

# Development Worksheet Outside Class Based on Local Wisdom in The Physics Subject For Student XI Class of SMA Barrang Lompo

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**Abstract.** Has conducted research development Worksheet Students outside the classroom based on local wisdom that using the model ADDIE (Analysis, Design, Development, Implementation, and Evaluation) with the purpose of 1) .To determine the validity Worksheet Out-Side Class; 2) To determine the ratings Worksheet Out-Side Class; 3) To know the perception of learners. Development Worksheet Students outside the classroom is done to achieve the learning objectives are the cognitive, psychomotor and affective be achieved in one session of learning. Our preliminary analysis which is the study of local wisdom is a typical food *onde-onde* believed to bring good when it rise on the surface of the boiling water. It is to be studied for trial in outside of the classroom by taking the law of Archimedes to find causes symptoms that occur in *Onde-onde* that float when cooking. The results of the expert validation obtained coefficient r is 1 based on an analysis that shows Gregory valid for use. The results of teacher assessment of the Worksheet Students outside the classroom based on local wisdom gained an average percentage for each aspect is 87.5%, which shows that teachers strongly agree. Results perceptions of learners to Worksheet Students outside the classroom based on local wisdom gained an average percentage for each aspect was 75.8%, showing that the students agree. Based on trial results that do then be an improvement to Worksheet Students outside of the classroom-based local knowledge that is on display aspect and the aspect of material.

## INTRODUCTION

Teaching is an activity of conveying knowledge to others. Whereas, to teach outside the classroom in particular is pursuing activities of teachers to students is done outside of class as the learning activities of students. The learning process is held liable in interactive, fun, motivating the students to actively participate and provide space physical and psychological development of learners [1-2]. The use of worksheets learners in learning can measure three aspects: knowledge, attitudes and skills [1]. Activities outside the classroom requires students to find a conclusion of the existing problems [3]. Worksheets learners consists of two kinds of worksheets learners in the classroom is only limited activities and activities done in the classroom and worksheets for students outside of the classroom that is the activities and not confined to the classroom but can be done outside the classroom. Learning in the classroom can make learners saturated [4]. Learning at this age should be outdoors that provide a special experience for learners [5-6]. Learning outside the classroom is an approach that uses the atmosphere outside the classroom as a learning situation to a variety of games [7].

Worksheet learners outside the classroom to encourage students to learning useful lessons that have been learned in the classroom based on local wisdom. Local knowledge concerning local culture cannot be separated from the area and it is all about perspectives of life of local communities related to confidence, productivity, employment, basic food, creativity, values and norms [8]. Local knowledge is formed as custom local communities and geographical conditions in the broad sense [9-10]. Local knowledge can be defined as a richness of local cultures containing living in character education policy [11].

Local knowledge on the island Barrang Lompo indicate that the area is reflected in the behavior, language and artifacts that can be used in teaching physics information in the form of worksheets students outside class based on local wisdom of Makassar. One of them on the island that became Barrang lompo local wisdom is a traditional food who they called *onde-onde*. Based on an interview traditional leaders, H. Rashid Dg. Tata, it is known that the island is famous with the Barrang Lompo friendly and dubbed the island *a'bulo sibatang* in the 1990s that are still maintained their culture today [12]. People make a tradition every important event to present *Onde-onde's* as a symbol of blessing their fate. *Onde-onde* contains brown sugar sweet symbolized fared and at maturity will rise to the surface of the water symbolized bring blessing. *Onde-onde* do not float on the surface is considered to have a symbol of goodness to be served. Therefore it will be tested to prove the cause of *Onde-onde's* float on the water is boiling.

## RESEARCH

### Research Design

This study is the development of research using ADDIE design namely Analysis, Design, Development, Implementation, and Evaluation [13]. In this research, using qualitative approach. Techniques of data collected performed by the data of interviews to obtain preliminary information, the data validation instrument from experts, then data of teachers rating worksheets student outside classroom-based on local wisdom and data perception of students. The validation instrument used in this study is the sheet of validation Instrument of Student Worksheet Outside class which was adapted from [14], the instrument validation of teacher evaluation sheets, and instrument validation sheet perceptions of learners adapted from Meida (2015).

**TABLE 1.** List of validator's name

No	Name	Department	Validator
1	Dr. Ahmad Yani, M.Si	Head Lector	Experts are assessing student worksheet , materials and instruments of learning outcomes
2	Herman S.Pd, M.Pd	Lecturer	Experts are assessing student worksheet, materials and instruments of learning outcomes.

Validation of student worksheet outside class used to gather comments and suggestions from the validator to be revised.

