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Development of Student Worksheet (LKPD) Based on Outdoor Learning Process (OLP) on Ecosystem Learning Material

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Abstract

The objective of the study is to develop Student Worksheet (LKPD) based on the Outdoor Learning Process (OLP) and an Atlas of Biological Diversity of Biological Learning Material and to analyze the feasibility level of Student Worksheet (LKPD) based on The out Door Learning Process (OLP) and The Atlas of Biodiversity. The type of the study is Research and Development (R&D) with the research design is ADDIE (Analysis, Design, Development, Implementation, and Evaluation). The stage of study analysis was carried out by observing the types of plants, animals, fungi, and algae poured into student worksheet and Atlas of Biodiversity and observing the necessity of the student. The second and the third stages was designing and developing with the main focus to develop a product according to the direction and corrections of the material expert validator and the media expert validator. The following stage was Implementation step which was carried out in SMAN 3 Demak Students class XII MIPA 1, XII MIPA 3, and XII MIPA 6 to determine the level of student knowledge about Science Process Skill (KPS) after they read the LKPD and the Atlas of Biodiversity. Furthermore, at the stage Evaluation, an evaluation of the product developed was carried out in order to obtain a final product that is suitable for application in learning activities. The mean percentage score of the material expert validator was 82.95%, the mean percentage score of the media expert validator was 91.5%, the mean score of teacher validation was 77.5%, the mean score of teacher responses was 80% and the mean score of student responses was 82.2%. Based on the result of the study, it is concluded that the LKPD and the Atlas of biodiversity are very suitable for use. The test results of 40 ecosystem material questions given to 60 students obtained low results with a percentage of 33.35%, meaning that LKPD needed to be applied directly in order to increase students' knowledge of science process skills.

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INTRODUCTION

Education is a conscious and planned effort to create an atmosphere of learning and the learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves and society (Law No. 20 of 2003). Therefore, the implementation of education must be based on the goal of developing the maximum potential of students, both academic and non-academic potential.

Academic achievement can be interpreted as a change in behavior in three domains, namely cognitive, affective, and psychomotor. Of the three domains, the domain measured in this study is the cognitive domain. In measuring it, one of them uses the KKM (Minimum Completeness Criteria). The KKM's score of the National Biology Exam is 55.1% (Ministry of Education and Culture, 2019). Some learning materials have yet to be reached this nominal. One of these learning materials is Ecosystem. For two consecutive years, it is known that the score of the national exam on Ecosystem at SMA Negeri 3 Demak is still low. In 2017 the score of the national exam on the material at SMA Negeri 3 Demak was 53.3%, and in 2018 it was 53.08% (Kemdikbud, 2019).

Learning outcomes are influenced by two factors, they are internal factors and external factors. Internal factors include intellectual abilities, affection such as feelings and confidence, motivation, maturity to learn, age, gender, study habits, memory abilities, and sensory abilities such as seeing, listening, and feeling. External factors relate to the conditions of the learning process, include: teachers, learning quality, learning instruments or facilities in the form of hardware and software as well as the environment, both social and natural environments (Sugihartono *et. al.*, 2007).

With these two factors, one of the efforts that teachers can do to improve student learning outcomes is to improve external factors. Efforts to improve these external factors include managing the classroom well and utilizing appropriate learning media. Class management is an effort made by the person in charge of teaching and learning activities with the aim of achieving optimal conditions so that teaching and learning activities can be carried out as expected (Arikunto, 1986). In order to create learning objectives, the teacher can carry out class management according to the material to be taught. One of the right methods to use for ecosystem materials is the Outdoor Learning Process (OLP). The Outdoor Learning Process is learning that is carried out by inviting students to learn outside the classroom to observe directly the events in the field with the aim of familiarizing students with their environment (Husamah, 2013).

The advantages of the Outdoor Learning Process are that it can build meaning (input), then process it through cognitive structures so that it will impress a long time in memory (reconstruction occurs) (Suherdiyanto *et. al.*, 2016). One of the learning tools needed by the Outdoor Learning Process is LKPD which contains observation instructions and observation sheets. The device that can be used to support the outdoor learning process is Student Worksheet (LKPD), because LKPD can function as a student work guide (Fitriani *et. al.*, 2016). LKPD has advantages in several aspects. From the aspect of use, LKPD is the easiest media, it can be studied anywhere and anytime without having to use special tools. From the teaching aspect, LKPD is said to be superior to other types of learning media because it is a sophisticated medium in developing students' abilities to learn about facts and is able to explore general and abstract principles using realistic arguments. From the aspect of the quality of the delivery of learning messages, LKPD is able to describe words, numbers, musical notation, two-dimensional images, and diagrams with a very fast process. And from an economic aspect, LKPD is cheaper than other learning media (Lismawati, 2010). LKPD can also improve students' science process skills (Kurniawati, 2016).

