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Development of Student Worksheets (LKPD) Case Based Learning based on Local Wisdom in Class X Biodiversity Materials

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Abstract

Case-based learning implemented by teachers in schools is still less effective, resulting in learning that is less meaningful. In addition, biology learning is rarely associated with local wisdom surrounding the school environment. This study aimed to develop a local wisdom-based case-based learning student worksheet (LKPD) on biodiversity material for Grade X students at SMA Negeri 3 Sigi and to determine its feasibility. This research employed a Research and Development (R&D) approach. The subjects consisted of two biology teachers and 37 Grade X students. The development process was conducted through the stages of analysis, design, development, implementation, and evaluation, resulting in a standardized LKPD ready for feasibility testing. The feasibility results indicated that the developed LKPD was highly suitable for use as a biology learning medium. Validation by the material expert yielded an average score of 92.35%, while validation by the media expert produced an average score of 86.45%, both categorized as "very good." Teacher responses reached 95.83%, and student responses reached 87.55%, both also falling within the "very good" category. Therefore, the developed local wisdom-based case-based learning LKPD is considered feasible and appropriate for supporting meaningful biology learning on biodiversity material in senior high schools.

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Introduction

A learning device is a tool or material used to carry out the learning process, some learning tools in formal education such as syllabus, lesson plans, worksheets, and so on. Student worksheets or abbreviated LKPD is one part of the learning tool as a means to support and facilitate teaching and learning activities so that effective interactions will be formed between students, and can increase student activity in improving learning achievement. Activity sheets can be used for any subject. Umbaryati (2016) states that student worksheets are a learning resource that can be developed by educators as facilitators in learning activities. The prepared LKPD can be designed and developed according to the conditions and situations of the learning activities that will be encountered, so that students are expected to be able to study the teaching material independently.

In relation to the 2013 curriculum, students are required to be able to learn independently by emphasizing three areas that will become potential students, namely attitudes, knowledge and skills (Kemendikbud RI, 2013). To develop the potential of students in these three fields, students need to be trained to learn according to the scientific method. The requirements for science learning in the global era are to prepare students with different skills and competencies such as creative thinking, innovation, critical thinking, problem solving, collaboration, communication, information, technology, and leadership (National Science Teachers Association., 2011).

Learning tools should be prepared using the scientific method, one of which is the preparation of learning tools based on case-based learning models. Case based learning begins with a problem and teaches the essence in the context of the problem, the problem in case based learning is in the form of a story description. The advantages of using story descriptions in the case-based learning model according to Azzahra (2017) are (1) stories can be used as a copy of the basic concepts and theories being taught, and are rich in examples related to students' understanding memory; (2) stories can be used as examples of cases that must be resolved by students and become a good learning strategy; and (3) stories can be a forum for student reflection to measure their ability to understand a case. So it can be concluded that the presentation of learning with story problems or cases will shape the memory of students because they are accustomed to experiencing and understanding various kinds of cases that have various kinds of solutions. This will have an impact on students' memory of a concept that is stronger than if they are taught directly.

In addition to the preparation of learning tools based on case-based learning models, learning tools are also prepared by taking into account the needs of their use, namely needs based on

geographical, ethnographic, and regional wealth characteristics. Therefore, teaching materials should be developed in accordance with local wisdom. Khusniati (2014), states that learning based on local wisdom is obtained from indigenous knowledge or local genius of a society, which comes from the noble values of cultural traditions to regulate the order of people's lives in order to achieve community progress both in creating peace. as well as improving social welfare. The same thing was also expressed by Ramli (2012), that there is a need to emphasize local wisdom as indigenous science in learning biology. Utilizing local wisdom content in learning, besides being able to save local wisdom knowledge itself, can also help students learn biology with real learning applications. Learning that is oriented to local wisdom is believed to be able to improve problem solving skills because the learning delivered is in accordance with the conditions in the environment.