## ANALYSIS OF DATA

Learning outcomes data analysis results done simply by using descriptive analysis. After that Categorize the learning outcomes of students based on the interval of values obtained. The categorization guidelines contained in the table below

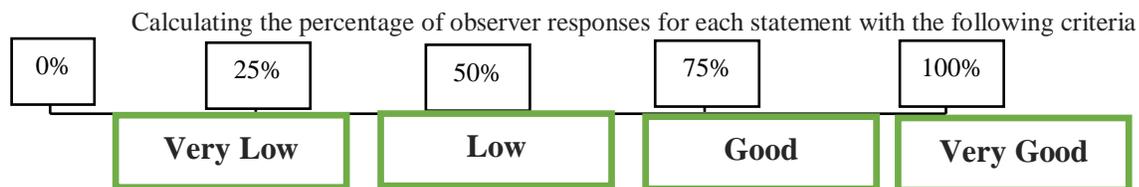
**TABLE 2.** Categorizing of Learning Outcomes

Learning Outcomes Scores	Category of Learning outcomes
5-6	Very low
7-8	Low
9-10	Medium
11-12	High
13-14	Very high

Observations of Students activities done by giving a score based on the following conditions

**TABLE 3.** Coding Respondent

Category	Positive Statement Score	Negative Statement Score
Very Agree	4	1
Agree	3	2
Less Agree	2	3
Disagree	1	4



The analysis used to determine the content validity by two people validator (at the same aspect) is Gregory test as follows:

$$R = \left[ \frac{D}{A + B + C + D} \right] \quad [15]$$

## RESULT AND DISSCUSION

### Analysis

Based on the inventions of researchers at the School Barrang Lompo Makassar, found that the problem that needs to be pursued solution is infrastructure facilities classrooms and school laboratories are inadequate for practical implementation. Need to develop Worksheet Students outside the classroom to replace the practical implementation should be carried out in the laboratory. Based on the analysis of local wisdom that is still ingrained in the community is the presentation of typical foods one of the typical foods are dumplings has its own uniqueness in the public trust. Dumplings people believe will bring good cause in the process of cooking, *Onde-onde* immature will sink to the bottom of the pot and after cooking will come to the surface. This is what makes the island community Barrang Lompo adhere separate trust the dumplings as a favor against fate. Based on the analysis in the process of making dumplings are physics that will be proven by the fluid material. These symptoms will be evidenced through worksheets learners outside the classroom.

### Design

Selection was done by following the format worksheet of Students established by Kemendikbud which format PSG UNM 2015. These formats contain work procedures investigation refers to a device that includes Syllabus Learning, Learning Implementation Plan, Book Reading Students owned. The Worksheet learners (LKPD) outside class consists of Competency basic, introductory material, goals, formulation of the problem, hypothesis, tools and materials, work step, observations, data analysis, discussion, conclusions and questions. The design seen in Figure 1.

