



## **The Preparation of Student Worksheets (LKPD) Based on Guided Inquiry on Straight Motion Material**

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### **ABSTRACT**

This study aims to produce products namely guided inquiry-based LKPD on straight-motion material, knowing that LKPD is feasible to be used as a tool to help students learn, and knowing teacher and student responses to guided inquiry-based LKPD. This research uses the Research and Development (R & D) method with the ADDIE model. The research subjects were 2 expert lecturers to validate guided inquiry-based LKPD, 17 SMP Negeri 3 Lhoknga students, and 2 Physics teachers. Data collection techniques were obtained from teacher interviews, LKP validation sheets, through student questionnaires, and teacher questionnaires. The data analysis technique uses descriptive qualitative. The results of data analysis showed that guided inquiry-based LKPD validation on straight-motion material "was feasible" in the systematic preparation. LKPD can be used by students as student learning aids. Student responses to guided inquiry-based LKPD obtained a percentage of 85% of students giving agreed responses to LKPD. And the teacher's response to this LKPD was 88%. Based on the results of the research conducted, guided inquiry-based LKPD can already be used in the learning process in the classroom.

**Keywords:** preparation, guided inquiry, straight-moving material

### **INTRODUCTION**

In essence the teaching and learning process can be interpreted as an interaction between teachers and students in the scope of the class. Learning is an arrangement of elements of procedures in preparing learning equipment (Hamalik, 2011). In facilitating the implementation of learning, the right way is needed in developing new innovations from students. Media in learning does not make students active, so a media must be able to attract students' attention and provide learning with real experiences for students.

Many learning media exist, such as printed books, LKPD, and so on. In class learning media is needed that makes it easier for students to convey information provided by the teacher to students. This Learning Media can also be a tool for students in finding a problem in physics learning (Sudjana & Rivai, 2011).

### **Problem of Research**

Based on the results of the study, namely the research conducted by Ali (2011) that inquiry learning can improve the ability for junior high school students to work. Other research conducted by Christina & Yovita (2006). In this study it has been explained that with this guided inquiry model it can involve students directly in the learning process, can create student creativity and ideas, reflect and explore students' thinking after studying the LKPD. By looking at the research that has been done, it can strengthen that the preparation of this LKPD is able to improve the knowledge capabilities of students in class VIII of SMP Negeri 3 Lhoknga

By doing this research can determine the feasibility of LKPD seen from the aspects of language, the contents of the LKPD format, learning activities, and student responses to LKPD on straight-motion material.

### **Research Focus**

The right media to use in this study is the Student Worksheet (LKPD). This LKPD contains a summary sheet that is given instructions to be done by students (Andi Prastowo, 2012). LKPD is also a student's tool that can be used as a guide in increasing students' insight into the material to be studied. LKPD also refers to KD and must be in accordance with the curriculum used.

In facilitating the implementation of learning an innovative model is needed. An innovative learning model wherein the process involves students directly to be active in classroom learning, the model must be in accordance with the curriculum used, the model used is a guided inquiry model. This inquiry is articulated as a strategy in learning that provides guidance that can stimulate students to think critically and systematically. (Hartono, 2013). There are several types of inquiry models, one of which is the inquiry model that is appropriate to use in this study, namely the guided inquiry model, namely an inquiry learning model in practice that educators provide guidance or guidance to students in conducting activities in the guided inquiry model (Fathurrohman, 2015 ).

## **METHODOLOGY OF RESEARCH**

### **General Background of Research**

This study uses the Research and Development (R & D) method using the ADDIE model adapted from Thiagarajan, 1974 (Sugiyono, 2015: 37). The research approach used is qualitative research, and the explanation uses a descriptive approach. The product that was prepared was the guided inquiry-based Student Worksheet (LKPD) on straight-motion material.

