

# Development of LKPD Based on Local Wisdom to Improve the Learning Outcomes of Grade 6 Students at SDN 040460 Berastagi

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**Abstract.** The research objectives to be achieved are the process of making LKPD based on local wisdom, the level of validity, the effectiveness of LKPD implementation of LKPD based on Local Wisdom in increasing student interest in learning and the use of LKPD in improving learning outcomes. The results of the research obtained are that the LKPD that has been developed has been very valid (very feasible) to use and does not require any more improvement according to BSNP standards, with an average calculated value of 4.93. The increase in student learning outcomes using LKPD based on local wisdom was higher than the learning outcomes of students who used conventional books, namely 68.35% > 23.55%. The results of hypothesis testing student learning outcomes obtained a calculated price of  $t_{tabel}$ , namely  $30.04 > 1.708$  with a degree of significance ( $\alpha = 0.05$ ) so that  $H_a$  was accepted.

**Keyword:** Thematic Learning, LKPD, Local Wisdom, Learning Outcomes, Interest in Learning

## 1 Introduction

Education is a form of learning process that is integrated with the stages and concepts taught by the teacher to find and synthesize science and knowledge into science. In education, learning is a very common process with a form of learning. The learning process is a gradual process that must be supported from one's surroundings. In the process, learning is done by observing, understanding, and living. Thus, the results in these stages are used as knowledge that is conditioned by the construction of understandable knowledge.

The 2013 curriculum that is currently being implemented emphasizes learning with high-level and creative thinking processes. The high-level learning process is introduced from an early age so that in the process students not only know, but can observe, analyze and try or make something that can be used by the wider community.

The key to a structured and directed learning process is to comply with and develop learning signs that are aligned with the state of the school environment. In addition, the need for school facilities and infrastructure in the form of compulsory reading books and exercise books is also an important reference in the success of learning methods. Included in these important needs is the Student Worksheet (LKPD). In general, the LKPD obtained by students focuses more on the

facts of the field situation of the book publisher or the author of the exercise book. Coupled with the teacher rarely gives examples of questions that are developed and harmonized with the environmental conditions of students. Thus, students do not get an overview of the material being asked in real terms in accordance with the student's environment.

Local wisdom is one of the characteristics of a nation in showing identity and life. Indonesia itself has different local wisdom and is adapted to regional conditions, adaptation processes, and human experience to survive. Indonesia is an archipelagic country that has high ethnicity and local wisdom. Thus, the diversity of local wisdom makes it one of the wealth that should be studied. In this context, an understanding of local wisdom needs to be emphasized.

Based on the identified issue, the problem of this research is:

Are the Letters of the Clan Clan Policy League based on a local sub theme building a society of prosperity that has developed according to the BSNP standard? Two. Is the Letters of the Clairvoyant Clan of Local Arabic theme that built a society of prosperity that has developed can increase student interests? 3. Are the League of Editor-based Editor-based Cub with Sub Theme Building a health society developed can increase student studies? The Advised Advisors' Law is one of the tools or test forms given to students by teachers by way of testing the results of the learning results by taking care of material adjustments. The editor's Law Registration was given with a few questions that the students had to have had to give the matter what they had to give the students to answer the matter in accordance with the experience of learning that he had.

The development of the Student Worksheet is of course based on the part of the student material submitted by the teacher to the students. Part of the learning material must produce Student Worksheets (LKPD) so that it is one of the learning materials that can be provided and arranged by the teacher. Prastowo<sup>1</sup> reports that LKPD is a printed learning material in the form of sheets of paper containing modules, summaries, and guidelines for implementing learning tasks that must be completed by teaching participants, which refers to predetermined targets. That way, the LKPD itself is a summary file and a summary of the modules that have been given and there is an assignment as a form of developing the LKPD itself.

Adaptation process that prioritizes the use of environmental recognition. Humans basically have mindsets and thoughts based on human experience with their environment. Culture and local wisdom are very close and of course produce external relationships between humans and nature, between humans and reciprocal relationships that prioritize the process of understanding each other.