RESEARCH METHOD

This is a Research and Development (R&D) research design with ADDIE (Analysis, Design, Development, Implementation, and Evaluation) research. First step is analysis, researcher observing the needs of students and collecting species data to be included in the LKPD and biodiversity atlas. Next step is Design and Development, researcher develop products according to the direction and corrections of the material expert validator, the media expert validator, and the teacher validation results. Next step is implementation, researcher collecting data in the form of teacher responses, student responses regarding LKPD and Atlas of biodiversity, and student competency test results. The results of student competency tests were obtained from 60 students of class XII MIPA 1, XII MIPA 3, and XII MIPA 6 who have read LKPD and biodiversity atlas to determine the level of knowledge about Science Process Skills. Furthermore, at the Evaluation stage, an evaluation of the product developed is carried out in order to obtain a final product that is suitable for application in learning activities.

RESULT AND DISCUSSION

The feasibility of LKPD is obtained from several indicators, there are: (1) the validity of the LKPD material and the biodiversity atlas reaches $\geq 51\%$, (2) the validity of the LKPD media and the biodiversity atlas reaches $\geq 51\%$, (3) the results of teacher validation regarding LKPD and diversity atlas reached $\geq 51\%$, (4) the response of teachers regarding LKPD and biodiversity atlas reached $\geq 51\%$, and (5) the responses of students' responses about LKPD and biodiversity atlas reached $\geq 51\%$. Then researcher analyzed the level of achievement of questions regarding knowledge of Science Process Skills. direct learning is not carried out because of covid 19 pandemic, so the data on the achievement of the questions is only used as a description of students' KPS knowledge without any treatment and the result data does not affect the feasibility level of the LKPD and the Atlas of biodiversity.

Material Validity of LKPD and Biodiversity Atlas

The validity of the OLP-based LKPD and the biodiversity Atlas was obtained from the validation results of two material experts who are competent in the field of ecosystem materials. The data from the evaluation of material expert validators are presented in table 1 below:

Table 1. Score of Material Validation

No	Assessment Indicators	Score (%)	
		Validator I	Validator II
1.	Content eligibility	76.9%	86.5%
2.	Presentation components	79.5%	84%
3.	Language component	78.9%	92%
	Total	235.3%	262.5%
	Average	78.4%	87.5%
	Criteria	Very feasible	Very feasible
	Overall score average	82.95%	
	Criteria	Very feasible	

LKPD is made by referring to the components that have been determined by the National Education Standards Agency (BSNP). In material validation, the aspects that are assessed are the aspects of the feasibility of the content, the presentation component, and the language component. The results of the assessment by material expert validators showed the validation results with a score of 82.95%. The biodiversity atlas validation instrument does not stand alone because the biodiversity atlas is an inseparable part of the LKPD.

LKPD assessment instruments and biodiversity atlas are combined into 1 and consist of three aspects. The following is an explanation of each aspect:



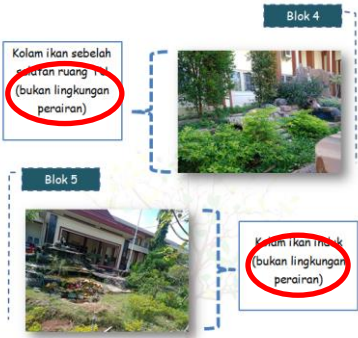
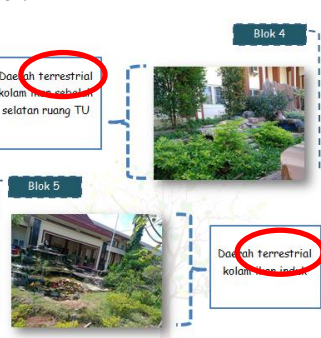
1. Contents

The four indicators on the content feasibility are the suitability of the topic with KD, the accuracy of the topic, the up-to-date of the topic, and encouraging curiosity. The content aspect obtained the validation results from the two material expert validators with a score of