The statement above shows how important local wisdom is in learning biology for contextual learning and the formation of students' character. In fact, not only for students, but also for the surrounding community. This further strengthens the function of science education to produce individuals who are responsible not only for themselves, but also for the social environment. Learning biology is very important for every individual in order to know and understand concepts related to himself and the surrounding natural environment, to build his thinking skills and develop skills, insights and awareness about knowledge related to its use in everyday life as early as possible, so that can be applied in real terms (Listiana, 2013).

In line with this, the research conducted by Otis et al., (2020) regarding the development of contextual-based student worksheets was designed and structured to help students be able to make connections between the knowledge they have and its application in everyday life so that the subject matter will be be more meaningful. This study has something in common, namely using the ADDIE development model. Subsequent research conducted by Tunnur (2021), aims to produce problem-based learning worksheets on biodiversity material that are valid and practical. This LKPD was developed using 3 stages of the 4-D model, namely the define stage by defining learning terms using the curriculum, the design stage by designing the components of the LKPD and the develop stage which aims to generate validity.

The results of observations by researchers at SMA Negeri 3 Sigi, through interviews with several teachers who teach biology subjects, obtained several obstacles in the learning process. These obstacles include, the lack of variation in the use of learning tools in teaching and learning activities in class, especially the use of LKPD, as an alternative means of presenting subject matter that emphasizes the activeness of students to find and develop concepts and can motivate students in learning. Teachers have not done much to develop learning tools so that the learning process becomes monotonous.

The teacher has shown various variations of learning models, but the case-based learning model has not been effectively implemented in these schools so that learning outcomes are less meaningful. Another problem is that teachers are required in learning to be able to choose the right learning tools and models because one indicator of learning objectives is learning outcomes. In addition, it was found that teachers rarely associated the concept of biology material with local wisdom around the school environment. So that students have never been taught learning based on local wisdom. Observations were also made with several students regarding the case based learning model which leads to local wisdom that students do not know the local wisdom in their area. Obstacles also found that teachers lack preparation before carrying out learning so that students are less enthusiastic when receiving lessons.

Based on the description above, the researcher is interested in conducting a scientific study regarding "Development of Local Wisdom-Based Case Based Learning LKPD on Biodiversity Material Class X at SMA Negeri 3 Sigi".

Materials and Method

This research is research and development (research and development), the development model used is the ADDIE model. Cheung (2016), the ADDIE model consists of five major stages, namely the Analysis, Design, Development, Implementation, and Evaluation stages. This study aims to produce products and describe the feasibility results of local wisdom-based case-based learning worksheets on biodiversity material for class X at SMA Negeri 3 Sigi.

This research activity was carried out at SMAN 3 Sigi school in class X. The subjects in this study were 2 biology teachers, 1 male teacher and 1 female teacher. As well as 37 students, consisting of 16 male students and 21 female students.

Data analysis includes analysis of qualitative and quantitative descriptive data. Qualitative data were obtained through criticism and suggestions as well as in pilot activities, while quantitative data were obtained through expert assessment and the results of teacher and student questionnaires. The expert assessment analysis consisted of expert validation assessments of material containing 18 items and

media expert validation consisting of 12 items, and teacher and student questionnaire data each containing 12 items measured by a Likert scale. The scores obtained from each category are percentaged using the formula according to Akbar (2017), as follows:

$X = \frac{F}{N}$ x 100 %

Description:

X = Percentage of responses
F = Frequency obtained
N = Total score (maximum score

The ADDIE model has five stages of activity procedures, the following are the stages of the ADDIE model:

1. Analysis

The purpose of the analysis is to determine the basic problems needed in the development of instructional media. This analysis can be reviewed through an analysis of interviews conducted with teachers and students, aiming to explore information and understanding of teachers and students regarding LKPD learning media.

(1) Needs Analysis
This stage of the analysis uses an interview technique which is given to one teacher and three students regarding the case-based learning model and local wisdom-based biodiversity material. Based on the results of the analysis of interviews conducted with teachers and students, it was found that teachers and students felt very important and needed case-based learning worksheet learning media based on local wisdom on biodiversity material.