Wardiyanta, et al<sup>2</sup> reported that local wisdom is the use of creativity or local insight to improve local communities, thus creating new tools of insight. Local virtues can be classified into 4

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<sup>1</sup> Prastowo, Andi: *Panduan Kreatif Membuat Bahan Ajar Inovatif*. Yogyakarta: Diva Press. Pp.210 (2012)

<sup>2</sup> Wardiyanta, dkk *Pemanfaatan Potensi Alam dan Kearifan Lokal Untuk Mendukung Promosi Pariwisata Kreatif Sleman Yogyakarta*. Prosiding (online) [https://cc.bingj.com/cache.aspx?q=Pemanfaatan+Potensi+Alam+dan+Kearifan+Lokal+Untuk+Mendukung+Promosi+Pariwisata+Kreatif+Sleman+Yogyakarta&d=4805471657984194&mkt=en-SG&setlang=en-US&w=QP\\_fFU-LDs6JRqgCdOKJfaR7w-vrjsQU](https://cc.bingj.com/cache.aspx?q=Pemanfaatan+Potensi+Alam+dan+Kearifan+Lokal+Untuk+Mendukung+Promosi+Pariwisata+Kreatif+Sleman+Yogyakarta&d=4805471657984194&mkt=en-SG&setlang=en-US&w=QP_fFU-LDs6JRqgCdOKJfaR7w-vrjsQU), diakses pada tanggal 24 Oktober 2021), 2020

types: 1) things that are abstract and related to beliefs, 2) abilities that save people, 3) structures of insight, 4) sources of thought. The Karo people are one of the people who inhabit the highlands between Mount Sibayak and Mount Sinabung in the province of North Sumatra. Agricultural land in Karo Regency is very suitable for vegetable and fruit types. Moreover, these vegetables and fruits are important agricultural products of the Karo people, which are consumed by the people of North Sumatra.

The people of Berastagi are almost entirely Karo people who still carry out the Karo cultural system in their daily lives. The use of the Karo language, customs such as wedding ceremonies, deaths, births and celebrations of Karo cultural festivals can still be found in Berastagi City. Discovering the local history of Karo Culture can be found at the Karo Heritage Museum in Berastagi City. Community organization systems, arts, agricultural systems, etc. can be used as material for knowledge and skills in the learning process that takes place in schools. Local wisdom in the city of Berastagi in the development of this research focuses on the cultural results of the Karo community in the city of Berastagi and its surroundings. The local wisdom discussed is about the potential that protects the community including the potential that protects the Karo community starting from customs, folklore, marriage systems, split eye systems, technology systems and social systems and organizations that exist in the Karo community in Berastagi City and its surroundings. The body of knowledge in the Karo community in the surrounding Berastagi city refers to knowledge of the family system, survival, arts and organizational social systems. The process in the body of knowledge that has been obtained will become intellectual capital or knowledge that is applied by the people of Berastagi City to become a discourse of knowledge.

The application of local wisdom in the implementation of the learning process in elementary schools can be developed and adapted to the KI/KD that has been regulated by the government. Teachers are very active in the development of teaching materials such as LKPD. The creativity and innovation of teachers in learning methods and relying on information systems that are easily accessible and accessible by teachers to students by utilizing culture. The form in a culture that is integrated with local wisdom is made with an understanding that is easy and can be understood by students. Does not eliminate the essence of KI/KD in learning and becomes a strengthening of regional education.

With the existence of learning in education that is integrated with local wisdom, it does not leave the essence of the core learning material. This will also be based on the development of Student Worksheets based on local wisdom as a form of strengthening our nationalism in the nation and state.

### **1.1 The Nature of Learning Results**

In carrying out the learning process, of course there are hopes and desires to be achieved. In this case, of course, the main thing to do is to provide learning strategies and the application of models and forms of tests by showing the learning outcomes expected by the teacher to students. According to Supardi, et al <sup>3</sup> states that the learning outcomes are cognitive, affective or psychomotor competencies or special skills that are achieved or understood by students after exploring learning activities. Learning outcomes are student attitudes as a result of changes after

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<sup>3</sup> Supardi: Tes & Assesmen di Sekolah Dasar dan Madrasah Ibtidaiyah. Jakarta: Hartomo Media Pustaka. Pp:12-17 (2013)

learning. This transformation is attempted in the way of learning in order to achieve learning objectives. Transformation of people's attitudes, the impact of learning activities is not singular, each way of learning affects the transformation of attitudes in students, related to the desired transformation, conformity with learning objectives. Learning outcomes are skills that students acquire when they gain experience from these activities.