81.7% namely the very feasible category. The topic of LKPD is adjusted to the 2017 X Grade X High School Biology Syllabus, including ecosystem components, energy flow, biogeochemical cycles, and interactions in the ecosystem (Kemdikbud, 2017), the topic has been consulted with biology teachers at SMAN 3 Demak, so that content selection in the topic of the material has been adjusted to the characteristics of student learning. Research by Triyono (2008) shows that the selection of learning strategies must be in accordance with the characteristics of students. The LKPD's concept are accurate and have been adapted to the topic in the 2016 Erlangga's textbook and 2013 Intan Pariwara's textbook. The images and terms used to show the species names in the LKPD and the biodiversity Atlas are true. LKPD is also in accordance with the characteristics of OLP. There are 4 characteristics that must be present in OLP, (1) exploration activities through discovery and inquiry processes; (2) the existence of activities in the form of observation; (3) there is a report as a student assignment, in the form of photos, photos, pictures, oral, and audiovisual; and (4) learning is arranged in a fun way (Nisa, 2015). The LKPD has 4 characteristics, it is proven by the observation of plant, animal, fungal, and algae species in the schoolyard ecosystem, students are invited to find out the relationship between the abiotic and biotic environment, the task of making posters as a form of assignment, and LKPD has been structured to make learning fun.

Some corrections regarding the feasibility of content are presented in table 2 below:

Table 2 Contents revision

No	Content Revision	
1.	On the biodiversity atlas page 26, the correct species name is <i>Pheretima javanica</i>	
	Before: 	After: 
2.	The instructions on LKPD page 9 are not correct (the sentence "bukan lingkungan perairan" is replaced by "terrestrial")	
	Before: 	After: 

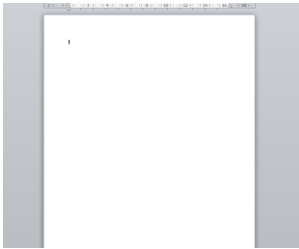



2. Presentation

The second aspect is presentation component. There are four indicators in the aspect of the presentation component, namely presentation techniques, presentation support, presentation of learning, coherence and concordance of thought flow. Feasibility presentation have score 81.75%, it is very feasible criteria. LKPD is presented coherently from simple to complex. The activities at meeting 1 were simpler than meeting 2, and activities at meeting 1 supported activities at meeting 2. That very feasible criteria is supported by (1) the LKPD contained an introductory paragraph located at the beginning of each meeting; (2) presented

the learning flow as a guide for learning outside the classroom; (3) observation tables have been provided in LKPD; (4) there are questions to test students' abilities; (5) there is a bibliography; and (6) observation activities (OLP). Observation activities at OLP directly make students actively involved in learning. Butudoka's research (2014) states that environmental observation activities involve students directly under the supervision and direction of the teacher.

The clutter of thought lines also affects the feasibility of presentation, namely: (1) each meeting in the LKPD is presented coherently and continuously; and (2) the learning flow in the LKPD is presented coherently. The very feasible criteria for the fourth indicator is obtained because the learning flow presented is coherent and continuous between the first, second, third, and fourth meetings. Some revision from validator regarding presentation feasibility are presented in table 3 below:

Tabel 3. Revision of Presentation

No	Revision	
1.	Add the author's CV and personal photo	
	Before: 	After: 
2.	Add image resources	
	Before: 	After: 

3. Language

There are six indicators on the aspects of the linguistic component: (1) versatility; (2) communicative; (3) dialogic and interactive; (4) conformity with the development of students; (5) conformity with Indonesian rules; and (6) use of terms, symbols or icons. The feasibility of language obtained score 85.45% with very feasible criteria

The very feasible criteria for the first indicator were obtained because of the accuracy and effectiveness of the sentences as well as the standardization of terms in the LKPD and biodiversity Atlas, as evidenced by the corrections from the material expert validators showing not many errors. Suggestions for improvement from the material validator are writing errors such as the word "kegiata" which should be "kegiatan", replacing "et. al. " with "et. al.". Messages or information on the LKPD and the atlas of biodiversity have been delivered in a familiar and interesting written language, and the spelling is arranged according to the EBI. In addition, most of the use of terms and symbols in LKPD and biodiversity atlas has been written consistently. The suggestion from the expert validator is to make the writing of abiotik words uniform, because in LKPD some are written with the word "abiotic" and some are written with the word "abiotik".