(2) Material Analysis
The material analysis aims to identify, detail, and systematically arrange the main relevant concepts taught based on the initial-end analysis (needs and material analysis). This analysis is the basis for developing learning objectives. Based on the results of basic competency analysis, the material analysis stage shows that the purpose of making LKPD learning media is to help teachers and students in contextual learning to achieve learning objectives, especially biodiversity material based on local wisdom.

2. Design

At this stage, the researchers made an initial design of a case-based learning LKPD product based on local wisdom on biodiversity material for class X SMA Negeri 3 Sigi according to the needs of teachers and students, as well as indicators of competency achievement. The contents of the LKPD design consist of cover, basic competencies, instructions, introduction, contents of LKPD, sources, back cover. This product was designed using the Canva application, designed using A4 paper, with various types of letters, accompanied by an attractive display of paper colors and images.

3. Development

This stage is a continuation of the design stage after obtaining the LKPD prototype. Furthermore, the stages of LKPD learning media products are to get the final result by measuring the feasibility validation which will be validated by expert validators (materials and media) with the assessment instruments provided.

Material Expert Validation

Table 1. Results of Validation Analysis by Material Experts

No	Assessment criteria	Validation Score / Validators 1	Validation / Validator Score 2
1	Material equipment	3	4
2	Material breadth	4	4
3	Material depth	3	3
4	Fact accuracy	4	4
5	Concept truth	3	4
6	Illustration accuracy	3	3
7	Principle truth	3	4
8	Conformity with the development of science	4	4
9	Current examples and references	4	3
10	Contextual	4	4
11	Based on local wisdom	4	4
12	Conformity with the level of development of students' critical thinking	3	4
13	Message understanding	3	3
14	Compatibility of the image with the substance of the material	4	3
15	Grammatical accuracy	3	4
16	Spelling accuracy	3	4
17	Consistency in use of terms	3	4
18	Accurate writing of scientific names	4	4

Average Score	66 ÷ 18 = 3.66	67 ÷ 18 = 3.72
Percentage	91.66 %	93.05 %
Postgraduate Lecturer	Expert Validator 1	Expert Validator 2
Tadulako University	Dr. I Made Budiarsa, M.Si.	Dr. Amran Rede, M.Pd.

Material Expert Validation

Table 2. Results of Validation Analysis by Media Experts

No	Assessment criteria	Validation Score / Validators 1	Validation / Validator Score 2
1	The exact size of the text used	3	4
2	Clarity of text size used	4	4
3	The accuracy of the form of the text used	3	4
4	The exact color of the text used	3	4
5	Accurate text color with *the background* used	4	3
6	The quality of the images used	3	3
7	The color composition of the image used	3	3
8	Match the color of the image used	3	3
9	The attractiveness of the appearance of the material description	4	4
	Benefits Aspect		
10	The use of LKPD can help the learning process	4	4
11	The use of LKPD can motivate students to learn	3	3
12	LKPD can provide information to teachers and students about the benefits of biodiversity based on local wisdom.	4	3
	Average Score	41 ÷ 12 = 3.41	42 ÷ 12 = 3.5
	Percentage	85.41 %	87.5 %
	Postgraduate Lecturer	Expert validator 1	Expert validator 2
	Tadulako University	Dr. I Made Budiarsa, M.Si.	Dr. Amran Rede, M.Pd.

Apart from being in the form of a table presentation of the LKPD product assessment, it is illustrated in the diagram from the validation results of material and media experts on all the following aspects of the assessment:

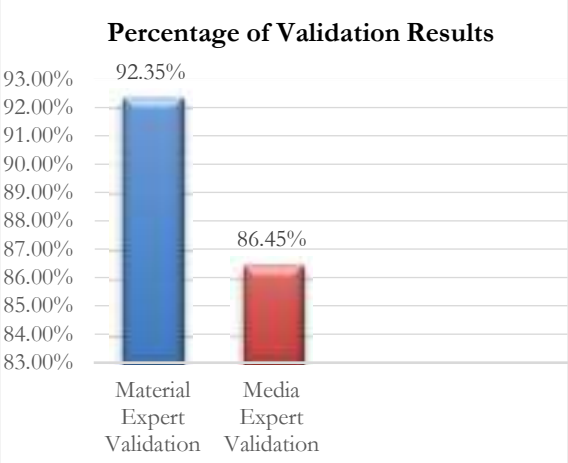


Figure 5. Expert Validation Results Percentage Diagram

Teacher Response

Table 3. Results of Teacher Response Analysis

No.	Statement	Average
1	Learning using case based learning worksheets based on local wisdom on biodiversity material is very interesting	4
2	The pictures presented in the case-based learning worksheet based on local wisdom on biodiversity are appropriate and interesting	4

4. Implementation

The learning media development product in the form of Case Based Learning LKPD based on local wisdom on biodiversity material has been revised by material experts and media experts. The next stage is implementation by means of being tested in learning to students by dividing 6 groups consisting of 6 people in each group, so that the total number of students is 37 people. Teachers and students who carry out learning using LKPD Case Based Learning based on local wisdom on biodiversity material are given a questionnaire in which there are 12 questions. The product trial results are as follows:

3	The colors presented in case based learning worksheets based on local wisdom on biodiversity are appropriate and contrasting	3.5
4	The type of font used is appropriate and easy to read	3.5
5	Sentences/grammar in LKPD case based learning based on local wisdom on biodiversity material	3.5
6	Material in LKPD case based learning based on local wisdom on biodiversity material is presented systematically	4
7	Instructions for filling in LKPD case based learning based on local wisdom on biodiversity material are easy to understand and implement	4
8	Mr/Mrs teachers before starting learning using LKPD case based learning based on local wisdom on biodiversity material prepare learning tools such as lesson plans	4
9	Mr/Mrs teacher conveys and explains the purpose of the learning objectives by using case-based learning worksheets based on local wisdom on biodiversity material	4
10	Mr/mother teachers in biology learning use LKPD case based learning based on local wisdom on biodiversity material carrying out according to the syntax of the case-based learning model	4
11	Mr/Mrs teacher guides students in the group discussion process, presents the results of the discussion and responds to the results of the discussions given to students either in groups or individually	4
12	Mr/Mrs teachers experience difficulties when carrying out the learning process using case-based learning based on local wisdom on biodiversity material	3.5
	Total	46 ÷ 12 = 3.83
	Percentage of responses (%)	95.83

Student Response

Table 4. Results of Student Response Analysis

No.	Statement	Average
1	Learning using case based learning worksheets based on local wisdom on biodiversity material is very interesting	3.78
2	The pictures presented in the case based learning worksheet based on local wisdom on biodiversity are appropriate and interesting	3.56
3	The colors presented in case based learning worksheets based on local wisdom on biodiversity are appropriate and contrasting	3.37
4	The type of font used is appropriate and easy to read	3.83
5	Sentences/grammar in LKPD case based learning based on local wisdom on biodiversity material	3.56
6	Material in LKPD case based learning based on local wisdom on biodiversity material is presented systematically	3.56
7	Material in LKPD case based learning based on local wisdom on biodiversity material can be remembered easily	3.16
8	Instructions for filling in questions in LKPD case based learning based on local wisdom on biodiversity material are easy to understand and implement	3.64
9	Biology learning using case based learning worksheets based on local wisdom on biodiversity material can motivate you in the learning process	3.70
10	Case studies in LKPD case based learning based on local wisdom on biodiversity material help you understand the questions given more quickly	3.59
11	Biology learning using case based learning worksheets based on local wisdom on biodiversity material can improve research and analysis abilities in the process of finding solutions to a given case	3.21
12	The use of case based learning worksheets based on local wisdom on biodiversity material makes you play an active role in study group discussions.	3
	Total	41.96 ÷ 12 = 3.49
	Percentage of responses (%)	87.55

it is illustrated in the following diagram:

In addition to the table serving the assessment of teacher and student responses to LKPD products,

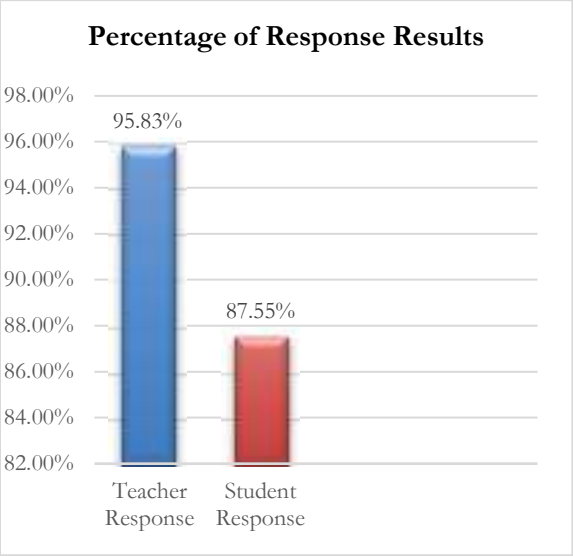


Figure 6. Percentage diagram of teacher and student response results

5. Evaluation

The final stage of testing the LKPD on biodiversity material is to conduct a formative evaluation. This formative evaluation is intended to see the feasibility of developing LKPD for teachers and students in biodiversity material. The measure of the success of developing this LKPD is seen from the feedback from teachers and students who have filled out the questionnaire given. From the results of this evaluation, an illustration was obtained that the development of case-based learning worksheets based on local wisdom on biodiversity material, this was proven based on the percentage of teacher responses of 95.83% and student responses of 87.55%. This is supported by the statement of Aldoobie (2015), that the final stage in developing an LKPD is the evaluation stage. This evaluation is the final improvement of LKPD as a learning medium, and this final evaluation also occurs in the previous stages.

Results and Discussion

Based on the research that has been done, the results are as follows.

Development of Local Wisdom-Based Case Based Learning LKPD on Biodiversity Class X at SMA Negeri 3 Sigi

The diversity of media in learning will greatly assist educators, especially in selecting appropriate learning media and in accordance with learning needs on various instructional concepts and objectives. According to Azzahra (2017), one of the factors that influence the success of the teaching and learning process is the selection and use of the right method for a concept. Learning that is carried out in a varied, not monotonous, and able to increase the activeness of students is important in the teaching and learning process to achieve learning objectives.

Teaching materials can be developed from various sources around us. One of them is the creation of innovation and creativity in turning environmental learning resources into interesting teaching materials for students, Otis et al., (2020). Student Worksheets (LKPD) are teaching materials that are used to support the learning process individually or in groups that can build their own knowledge with various learning resources. The educator acts as a facilitator and the task of the educator is to provide learning tools.

The media that has been developed is in the form of case-based learning LKPD learning media based on local wisdom on biodiversity material, where this media is structured based on the needs of teachers and students at SMA Negeri 3 Sigi. According to Sukmadinata (2010), development is not only developing existing products, but also creating new products that can be accounted for. Products developed must go through a series of scientific stages, namely a systematic review of the design, development, and evaluation of a learning product that must meet validation criteria by certain experts. LKPD has the advantage that it is easy to use for independent study because it has a systematic, attractive arrangement, and is equipped with illustrations. In line with what was stated by Prastowo (2014), LKPD is useful as teaching materials that can play an educational role, as teaching materials that make it easier for students to understand the material provided, as concise training materials, and facilitate the implementation of teaching to students because it can replace the teacher's role. in the classroom. The results of the research that will be discussed are the process of developing LKPD media, starting from the analysis and design stages to obtaining standard LKPD.

