



The Module Validity of The Sub-Material Utilization of Medicinal Plant Biodiversity

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Abstract:

The aim of the study was to determine the feasibility of the module as a sub-material for the use of biodiversity for class X SMA. Using Research and Development (R&D) research methods with a qualitative descriptive approach. This study validated the instrument and validated the module teaching materials. The selection of validators with purposive sampling technique which consists of 5 validators. Module validation to obtain quantitative data accurately through a Likert scale. The assessment aspect of the module contains the feasibility of content, language, presentation, and graphics. The validation results obtained through the validator were analyzed using the CVR formula and continued to CVI, the results of the analysis of 4 aspects of the assessment namely the feasibility of content, language, presentation, and graphics consisting of 15 indicators of module feasibility assessment obtained a CVI value of 0.99 which is said to be a valid module and proper to use.

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Introduction

Education is an important part in life. Education is a way in preserving a culture from one generation to the next generation. Indonesian educational purpose is to educate the nation's children. Indonesia will face a difficulty if the education has not been implemented properly (Mulyasa, 2008).

Biology is a knowledge that prioritize a discussion of the organism and its life activity. According to Nurlatifah (2015), biology is a part of the knowledge that include life, interaction between the organism and the environment, and natural phenomenon. Biology learning is closely related to memorization so it demands the students to understand. Based on the short explanation above, the conclusion is biology learning is the study that always involve the knowledge with the environment of the organism.

The learning process really needs a support from a learning device and a teaching material. The learning devices are from students' books, students' worksheet, lesson plan (RPP), and etc. While the teaching materials are from props, module, media and etc. There are a lot of components that should be planned in the learning process, so the teacher should understand all the components, and one of the effective teaching materials is module.

Learning biology often makes the students struggle because there are a lot of materials, then the additional device is needed as the teacher's guide in teaching implementing. The teaching learning process is not only implemented in the class, but also can be implemented with the environment that appropriate with the teaching material. To get the result from the planned objective of the

learning, it surely needs a support in the learning process, one of them is teaching material. The set of materials that is delivered to the students in the process of learning in the class is the teaching material that is known as module (Amri and Ahmadi, 2010).

The learning device is the learning source for the teacher and students in learning, one of them is module. Sudjana and Rivai (2003), module is a plan of teaching materials that help the students and the teacher in learning.

Module is a set of materials that is arranged in a such way using a language that the students easily understood. As quoted from Depdiknas (2008), module is a set of teaching tools such as a book that is arranged to make the students could understand the learning individually or without teacher's guide.

Module is a teaching material that is fully summarized and include a set of teaching materials that is arranged to increase the students' ability to understand the learning (Daryanto, 2013). The using of module in sub-material utilization of medicinal plant biodiversity here is to make the students know the delivered material with directly be in the environment.

Module is the right choice to increase the students' learning quality, because the module development becomes a hope in conditioning the learning activity that is more well planned. By the using of the module, it can help the students learning individually without the teacher's help (Daryanto, 2013). In this case, the researcher develops the module systematically, with a simple language, interesting display, complete materials and supporting images. So that the made

module will make it easier for the students to learn.

Based on the interview result with the source person which is Biology teacher in the 10th grade SMA 2 Sekayam, using textbook as a supporting learning. The textbook that is used is the students' handbook by Endah Sulistyowati, Wigati Hadi Omegawati and Muhammad Luthfi Hidayat. The obstacle is there is no images of the sub-material utilization biodiversity in the textbook which can give the students real images so it is less interesting and less explore of the students' curiosity in learning the sub-material. The utilization of the module teaching learning in the sub-material utilization biodiversity assessed as appropriate because the module will contain interesting images, plants benefits, local name, latin name, also the place where the plant is found.

Based on the observation in the sub-material utilization biodiversity learning in Indonesia applies the discussion and practice method. The practice learning at SMA Negeri 2 Sekayam is where the students directly invited to searching a plant that is useful in the school environment. However, it is difficult to find the plant that will be used in the school environment. As the school is in the residential area, it causes several plants are not found a lot and not vary, so that will not reach the planned learning objective in the teaching material. While the sub-material utilization biodiversity in Indonesia has a fairly detailed coverage (Irnaningtyas, 2013).

The teaching material is an important thing in the case of students' understanding to the learning material. Module is used as the teaching material that help the students deepen the learning material by the more detailed

material explanation and can practice the students' imagination to the material, that is in line with the module function which is increasing the students' interest in learning.

