from the average score of the validators from the aspects of material / content, presentation, linguistic and graphic, the highest average score is obtained from the practitioners

Some suggestions and inputs on the validation process by each validator are used as a basis for improving the product of rural tourism devices. Furthermore, after the improvements have been made, the validators state that the product developed is ready to be tested on a limited basis

e. Limited Testing

The limited testing is conducted on the students of SMA Muhammadiyah 12 Pakem. This school is chosen because it is one of the high schools that is close to the Pentingsari Tourism Village. This limited testing aims to determine the implementation of the learning process using rural tourism devices in Pentingsari Tourism Village.

The comparison of the implementation of the learning process through Rural Tourism activities can be seen in the histogram below.

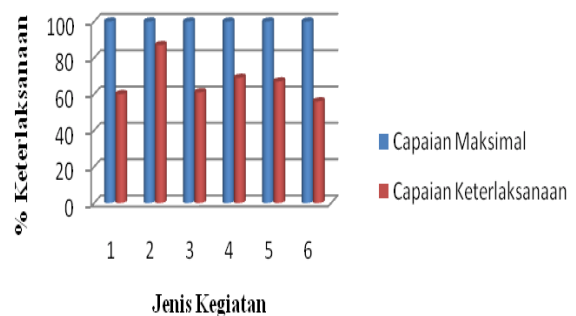


Figure 4

Comparison of the implementation of learning process through *Rural Tourism* activities

Note:

- 1 = Visiting Snakefruit plantation
- 2 = Visiting Coffee plantation
- 3 = Visiting Chocolate plantation
- 4 = Visiting Goat farming
- 5 = Visiting Farming areas
- 6 = Visiting Catfish pond

Based on the comparison above, it can be seen that all activities are not yet implemented 100%, because this limited testing experiences several obstacles. One of the examples is the rural tourism activities in Pentingsari Tourism Village are conducted at the time when the students already gone home from school, so some of them complain experiencing fatigue due to school activities all day. The guide, in this case, has not yet been able to bring up the desired variables by the researcher.

Based on the above comparison, it can be seen that all activities above are successfully implemented more than 50%, thus it can be concluded that biology learning through rural tourism activities in Pentingsari Tourism Village which is carried out based on developed products is appropriate and in accordance with rural tourism principles, and are appropriate for the learning process

f. **Broad Testing**

The broad testing is carried out on 25 students of SMA N 1 Cangkringan. The main data from rural tourism activities during the broad testing is the implementation of the learning process using rural tourism devices in Pentingsari Tourism Village. The following are the data on the implementation of the learning process using rural tourism devices from the observation process.

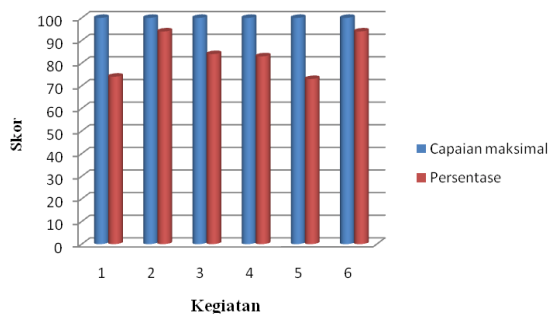


Figure 5

Comparison of Feasibility and Suitability of *Rural Tourism* Activities for the Learning Process

Note:

- 1 = Visiting Snakefruit plantation
- 2 = Visiting Coffee plantation
- 3 = Visiting Chocolate plantation
- 4 = Visiting Goat farming
- 5 = Visiting Farming areas
- 6 = Visiting Catfish pond

Based on the comparison above, it can be seen that all activities have been implemented more than 50%, and it can be concluded that the biology learning through Pentingsari Tourism Village Rural activities carried out based on the developed product is appropriate and in accordance with Rural Tourism principles and is appropriate for the learning process

Product Revision

This first revision is carried out after the validation stage by expert lecturers, practitioners and peer reviewers. Suggestions and input from the

validators are used as a reference or foundation for the improvement of the product of rural tourism devices. The next step after the first revision, based on suggestions and input from the validator, the rural tourism device product is ready to be tested on a limited basis.

The second revision is carried out after the limited testing of the first revised rural tourism product. The evaluation of the implementation of rural tourism activities in Pentingsari Tourism Village becomes the basis for this second phase of revision. The next step after this second revision is done, the rural tourism device product is ready to be widely tested

The third revision is done after the second revised product is tested extensively. All notes, suggestions and inputs when the rural tourism activities take place become as the basis for the latest revision before the dissemination stage. The product of the third revision is the final product of the rural tourism device that is ready to be disseminated. This dissemination stage is carried out to the high schools and submitted to the management of Pentingsari Tourism Village as a form of development of Pentingsari Tourism Village facilities for the students who want to have the biology learning through rural tourism activities.

4. CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the development of Rural Tourism-based Learning Deevices in Pentingsari Tourism Village which consists of: 1) Petingsari Tourism Potential Village booklet, 2) Rural Tourism Guide for the teachers, and 3) Rural Tourism Worksheet, it can be concluded that this research generate rural tourism-based biology learning devices based on 4-D model.

Some suggestions for the use of Rural Tourism devices are presented as follows ini:

The Pentingsari Tourism Village Potential Booklet can be used to classify things that have been learned in Pentingsari Tourism Village. This product can also be disseminated to general tourists who visit Pentingsari Tourism Village as a facility for them who need additional information or knowledge about ecosystems and the utilization of natural resources of Pentingsari Tourism Village. The Pentingsari Tourism Village Potential Booklet can also be used as a reference to guide the students who are going to to carry out biology learning in Pentingsari Tourism Village.

The Rural Tourism Guide for Teachers; This product can make it easier for the teachers if they are agoing to conduct the biology learning in Pentingsari Tourism Village because the devices needed by the teachers are listed in this rural tourism guide.

The Rural Tourism Worksheet; This product can facilitate the high school students who want to

have the biology learning in Pentingsari Tourism Village through the rural tourism activities

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