Media Validity of LKPD and Biodiversity Atlas

The validity of OLP-based LKPD media and biodiversity atlas is obtained from the validation results of two media experts. The validity of the media includes an assessment of: graphic aspects. The data from the media expert validator's assessment are presented in table 4 below:

Table 4. Score of Media Validity

No	Aspects of Graphic Feasibility	Score (%)	
		Validator I	Validator II
1.	LKPD Size	100%	87.5%
2.	LKPD Cover Design	94.6%	91.07%
3.	LKPD Content Design	98,07%	77,8%
	Total	292.67%	256.37%
	Average	97.5%	85.4%
	Criteria	Very feasible	Very feasible
	Overall score average	91.5%	
	Criteria	Very feasible	

LKPD size have score 93.75%. LKPD and the biodiversity Atlas's size have been made according the indicator criteria according from BSNP (2014), LKPD size is A4 and biodiversity Atlas size s A5. LKPD cover design have score 92.8%. The validator assessed that the cover of LKPD and the biodiversity atlas was generally good. The size of the letters, the title font, and the proportion of the cover color of the LKPD and the biodiversity atlas are correct and interesting. According to Mudjito (2001), a good and attractive cover can increase students' interest in reading. Widodo (2017) in his research argues that LKPD is designed with an attractive design as needed. After going through the validation step, there are several parts of the LKPD cover that need to be improved, one of them is the selection of illustrations that are not right. The illustration image used internet image, this is considered inappropriate by the validator because the image is not original from the author's documentation, so the validator suggests that the illustration on the cover be changed with the original image from author's documentation. In addition, the validator also suggested including the name of the essay supervisor as the author under the name of the student researcher. The author's name is listed in the order according to the largest contribution, and the author's name is written without academic title, rank, or position (LIPI, 2017).

The third indicator is the content design of the LKPD and the biodiversity atlas have score 87.9%. LKPD content design is generally good, but still needs a lot of improvement. First, on several pages in the LKPD there were still words that were not written properly, for example the word abiotic was found which should have been written abiotik. Second revision is about image source. A good layout of image sources is written just below the image on the left. The selection of pictures must also be clear and can be easily understood by students and it is not recommended to overlay pictures. Fourth revision is about writing tables. Some tables have not been given table titles. Fifth revision is about page background. The background in the LKPD should be removed, but the background on the biodiversity atlas page is allowed. Sixth revision is about articles in LKPD. The validator suggests that the articles in the LKPD be written in two columns. Seventh revision is about question writing. Each question is written on the same page and cannot be separated on another page, and add answer keys at the end of the questions. Eighth revision is about problem work instructions. The validator suggests to add question instructions at the question page. Research by Widodo (2017) argues that LKPD is made as attractive as possible to increase the enthusiasm of students in spelling out LKPD, students become excited and do not get bored quickly.

Teacher's Validation and Responses

Teacher's validity and responses were obtained from the validation results of the biology teacher at SMA Negeri 3 Demak. The responses regarding the LKPD and atlas of biodiversity with an instrument in the form of a questionnaire. The results of the teacher validation are presented in table 5 below:

Table 5. Teacher's Validation

No	Indicators	Score (%)
1.	Content	80.7
2.	Presentation	77.3
3.	Language	76.3
4.	Graphic	75.6

Total	310
Average	77.5
Criteria	Very feasible

Based on the teacher validation score, the content is included in the very feasible criteria. The material in the LKPD is adjusted to Basic Competence (KD) 3.10 ecosystem material, namely "Analyzing ecosystem components and the interactions between these components. Presenting works showing the interactions between ecosystem components (food webs, biogeochemical cycles)" (Kemdikbud, 2017). As a companion of LKPD, a biodiversity atlas is made based on the needs of LKPD to identify living things in SMA Negeri 3 Demak. The biodiversity atlas contains data on plants, animals, fungi and algae. The contents of the LKPD and the biodiversity Atlas accordingly by the needs of ecosystem learning with the main subjects: (1) ecosystem components, (2) energy flows, (3) biogeochemical cycles, and (4) interactions in ecosystems (Kemdikbud, 2017). Research by Triyono (2008) shows that the selection of learning strategies must be in accordance with the characteristics of students' topics must also be adjusted to everyday life, according to the opinion of Tivani (2016), the problems presented in learning (LKPD) must come from real problems.

The presentation aspect is included in the very feasible criteria. LKPD presentations are written coherently from meeting 1 to the last meeting. First meeting contains simple and important work steps. second meeting, etc. cannot be held without completing first meeting's work step. Content and work steps at each meeting were tested with questions at the end of the LKPD. There are 30 questions that have been solved, based on the teacher's validation, the questions used as a competency test should be 40 items. More question is better (Anwar, 2012). Research by Widodo (2017) refers to the aspect of presentation validation, one of which is the presentation technique. The presentation technique consists of: (1) systematic presentation containing the title, objective instructions and questions, 2) the content is presented coherently from easy to difficult, and 3) questions according to the needs of students with difficulty levels from simple to difficult.