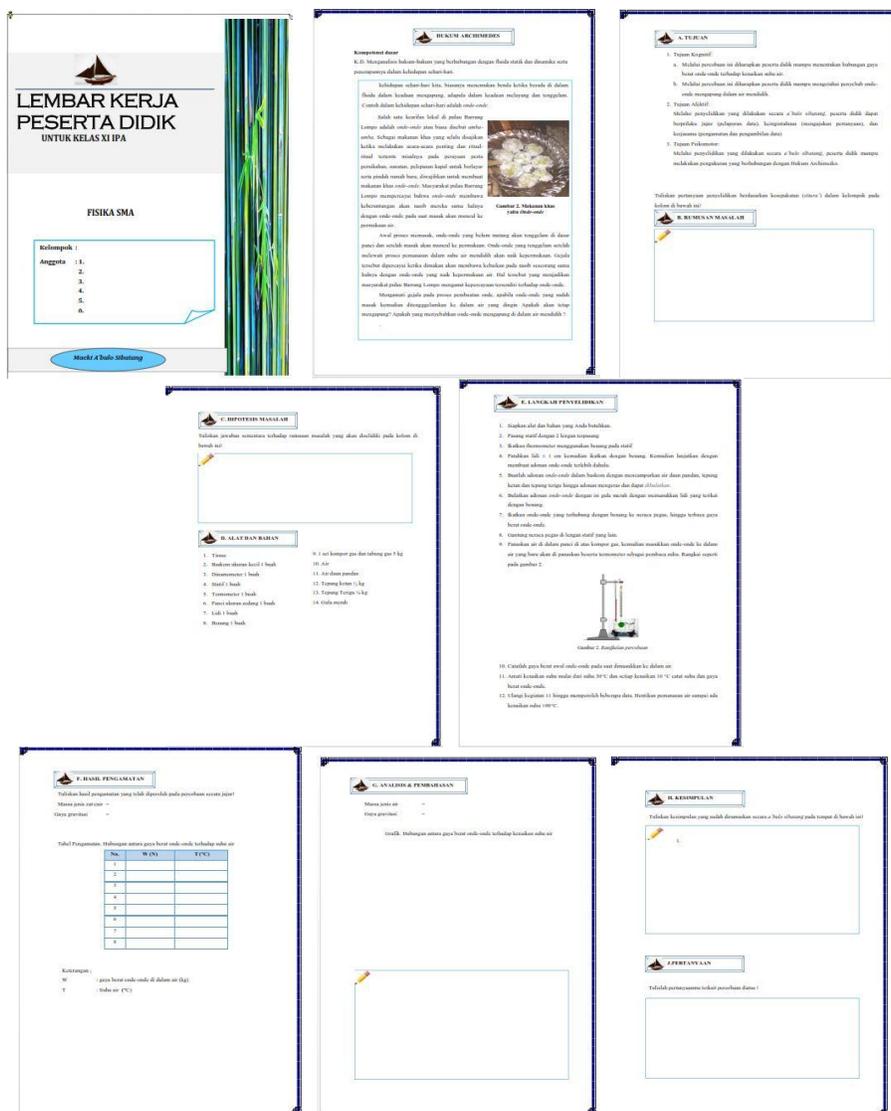


FIGURE 1. Worksheet of Student Design

## Development

The development phase aims to produce a learning device which has been revised based on the assessment of the experts. The steps in the development stage as follows:

1. Table below shown Validation result of Student worksheet outside class

TABLE 4 Validation result of student worksheet outside class percentage

Nu.	Component	Percentage %
1	Matter	78
2	Activity	81
3	Language	84
4	Time	75
	Average	80

## 2. Validation result of teacher ratings sheet and perception sheet

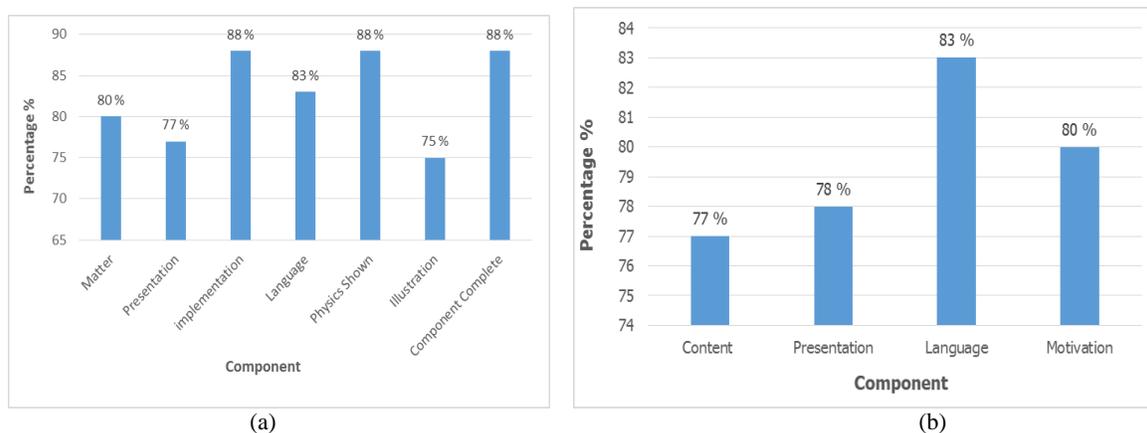
**TABLE 5** Validation result of student worksheet outside class percentage

Nu.	Component	Percentage %
1	Instruction	88
2	Language	78
3	Content	83
	Average	83

Based on the statements of every aspect of the validity of the test results obtained by the analysis Gregori that the statement is valid and the validity coefficient ( $r$ ) is 1.0 which indicates that on every aspect of the overall valid.

## Implementation

At the implementation stage is the stage of the tested products have been developed based on the results of the validation by the experts. **FIGURE 2** below shows analysis result of implementation student worksheet outside class



**FIGURE 2** (a) Percentage of teacher ratings, (b) Percentage of Students perception

Based on the analysis of the teacher ratings and the student perception, found that on any criteria, the majority of learners categorized in very well criteria. Based on the results of the analysis of the overall assessment of teachers showed good response to a worksheet learners are implemented outside the classroom and based on local wisdom. On the content of implementation, physics shown and complete component showed an enthusiastic teacher to fill in worksheets learners. The analysis results perception learners showed excellent results on the language component and motivation component. The results to show a good response from students of the implementation of the student worksheet.

Based on the analysis, this is in line with the opinion which says that learning with worksheet outside class is able to learn to use the student worksheet an important part in supporting the management of learning and skills of learners [16-17]

## Evaluation

On the development of learners' worksheets obtained results of the evaluation of the test results. The first need for additional study material in a worksheet learners outside the classroom. The second, need to add content on a worksheet indigenous learners.

## CONCLUSION

Based on this study showed a valid learner worksheets used in high school science class IX Barrang Lompo very well to every aspect. Assessment perception of teachers and learners showed an excellent response to every aspect of the Worksheet learners outside the classroom based on local wisdom.

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