The process of changing the desired in terms of both cognitive, affective and psychomotor depending on the learning needs of students who are expected by the teacher to be achieved. Of course, achieving these learning outcomes requires a learning process and an assessment of the expected learning. Nana Sudjana<sup>4</sup> explains that method is an activity that students try to achieve teaching goals, on the contrary, the results of practice are skills that students have after they get experience from the learning.

Thus, the learning process in Thematic learning in Elementary School Thematics in achieving the desired learning outcomes depends on concepts, methods, strategies, learning models and forms of assessment or assessment that measure cumulatively in order to obtain learning outcomes that are adjusted to educational standards at the unit level. elementary school education. By providing the form of learning outcomes, of course departing with Bloom's taxonomy thinking in terms of achieving learning outcomes based on the Cognitive, Affective and Psychomotor domains.

The process of learning outcomes can be measured by measuring learning outcomes. Supardi<sup>5</sup> states that the measurement of learning outcomes is to compare reality or measurement objects to values in order to ensure the amount of quality or amount of achievement of learning objectives by teaching participants. Activities related to measuring learning outcomes are based on the realm of Bloom's taxonomy of thought in the learning achievement process.

Based on Piaget's theory, grade VI Elementary School children aged 7 (seven) to 11 (eleven) or 12 (twelve) years are at the stage of Concrete Operations development. At this stage, children develop skills to maintain, classify carefully, carry out ordering, and overcome value schemes. The way the child's view in this step is shown in real events that can be observed by the child.

In developing the current curriculum, of course, elementary schools generally provide a revised 2013 curriculum in accordance with the needs of educators and the development of the times which focuses on the need for technology that is tailored to the abilities of students at each level. In terms of the development of a renewable curriculum that is based on the state of the pandemic and the need for more renewable education, it demands the latest output in terms of providing a driving curriculum. Of all these curricula, of course also based on the school and home environment as a benchmark for student learning in the process of observing, classifying and providing an evaluation process in terms of social life both theoretically and in practice.

Local wisdom is one manifestation in Social Sciences. This can be actualized by the process of adaptation, community habits which include mindset, family, environment and economic

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<sup>4</sup> Sudjana, Nana: *Penilaian Hasil Proses Belajar Mengajar*. Bandung, PT Remaja Rosda Karya. Pp.28 (2018)

<sup>5</sup> Supardi, *Op Cit*, pp 17

problems. Problems in human life to the environment are part of thematic learning. Thus, in strengthening the material taught in elementary schools, emphasis and understanding of thematic learning is developed by making LKPD teaching materials as a form, process and implementation of interest and learning outcomes obtained by students.

In improving learning products by paying attention to development models in order to determine their quality, the use of learning material development models in a systematic way and in accordance with the principle will ensure the quality of the content of learning materials. The form of development is intended as a conceptual design in an effort to increase the role of the existing form or the latest form formed, through the accumulation of learning parts that are thought to be able to improve the quality of achievement.

However, among the models used in this study, Borg & Gall. According to Borg & Gall, there are 10 steps for implementing research and development strategies. The 10 steps are described as follows (Sukmadinata, 2008): 1. Research and information collecting 2. Planning (Planning) 3. Develop Preliminary From Product (Development of product drafts) 4. Preliminary Field Testing ( Initial trial). 5. Main Product Revision (Revising the test results). 6. Main Field Testing 7. Operational Product Revision 8. Operational Field Testing (Operational field testing). 9. Final Product Revision 10. Dissemination and implementation.

In determining the learning outcomes, the main factor that becomes the benchmark for student success is the ability of teachers to develop teaching materials prepared by loading Student Worksheets as a benchmark for student success in the classroom. With the provision of the Student Worksheet, the teacher must be able to provide directed and focused learning materials that are in accordance with the syllabus so that the development of the Student Worksheet can be packaged properly. With things based on local wisdom, students become richer in information and can further explore the learning outcomes obtained. The assumption obtained in the learning outcomes is to see the effectiveness in answering the questions of the Student Worksheet so that the questions can be developed properly and correctly.