Based on teacher validation, the feasibility aspects of the LKPD language and the biodiversity atlas are included in the very appropriate criteria. The language and biological terms used are adjusted to the level of development of high school students in general. Language development is a process of acquiring language, compiling grammar from utterances, selecting the most appropriate and simplest grammar assessment measure from the language (Sit, 2012). Widodo (2017) argues that teachers must know the developmental characteristics of students, so LKPD to be used easily by students. Messages or information on LKPD and Atlas are conveyed in written language that is common and interesting. Common words are words that are well known by the public (Nurhidayah, 2006). Common words are also called popular words, it is words that are commonly used by the wider community in their daily activities (Wijaya, 2016).

LKPD and biodiversity atlas are categorized as very feasible product. Teacher response obtained from teacher responses regarding LKPD and atlas of biodiversity using a questionnaire totaling 20 statements. The results of teacher responses show that the overall response of teachers to LKPD and biodiversity atlas is good. This means that LKPD and biodiversity Atlas are suitable for use in learning ecosystems in schools. The following is the results of teacher responses:

Table 6. Teacher's Responses

No	Aspect	Teacher's responses (%)
1.	Content	80
2.	Graphic	80
3.	Language	80
	Average	80
	Criteria	Very feasible

Student's Responses

Student responses were obtained from 60 student grade XII of SMA Negeri 3 Demak. The questionnaire instrument used contained 24 questions which were divided into 3 aspects: (1) learning materials, (2) understanding, (3) attractiveness, and (4) presentation. The data showed an average response response was good. The score of student response is presented in table 7 below:

Table 7. Student's Responses

No	Aspect	Score (%)
1.	Learning materials	82.74
2.	Understanding	80.75
3.	Attractiveness	83.38
4.	Presentation	80.97
	Average	81.96
	Criteria	Very feasible

Based on the data that has been obtained from the responses of students, the score for the material aspect is 82.74%. The material included in the LKPD and atlas is considered to be in accordance with the basic competencies and depth of ecosystem material in class X. The outdoor learning process in the LKPD is indicated by the presence of outside classroom observations. This observation includes observations of abiotic and biotic environments in the ecosystem. The LKPD's work steps are simple, easy to understand, and adapted to the abilities of students.

The score for the understanding aspect indicates that LKPD and the Atlas of Biodiversity are easily understood by students. In order for the information to be well received, it must be noted the effectiveness of the sentences used. According to the opinion of Ramadhanti (2015), effective written sentences are different from oral effective sentences. If the meaning of the sentence conveyed by the author can easily be understood by the reader, then the sentence is said to be effective. According to Semi (2009) effective sentences have the following characteristics: (1) grammar is in accordance with the rules of the Indonesian language, (2) uses proper spelling and is in accordance with the demands of standard language, (3) is clear, (4) is concise, (5) there is coherence between sentences and between paragraphs, (6) choice of words, language style and sentence form must be varied, (7) all elements function in the sentence.

The attractiveness aspect score is 83.38% indicating that LKPD and the Atlas of Biodiversity are interesting. The attractiveness of LKPD and the Atlas of Biodiversity, among others, lies in the appearance. Based on the comments of the media validator 2, the color selection of the LKPD and the Atlas of Biodiversity is soft and proportional. The attractiveness of Outdoor Learning Process-based LKPD lies in direct observation in the field. Direct observation can increase interest so that it increases students' motivation to learn. According to Hilmi (2016), OLP can increase students' motivation to learn. By using LKPD, students become more aware and motivated in learning (Cicilia, 2020).

The presentation aspect obtained a score of 80.9% indicating that the LKPD presentation was very feasible. The presentation of the table in the LKPD is clear and the components in the table are easy to understand, the letters used are simple and easy to read, the presentation of the images in the Biodiversity Atlas is clear and in accordance with what is in the school. Species of plants, animals, plants, fungi, and algae are in accordance with the results of observations of living species which were conducted in July 2020 in the yard of SMA Negeri 3 Demak. The table presented in the LKPD is made simple in language that is easy for students to understand.

Ecosystem Test

Ecosystem test was tested on 60 students of class XII SMA N 3 Demak, 20 students of XII MIPA 1, 20 students of XII MIPA 3, and 20 students of XII MIPA 6. Classes were randomly selected and only 20 students per class were included, because 10 other students did not give a positive response.