### **Sample of Research**

The subjects of this study were two lecturers of FKIP Physics who validated the LKPD, 2 natural science subject teachers and 17 eighth grade students in Lhoknga Middle School 3. This research and development is conducted from October 2 to October 14, 2018.

### Instrument and Procedures

Instrument in collecting data consisted of interview sheets, validation sheets, and teacher and student questionnaires. It was a question (test). The technique in collecting data in this study is interviews, documentation, through student questionnaires to see student responses, teacher questionnaires to see teacher responses to guided inquiry-based LKPD. Data collection in this study was to design and determine the feasibility of guided inquiry-based LKPD on straight-motion material.

### Data Analysis

The data analysis technique is the validator assessment of the LKPD and the student response questionnaire analysis. Data analysis using percentage formula (Arikunto, 2011).

$$P = \frac{f}{n} \times 100 \%$$

Information:

P: Percentage number

f: The frequency that the percentage is looking for

n: Number of frequencies / lots of individuals

then after the percentage was obtained, it was then presented in the form of a narrative that showed the quality of guided inquiry-based LKPD which can be seen in the following table.

**Tabel 1.** Interpretation of the percentage of the quality of the LKPD

Criteria	Score
81 – 100	Very Good
61 – 80	Good
41 -60	Enough
21 – 40	Less
0 -21	Not Good

## RESULTS AND DISCUSSION

Based on the results of the study, data was obtained regarding the preparation of guided inquiry-based LKPD. the guided inquiry-based LKPD preparation process on straight-motion material using the ADDIE model. The following is explained about the stages of guided inquiry-based LKPD preparation.

### 1. Analysis Phase

This stage is the initial stage of the inquiry-based LKPD design model. This stage of the needs analysis is done by analyzing the needs needed to make an LKPD. Based on the results of preliminary observations in school and direct interviews with physics teachers it was found that the teacher did not make the LKPD but the teacher used the provided textbooks in the school. The results of interviews with teachers in physics studies found that

the school had not yet used LKPD for practicum which was a guide for educators and students. Practical activities usually teachers only explain directly about work procedures without any stages of instructions so that students are more active in learning activities in class.

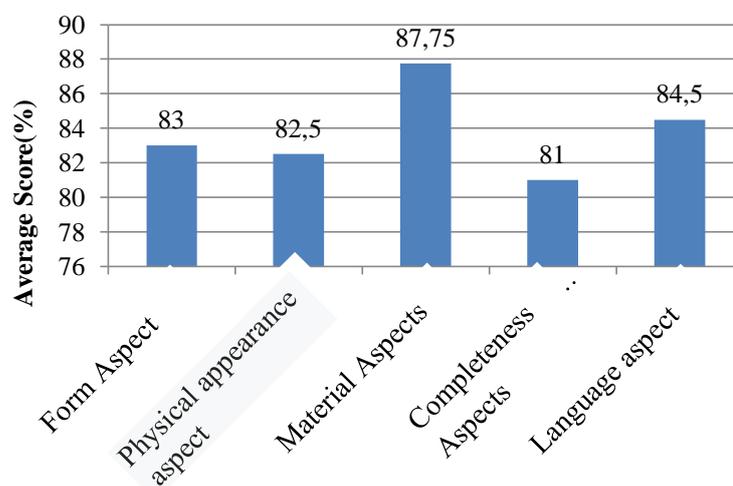
Basic competencies chosen based on 2013 curriculum analysis and interviews by teachers are KD. 3.2 and 4.2. From the analysis of competencies, the objectives to be achieved from the preparation of the LKS are obtained. The material is obtained by selecting the material that you want to achieve based on the KD in accordance with the syllabus.

## 2. Design Phase

The design phase is included in the design phase of making guided inquiry-based LKPD on straight-motion material. At this stage it includes, formulating the objectives of the LKPD, making indicators that are in accordance with the KD and learning material, and the third step designing the needs of the framework in Student Worksheets (LKPD) as needed. When designing the LKPD, there are several components that must be considered, namely the title of the LKPD, the identity of the students, the basic competency, the learning objectives and the contents of the LKPD. Guided inquiry-based LKPD includes the formulation of problems, hypotheses, collecting data, analyzing data, and conclusions (Astuti and Setiawan, 2013).