Research Method

The research method is Research and Development with the descriptive qualitative approach in evaluate the module's validity and effectiveness. This research is implemented on the third stage, which is the module validation. Sugiyono (2017) stated an opinion that the qualitative research is the research that is done to see object state, the researcher plays a role in the key instrument. The sample is taken by the purposive sampling technique.

The purposive sampling technique is used as a sample determinant by a consideration, while the data collection technique is triangulation (a combination based on interview, observation and documentation) (Sugiyono, 2017). The descriptive method is the implemented method in the research as an effort in research a problem systematically and appropriately based on the reality and the object's characteristic. This method is used in describing a fact based on the thinking framework (Mahmud, 2011). According to Daryanto (2013) module includes the utilization of biodiversity in the field of food, clothing, boards, culture aspect, cosmetic and medicines. The module analysis is done with four ways which are determine the scope of the activity, identify and analyze the basic competence, arrange the teaching materials, drafting the module.

Validation is the approval process of the appropriate teaching material with the needs. This research is implemented 2 validation which are, tools validation

and module teaching material validation. When choosing the validator using purposive sampling technique that consists of five validators. The module validation is done by the measurement that get the quantitative data accurately by a scale. The scale that is used is likert scale, that is the scale in measuring the validator's attitude and opinion (Sugiyono, 2012).

The module assessment aspect refers to Depdiknas (2008) that contains the eligibility of content, language, presentation, and graphic. The validation result that is obtained by the validator is analyzed using CVR formula. CVR is the side validation approach in seeing the appropriateness between item with the domain that is assessed based on the validator (Lawshe, 1975). Here is the used formula:

$$CVR = \frac{ne - \frac{N}{2}}{\frac{N}{2}}$$

Description:

CVR : Content Validity Ratio

Ne : the total of the validator who agrees of the teaching material validation

N : the total of the validator or expert team member

After CVR then CVI or the overall average score of the CVR and the CVI average score. With the formula as follows:

$$CVI = \frac{CVR}{sub-criteria\ total}$$

The CVI score result is between 0-1, the instrument will be stated as valid, if 3 from 5 validators state the instrument is valid, then the used teaching material can be stated valid. However, if 3 from 5 validators say not valid, then the teaching material is stated as not valid to used.

Finding and Discussion

Module is a set of independent teaching material that include a set of learning ability that has been arranged simply in helping the students to reach the learning objective (Zulfadli, 2017). The made module contains the sub-material utilization of biodiversity and information of the research result that includes images and description of the medicinal plants types based on the interview result in the Raut Muara Village, Sekayam Sub-district, Sanggau District.

The utilization of biodiversity module in this research is made using A4 paper and contain 17 aspects that represented sequentially, which are: cover, preface, contents, module usage instruction, introduction (core competence, basic competence, indicator, module description, learning objective), material description, the result of the ethnobotanical study of the medicinal plants research at Raut Muara Village (contains of classification, description, efficacy, and how to make and use it), summary, LKPD (students' worksheet) and test question, evaluation, glossary, and references. This is the utilization of biodiversity module image presentation on Figure 1, 2, 3 and 4.



Figure 1. Cover, Preface, Content, and Module Usage Instruction



Figure 2. Introduction, Material Description, and Result of Ethnobotanical Study of the Medicinal Plants Research at Raut Muara Village



Figure 3. Summary, LKPD (Students' Worksheet), Test Question, Evaluation, and Answer Key



Figure 4. Glossary and References

The Module Validity of The Sub-Material...

The module will be tested for its feasibility from 5 validators, 2 of them are Biology Education lecturers at Universitas Tanjungpura Pontianak and 3 of them are Biology teachers. Before the validation on the module is implemented, the instrument that is used for validate the module should be

validated first. Based on the result of the instrument validation that is assessed as feasible to be used. Followed by the teaching material validation which is module, the data of the teaching material module validation analysis result is summarized in the table 1 that is shown as follows:

Table 1. the Data of the Teaching Material Module Sub-material Utilization of Biodiversity Grade 10th Analysis Result