The process of developing research-based LKPD learning media uses the ADDIE development model which consists of 5 main stages, namely: Analysis, Design, Development, Implementation, Evaluation. In this research stage it begins with identifying problems to find out the problems that exist in schools in the learning process. After identification, the researcher conducted a needs analysis to find out the cause of the problem. Researchers analyzed the needs of students' conditions in learning activities and also the state of the learning environment through interviews. According to Zahro, et al., (2017), media helps concretize concepts or ideas and helps motivate students to learn actively and media can be a bridge to think, understand concepts and act. Therefore, it is necessary to choose learning media according to needs, in order to achieve learning objectives.

Furthermore, the material analysis aims to identify, detail and compile the main materials and then develop what students will study, the selection of LKPD learning media criteria is intended so that the design or design of the contents of the learning media is in accordance with the learning curriculum material. After analyzing the material by looking at the learning implementation design (RPP), the main reference in making LKPD is obtained, namely learning media LKPD learning media which contains biodiversity material based on local wisdom. This is so that teachers and students can understand biodiversity material based on local wisdom. According to Arikunto (2013), learning media is a set of learning materials that must refer to the curriculum that is being used to achieve established competency standards and basic competencies. Then Yusuf (2018) added, that the preparation of learning tools must be consistently interrelated and logically have a clear format and theoretical basis.

In the second stage, namely design, the researcher designed a series of worksheets that could assist students in understanding local wisdom-based biodiversity material. In the preparation of the initial design, the LKPD at least includes a cover title that describes the material, determines basic competencies, instructions, learning objectives, activity steps, initial information/material, determines the stages of case-based learning, sources, and also back cover. As explained by Arikunto (2013), a learning media is said to be valid if the results are in accordance with the criteria, in the sense that it has parallels between the test results and the predetermined criteria. At the end of the design period, 1 standard contextual LKPD product has been obtained which will be taken to the next stage, namely product feasibility testing.

Feasibility of LKPD Case Based Learning Based on Local Wisdom on Biodiversity Class X at SMA Negeri 3 Sigi

After going through the design stage, a standard conceptual LKPD product design is obtained which is then developed through the development stage containing the realization of the product design that was previously made.

The developed LKPD is 3 LKPD. LKPD-1 covers material on biodiversity based on local wisdom for use as food ingredients, LKPD-2 covers material for biodiversity based on local wisdom for use as food coloring & fragrances, and LKPD-3 with material on biodiversity based on local wisdom for use as medicinal plants. At this stage validation is carried out by material and media expert validators to test the feasibility of the product. According to Porozovs, et al., (2015), the learning tools developed must be valid so that they are suitable for use in the learning process, then Yusuf (2018), adds the validity of the learning devices apart from having to have content validity, more importantly they have to meet validity construct.

The first validation process for the material expert-1 got a score of 66 with an average of 3.66 with a percentage of 91.66%, and the validator for the material expert-2 scored 67 with an average of 3.72 with a percentage of 93.05%. The percentage gain from the two material experts' responses was in the "Very Good" category. This means that the developed LKPD is feasible but there are still several items being evaluated, so they must be revised and improved.

LKPD media is declared feasible because it is based on expert research on the material presented in LKPD in terms of completeness of material, breadth of material, depth of material, accuracy of facts, correctness of concepts, accuracy of illustrations, correctness of principles, conformity with current scientific developments, examples and references, contextual, based local wisdom, suitability with the level of development of students' critical thinking, understanding of messages, suitability of images with material substance, grammatical accuracy, spelling accuracy, consistency of term use, and accuracy of writing scientific names, get a score of 3 and 4. So that after being averaged then LKPD is included in the very feasible category. In line with Ariana, et al., (2022), the development of Project Based Learning-based worksheets on water pollution material at Pontianak Middle School. Based on the results of product validation on the material aspect, a validity percentage value of 98% is obtained with a very valid category.

Then the second validation was on the media expert validator, based on a media validation questionnaire consisting of 12 items that were evaluated in the form of comments and suggestions given by media experts who supported the product revision process. After revision based on the advice given by media experts, followed by media validation, a score of 41 was obtained with a percentage of 85.41% by the media expert validator-1 and a score of 42 with a percentage of 87.5% by the media expert validator-2. So that the LKPD is declared feasible to be tested with revisions.