## 3. Development Phase

This stage is the preparation stage of the LKPD which includes: pre-writing, draft writing, editing, and revision stages. Pre-written results are obtained from the acquisition of materials or references, pictures, and literature as references in the preparation of the LKPD. LKPD draft writing was carried out in accordance with the LKPD structure and included the contents of the LKPD in accordance with the guided inquiry model. then after drafting the LKPD draft. then the LKPD is validated by 2 experts who have experience in LKPD, this validation process includes aspects of format evaluation, the contents of the LKPD, and the language used in the LKPD. can be seen in the following graph.



**Figure 1.** Graph of LKPD Feasibility Validation Results by 2 validators

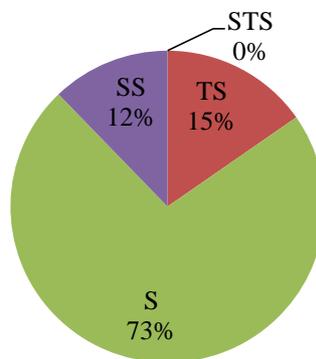
The results of this prensity show that the guided inquiry based LKPD criteria are feasible because the percentage is above 81%. Therefore this guided inquiry-based LKPD has been categorized as very feasible to be tested on students.

**4. Implementation Phase**

In this assessment phase, the stage of implementing the LKPD has been developed. This stage is done in Lhoknga State 3 Middle School. This trial phase was carried out to 17 students. By providing LKPD that has been designed and tested to students whether students are more easily accepting this inquiry-based LKPD.

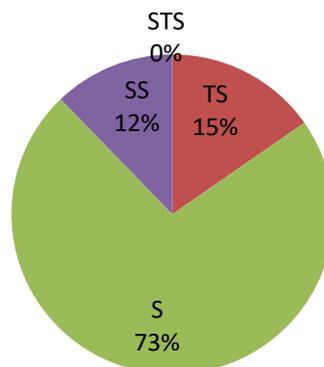
**5. Evaluation Phase**

This last stage is the evaluation phase that is carried out to determine the student and teacher responses to guided inquiry-based LKPD on straight-motion material. The LKPD that has been validated by the LKPD is given to the teacher to be given a score by the teacher whether this inquiry-based LKPD is appropriate for students to use in learning. Can be seen in the following table.



**Figure 2.** Percentage of Teacher Responses

Based on the percentage graph the results of the teacher responses obtained 88% of teachers in the school agreed to the LKPD compiled, in accordance with the guided inquiry model. then the data in the form of student responses are obtained after the learning takes place using guided inquiry-based LKPD. can be seen in the percentage of responses of students after learning.



**Figure 3.** Percentage of Student Responses to LKPD

Based on the results of overall student responses as many as 17 people that on average students approve LKPD as much as 85%. and students responded not as much as 15% of 17 students. This means that guided inquiry-based LKPD has met the eligible criteria to be studied by students as a learning resource. In accordance with the research conducted by Damayanti et al (2013), student responses to LKPD obtained a percentage of 81.23% categorized as agree, then it can be stated in guided inquiry-based LKPD on straight-motion material that students like the LKPD.

## CONCLUSIONS

Based on the analysis of the results of the data regarding this development research, which regarding the preparation of guided inquiry-based LKPD in SMP Negeri 3 Lhoknga is feasible to be used by students. In the aspects that are validated by experts, they meet the eligible requirements of more than 81%. Teacher response to guided inquiry based LKPD was 88%. And the percentage of teacher responses to guided inquiry-based LKPD is 85%. And overall the teacher and students responded positively to the agreed category of guided inquiry-based LKPD.

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