Aspect	Indicator	Validator					CVR	Description
		1	2	3	4	5		
Content Feasibility	The appropriateness of KD, Indicator, learning objective with the content sub-material utilization of biodiversity	3	4	4	4	4	0.99	Valid
	The usefulness of the material to the knowledge	3	4	4	4	4	0.99	Valid
	The appropriateness with the teaching material needs	3	3	4	4	4	0.99	Valid
	The appropriateness with the students' needs	3	3	4	4	4	0.99	Valid
Language	The used of communicative language	4	3	4	4	4	0.99	Valid
	The used of the language that appropriate with PUEBI	3	4	4	4	4	0.99	Valid
	The used of the language that appropriate with the students' development	4	4	4	4	4	0.99	Valid
Presentation	The clearness of the learning objective	4	3	4	4	3	0.99	Valid
	The systematically presentation	4	3	4	4	4	0.99	Valid
	The information completeness	4	3	4	4	4	0.99	Valid
Graphic	The used font is interesting and easy to read	4	3	4	4	4	0.99	Valid
	The used of lay out	4	3	4	4	4	0.99	Valid
	The cover module enticement	4	3	4	4	4	0.99	Valid
	The appropriateness of the module content with the design	4	3	4	4	4	0.99	Valid
	The graphic or image enticement	4	3	4	4	4	0.99	Valid

Description:

CVR= *Content Validity Ratio* (Rasio Validitas Konten)

CVI = *Content Validity Index* (Indeks Validasi Konten)

Findings and Discussion

The module validation is implemented through the validation sheet from 4 evaluation aspects which

are, content feasibility, language, presentation, and graphic. There are 15 indicators that is used in testing the module feasibility so that the module is feasible to be used or not in the learning process activity of the sub-material utilization biodiversity in school. The

content feasibility aspect, the CVI score in 4 aspects obtains 0,99 which called valid. The evaluation indicator that is assessed in the module has followed the syllabus criteria of curriculum 2013, in this aspect, the appropriateness of basic competence (KD), the knowledge material benefits, appropriate with the teaching material needs, and appropriate with the students' needs is assessed.

According to Hamdani (in Fajariani et al., 2016), module systematic is planned with the curriculum principle and the students' needs. The material utilization from the module is assessed based on the plant images, the utility and how to make a plant that is taught in the society life. Based on the learning by module, the students can try directly how to manage a plant that is used for traditional medicine as the needs, also can make the students motivate in conserve biodiversity, more precisely by knowing the medicinal potential that contained in the plants.

In this evaluation, the module is designed with the purpose that is presented systematically appropriate to the syllabus principle of curriculum 2013. According to Bahtiar (2015), teaching material that is called good if it includes sufficient materials and explained sequentially in completing the purpose in the learning process. The module that is presented with easily understanding discussion and motivate the students to be independent. The student who is called success in learning if using the media that can increase the students. The right teaching material can help the students to learn better (Sanjaya, 2012).

The language aspect, the CVI average score on the 3 indicators is 0,99 which called valid. The evaluation criteria that seen in this aspect is the

using of communicative language, the using of language is appropriate with PUEBI (*Pedoman Umum Ejaan Bahasa Indonesia*) principle, proper language placement for the students. The module is planned with simple language, as Daryanto stated (2013) that a grammar rule in the module should by the easy language, not complicated and simple. Then, the making of module is also appropriate with PUEBI principle. The module is designed with the easy conversation language, and clear and short discourse that is not difficult. The language use that is made to accommodate module feature is user friendly which means the language should be familiar for the students (Daryanto, 2013). The parts of the module should be used clear and not complicated language so the students can understand the content of the module (Fajarni, 2016).

The material presentation in this case is assessed on 3 evaluation indicators with the CVI average score is 0,99 that is stated as valid. The module is designed with the complete and consecutive presentation from cover to references. The module is designed with the learning objective so it helps the students in mastering the appropriate material with the learning objective that will be reached. The material in the module is presented with the interesting display from the presentation of images, graphic, and information that is delivered so it makes the students be more interest to read by the module with the purpose to learn.

Graphicly, the CVI average score from 6 indicators is 0,99 which is called valid. The evaluative indicator that is determined in this case is the enticement and legibility of the used font, the usage and layout, the enticement of the module

cover, the sufficient of module and design, the enticement of graphic or image. According to Sudjana and Ahmad (2013), the image display and placement that is presented in the module should be appropriate with the learning concept so the using of the module can function properly appropriate with the learning objective.

The displayed image should also be interesting, clear, and real (Sadiman et al., 2014). Because the image can draw the students' attention to learn and understand the material. The material presentation in the module is completed with the images that are appropriate with the sub-material about the utilization biodiversity, and the information that is supporting so the students can understand the material contents in the module well, appropriate with the syllabus.

Conclusion

Based on the analysis of the four evaluation aspects which are the feasibility of content, language, presentation, and graphic consisting 15 indicators to evaluate the module feasibility. The CVI score is 0,99 that considered as module valid. The valid category is in all the feasibility of content, language, presentation and graphic evaluation aspects which means the module has been appropriate with the learning objective and feasible to be used.

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