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### Development of Student Worksheets (LKPD) Environmental Change as Learning Resources for Grade X Student of SMA 2 Negeri Wonosobo

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#### Abstract

This study aims to determine the level of validity of Student Worksheet environmental change as learning resources for grade X student of SMA Negeri 2 Wonosobo. This type of research is research and development (*Research of Development*). The research and development model used is a procedural model. The types of instruments needed to measure the effectiveness of the teaching materials developed is questionnaires. The data analysis in this study is the analysis of validity. Analysis of non-test instrument data in this study used descriptive data analysis techniques using a Likert Scale. The results showed that the research and development that had been carried out resulted in a learning medium, namely the Student Worksheet (LKPD) environmental change as learning resources for grade X student of SMA Negeri 2 Wonosobo. From these results, it can be concluded that the implementation of LKPD shows results that meet the feasibility. The need for LKPD development on waste management as a learning resource for students who are able to foster an attitude of environmental conservation on environmental change materials, including appearance, consistency, use of letters, physical criteria, material/quality of content, presentation and language. These needs are important to be developed so that students are more active and can stimulate students to think critically about the material being studied by class X students of SMA Negeri 2 Wonosobo.

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## **INTRODUCTION**

In an effort to create learning that is in accordance with the real context in everyday life, a teacher needs to use teaching materials in the form of Student Worksheets (*Lembar Kerja Peserta Didik*) to increase student activity in the learning process; help students develop concepts; train students to discover and develop process skills; as a guide for teachers and students to carry out the learning process; add information about the concepts that students learn through systematic learning activities; and provide convenience for teachers in carrying out learning (Mulyati Yetti, 2008:4). LKPD is very practical and in it there are several practice questions. This can familiarize students to often train their brains to think creatively related to subject matter that has been studied previously, thus indirectly making it easier for teachers to teach (Astari, 2017: 151).

Several problems are still often encountered in the use of LKPD in schools, including the LKPD biology has not been compiled by each supporting teacher, and it is known that there are still many teachers who compose LKPD biology by taking sources or materials from the internet or reading materials from publishers. Learning materials are still general in nature with the examples presented in the LKPD not compiled by each supporting teacher. Learning activities are still limited to the use of laboratories, and do not explore the natural potential that exists in the environment around the school. This also has an impact on the difficulties felt by students in linking the material learned at school with phenomena that occur in everyday life in the surrounding environment.

In teaching and learning activities, there are many variations of learning resources that can be utilized by teachers such as textbooks, supporting books, student activity sheets, media, and so on. Several variations and learning innovations carried out by teachers, including teaching materials, should be adjusted to the applicable curriculum, the level of students' abilities, and the conditions in which students study so that learning objectives and competency achievement for students are achieved to the maximum. Therefore, researchers need to vary the learning of biology by applying the development of LKPD on the material of environmental change, by involving students in active learning activities, so that in students they grow an attitude of environmental preservation. The environment around students is a learning resource that can be used to achieve quality educational processes and outcomes. For this reason, environmental problems are various forms of problems that occur in the environment around students, consisting of; Problems with oneself, the environment, or the community where students live can be used as learning resources. There are several problems related to environmental changes in Wonosobo that have not been optimized as a source of student learning. One of the phenomena of environmental change is the problem of waste.

The increasing human population has more or less contributed to the problem of environmental waste. The waste problem cannot be separated from community behavior factors. Human cycles on earth bring about changes in the environment in which we live, causing waste to be dumped into water and soil, but this is not matched by the way humans themselves protect the environment. The fact that is still happening shows that there are still many people who throw garbage in the wrong place, so this causes environmental problems. This can happen if there is no awareness and love for the environment that must be maintained in balance.

Based on the above background, the use of LKPD allows teachers to teach more optimally, provides guidance to students who have difficulty, provides reinforcement, and trains students to solve problems, so it is necessary to study the validity of LKPD environmental change as learning resources for grade X student of SMA Negeri 2 Wonosobo.

## **RESEARCH METHODS**

This research was conducted at SMA Negeri 2 Wonosobo on students of grade X during from July 28 until August 4 term 2021. The data analysis technique used validation data analysis using an instrument to determine the average value. LKPD contains material, instructions for implementing learning tasks with reference to *Kompetensi Dasar (KD)* that must be achieved, equipped with pictures taken from the surrounding environment, as well as an attractive appearance.