In line with the results of research conducted by Hadi, K. (2017), the development of a Problem Based Learning model based on local wisdom in class X biodiversity material in South Aceh District was successfully applied to learning so that it was declared valid with an average percentage validation value of 96.83 %. This has similarities with the results of research conducted by researchers regarding the development of case-based learning LKPD based on local wisdom on biodiversity

material at SMA Negeri 3 Sigi, so this research is unique because it turns out that the development of LKPD as a learning medium is deemed necessary to be developed by the teacher as an intermediary tool for achieve learning goals. This is supported by Pratama & Saregar (2019), one of the determining factors for the success of learning in the classroom is the use of learning media. The urgency of using learning media as a learning tool is to help educators convey messages and subject matter to students effectively and efficiently.

The development stage is complete, with material and media assessments in the very feasible category, it can be tried out at the implementation stage by means of trials on teachers and students in learning activities. In the LKPD trial, teachers were given direct instruction on the LKPD developed through the Canva application. Then the LKPD is used by the teacher and students in teaching and learning activities in the classroom, then the teacher and students are asked to fill out a questionnaire to find out responses to the LKPD that has been developed.

The results obtained from the teacher's responses were obtained with a total score of 46 with an average of 3.83 with a percentage of 95.83%. Based on these results it can be said that LKPD can be received very well and is suitable for use as a learning medium. The responses of the students consisted of 37 people, during the LKPD trial the students were briefed about LKPD. Furthermore, students were asked to fill out a questionnaire to find out students' responses to the developed LKPD. The results obtained from student responses obtained an overall score of 41.96 with an average of 3.49 with a percentage of 87.55% included in the very good category and suitable for use. Previous research conducted by Khotimah & Kuntjoro (2019), that the LKPD developed in the learning process must go through the feasibility analysis stage of the expert validator so that the overall response of students after using the developed LKPD obtains a result of 91.34% in the very good category. This is in line with the research results that researchers got in this study.

In the final stage of learning, an evaluation of LKPD is carried out, the assessment is carried out by the teacher and students through a questionnaire. Evaluation is the last step of the ADDIE learning system design model to provide value to the development of teaching materials in learning. Evaluation is carried out in two forms, namely formative evaluation and summative evaluation. In this study, a summative evaluation was not carried out, but a formative evaluation was carried out. Formative evaluation is carried out at the end of each face-to-face meeting (weekly), the results of the evaluation are used to provide feedback on the development of teaching materials. Furthermore, revisions are made in accordance with the evaluation results or needs that have not been met by the objectives of developing teaching materials.

The main advantages of this LKPD are based on environmental learning resources around students so that they are more applicable and meaningful. This can increase the motivation of students in learning and increase the environmental care attitude of students towards events that exist in the surrounding environment. In accordance with Susanti's statement (2013), which states that using the surrounding environment as a learning resource can make students aware of things that are happening in the surrounding environment. Students are able to apply it in their daily activities. Problems raised in learning should come from real problems faced by students, Tivani (2016).

At the end of the product, after going through all the research and development stages of the ADDIE model starting from analysis, design, development, and evaluation, the final product is a case based LKPD learning media. learning based on local wisdom on biodiversity material that is suitable for use as a learning medium for class X students at SMA Negeri 3 Sigi.

Conclusion

The development of case-based learning worksheets based on local wisdom on biodiversity material for class X at SMA Negeri 3 Sigi is carried out through the stages of analysis and design, so that standard worksheets are obtained that are ready to be tested for feasibility at the development, implementation and evaluation stages. The feasibility of case-based learning LKPD based on local wisdom in class X biodiversity material at SMA Negeri 3 Sigi shows that LKPD is very suitable as a learning medium. Based on the assessment of the material expert validator, an average value of 92.35% was obtained and the media expert validator obtained an average value of 86.45% in the "very good" category. The teacher's response obtained a percentage of 95.83% and student responses obtained a percentage of 87.55%, both responses were included in the "very good" category.

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