After obtaining data from 60 students, then the data is classified into 10 aspects of knowledge of science process skills which can be measured by multiple choice questions.

The following shows the score for 10 aspects of KPS:

Table 8. KPS Score

No	Aspect	Score (%)
1.	Observe	46
2.	Classify	23.3
3.	Interpret data	24.1
4.	Predict	50
5.	Hypothesizing	12.5
6.	Analyze	38.1
7.	Planning an experiment or research	31
8.	Using material and tools	48.8
9.	Apply the concept	26.4
10.	Communicating	33.3

Based on this table, it can be seen that the percentage of students' knowledge on science process skills is generally poor. The test results for each aspect are explained as follows:

1. Observe

Based on the data, students' knowledge of the science process skills of observing are fair. There are several factors: (1) the ability of the five senses (Suryabrata, 2014); (2) students' intelligence or intelligence (Lestarini, 2015); (3) learning styles (Nasution, 2009); (4) interest and motivation (Slameto, 2013). One of four factor above is interest and motivation. Based on an interview with one of the biology teachers at SMAN 3 Demak, Mrs. Wahyu Astuti S.Pd, she said that teaching ecosystem is only learned with verbal explanations and pictures without any observation activities in the schoolyard. Learning with observations outside the classroom can increase student learning motivation (Hilmi, 2016).

2. Classify

From the test result, the classification aspect got bad results. Bad results were obtained because students could not get a direct learning to observing and classifying living things. Classification processes include making direct observations, observing similarities and differences, determining grouping characteristics, classifying and naming the species found (Abrucasto, 1982).

3. Interpret data

Interpreting the data gets bad results because there is no learning directly using LKPD. In LKPD, students are trained to write down their observations, then make conclusions from the data. Because online learning, this LKPD not being used properly, so students' ability to interpret data was low.

4. Predict

Predict get fair results, but these results are still low. One of the causes of low predictive ability is due to lack of training or habituation. If the ability to predict is not trained by investigation, the ability cannot appear properly (Iqbalia, 2015). The teacher only explains the ecosystem learning material without bring students to investigate. Due to the absence of investigative activities in learning, the ability to predict students is low.

5. Hypothesizing

The hypothesized aspect gets results with very poor criteria. One of the reasons for the low ability to hypothesize is that practicum is rarely done (Liandari, 2017). Research by Liandari (2017) proves that practicum can improve the ability to formulate hypotheses and test hypotheses. Based on interviews with biology teachers at SMAN 3 Demak, practicum activities are rarely carried out due to limited learning time. This can lead to the low ability of students to hypothesize.

6. Analyze

Analyze get result with bad criteria. Novita's research (2016) show that the ability to analyze high school students is 42.06%, the research was conducted 13 times. The low ability to analyze students is because the teacher is still fully implementing the teacher center learning (Novita, 2016). At SMAN 3 Demak, most of the learning of ecosystem learning material is still carried out by the teacher center learning, this causes the results of the students 'ability to analyze SMAN 3 Demak to be low,

because according to Oguz (2008), teacher center learning is not sufficient to improve students' analyze ability.

7. Planning an experiment or research

Planning the experiment get result with bad criteria. This is due to the lack of direct learning. In LKPD, there are steps to conduct experiments. Students have never received information about the experiment, so students get low scores on the aspect of planning a similar experiment.

8. Using material and tools

Using material and tools get result with fair criteria. Knowledge about using material and tools and is related to how many often teacher carry out student in practicum activities. In this case, the less frequent the practicum, the lower the knowledge about using material and tools.

9. Apply the concept

Knowledge to apply the concept get result with fair criteria. One of the reasons for the low knowledge of applying student concepts is that students tend to memorize the concepts written in textbooks without knowing their meaning (Widystuti, 2014). This may be due to less meaningful learning. Meaningful learning can improve student understanding (Tarmidzi, 2018).

10. Communicating

Knowledge to communicating get result with bad criteria. The questions used to measure students' communicating knowledge were taken from the LKPD. This aspect of getting a low score is because the students did not read the LKPD carefully so that the tables in the LKPD were not understood.

CONCLUSION

Based on this research, it is concluded that the LKPD based on the Outdoor Learning Process of ecosystem using the BSNP eligibility standards (2014) seen from the results of the assessment by material expert validators, media expert validators and biology teachers. The three validators each gave a validation with very feasible criteria.

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