## RESULTS AND DISCUSSION

The development carried out in this study resulted in a Student Worksheet (LKPD) environmental change as learning resources for class X student of SMA Negeri 2 Wonosobo to grow attitude of environmental cleanliness based on expert judgment and interesting based on the responses of educators and students.

The results of the needs analysis conducted by the researchers obtained the main results, namely learning media in the form of student worksheets (LKPD) on waste management as a source of student learning in order to foster an attitude of environmental preservation. Research and development is carried out at SMA Negeri 2 Wonosobo. Respondents in this study were educators and students of grade X MIPA 1, especially on the subject of Environmental Change. This study uses research and development methods, namely in this study the research method used to produce products in the form of LKPD, and test the effectiveness of the LKPD.

## RESEARCH RESULT

The following are the results of the research and a description of the LKPD development procedure along with further discussion, so that a valid LKPD is finally obtained.

The result is below.

### 1. Validation Result from Expert

Table 1. Average value from expert

<b>Media Expert</b>		
<b>Aspect</b>	<b>Value Percentage</b>	<b>Category</b>
1. Appearance	94,29%	Very Valid
2. Consistensy	90,00%	Very Valid
3. Letter	100%	Very Valid
4. Criterial Physical	100%	Very Valid
<b>Amount Mean</b>	<b>96,07%</b>	<b>Very Valid</b>
<b>Material Expert</b>		
<b>Aspect</b>	<b>Value Percentage</b>	<b>Category</b>
1. Content Quality	62,22%	Valid
2. Presentation	56,00%	Valid Enough
3. Languange	60,00%	Valid
<b>Amount Mean</b>	<b>60.00%</b>	<b>Valid</b>

Based on the table above, the results of the validator's assessment of the media validator response questionnaire is 96,07% which are in the very valid category, so it can be concluded that the student response questionnaire can be used with a little revision. While the results of the validator's assessment of the material validator response questionnaire, namely 60.00% which is in the valid category.

### 2. Validation Result from Teacher and Student

Table 2. Average value from teacher and student

<b>Student</b>		
<b>Aspect</b>	<b>Value Percentage</b>	<b>Category</b>
1. Content Quality	92,48%	Very Valid
2. Presentation	93,52%	Very Valid
3. Languange	92,50%	Very Valid
<b>Amount Mean</b>	<b>92,83%</b>	<b>Very Valid</b>
<b>Teacher</b>		
<b>Aspect</b>	<b>Value Percentage</b>	<b>Category</b>
1. Content Quality	94,29%	Very Valid
2. Presentation	97,14%	Very Valid
3. Languange	100,00%	Very Valid
<b>Amount Mean</b>	<b>97,14%</b>	<b>Very Valid</b>

Based on the table above, the result of the student response questionnaire is 92,83% which is in the very valid category. While the result of the teacher response questionnaire is 97,14% which is in the very valid category.

## Discussion

Assessment of the validity of LKPD products on waste management as a source of student learning that is able to foster an attitude of environmental conservation on Environmental Change materials, is carried out by experts/experts and practitioners. The assessment of each validator refers to the assessment instrument grid. Each validation score obtained from each validator contains 3 aspects of the assessment with 5 categories of eligibility, including  $0 < X < 20\%$  very inappropriate,  $20 < X < 40\%$  not feasible,  $40 < X < 60\%$  quite feasible,  $60 < X < 80\%$  is valid and  $80 < X \leq 100\%$  is very valid. The average results of the validation assessment of the Percentage of LKPD Product Assessment by Material Experts, Media Experts, and Teachers show that each validator gives a value above 60%, which means the LKPD product developed meets the appropriate criteria. Expert 1 has an assessment percentage score of 96.25% (Very Eligible), Expert 2 has an assessment percentage score of 60% (Fair), and the teacher's percentage score is 96.67% (Very Eligible). Furthermore, the average results of the validation assessment of the Percentage of LKPD Product Assessment for each aspect by material experts, media experts, and teachers show that each validator gives a score of  $>60\%$ , for the aspects tested, which means the LKPD product developed meets the criteria. feasible, thus indicating that the development of LKPD environmental change as learning resources for grade X student of SMA Negeri 2 Wonosobo, which is developed is feasible to be used as a learning guide in learning.

## CONCLUSION

Development of student worksheets (LKPD) environmental change as learning resources for grade X student of SMA Negeri 2 Wonosobo is valid.

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