## **2 Method**

This type of research is research and development (Research and Development). R&D research is a method used to improve and validate learning products. The results of development research are not only related to developing existing products but also creating insights or responses from practical efficient cases. In this study, what will be developed is LKPD based on local wisdom to increase students' interest and higher-order thinking skills. The final product is evaluated for feasibility and effectiveness so that this research can produce a product, namely Student Worksheets based on local wisdom that can be used by teachers, students and other parties who need it. This research was conducted at SD Negeri No. 040460 Berastagi. The research was carried out in an educational program in Semester 2 of 2022. The subjects in this research were students of class VI semester II, totaling 2 local students in one school, namely SDN 040460 Berastagi, totaling 25 students for class VI A and 26 students for class VI B.

**Table 1.** Data for Class VI Elementary Schools in Berastagi Region

School	Class	Number of Male Students	Number of Female Students	Total
Junior High School Of 040460 Berastagi	VI A	13	13	26
	VI B	13	13	26

The object of this research is the development of local wisdom-based Student Worksheets on the theme "Towards a Prosperous Society" in the second sub-theme on "Building a Prosperous Community" to increase student interest in learning and learning outcomes.

This research is development research transformed from the Borg and Gall development learning forms. Development research is used to create specific outcomes and test the effectiveness of the resulting outputs. The product that is made in this research is a Student Worksheet based on Local Wisdom at SDN 040460 Berastagi. Previously, Student Worksheets used in schools were conventional Student Worksheets which were general in nature which sometimes did not match the facts that occurred in a particular area. While the Student Worksheets that will be developed in this study are Student Worksheets that adapt to local wisdom

The research design was carried out in research on the development of Student Worksheets based on Local Wisdom. Research on Student Worksheets based on Local Wisdom begins with the development of innovative teaching materials. Then standardize the Local Wisdom-based Student Worksheet which was developed using a questionnaire in accordance with the BSNP standard which was validated by the lecturer. In the final stage, Local Wisdom-based Student Worksheets were distributed to students, to test student motivation, responses to Local Wisdom-based Student Worksheets, and the effectiveness of using the innovative Local Wisdom-based Student Worksheets.

In conducting this research, a limited trial was applied to sixth grade elementary school students. Students participate in learning activities using the Local Wisdom-based Student Worksheets that have been developed.:

**Table 2.** Research Design

Class	Pre-test	Treatment	Post-Tes
Experiment (trial)	T <sub>1</sub>	X <sub>1</sub>	T <sub>2</sub>
Control	T <sub>1</sub>	X <sub>2</sub>	T <sub>2</sub>

Information:

X<sub>1</sub> = Learning using Student Worksheets based on Local Wisdom according to the 2013 curriculum

X<sub>2</sub> = Learning using Conventional Student Worksheets

T<sub>1</sub> = Pre-Test (Pre-Test)

T<sub>2</sub> = Final test (Post Test)

Research Techniques The steps for collecting data carried out in this study, namely the development of LKPD based on local wisdom will be presented in the following table:

**Table 3.** Data Collection Steps

No	Activities	Method	Instrument
1	LKPD design validation based on Local Wisdom	Assessment questionnaire addressed to Media Expert Lecturers and Material Experts as Expert Validators	LKPD Media Assessment Rubric Questionnaire
2	Trial is limited to students and teachers	Cognitive ability test based on students' local wisdom and teacher's questionnaire	Cognitive ability test based on local wisdom on students' ability to learn. The LKPD eligibility questionnaire is reviewed from the teacher's assessment.
3	Implementation of LKPD based on Local Wisdom	Cognitive test based on local wisdom	Pre Test and Post Test

The instruments used in this research include: 1. Cognitive ability test based on local wisdom as much as 2 times the initial test and the final test. 2. Expert judgment sheet, in order to get evaluation and input or recommendation from construction, didactic and technical experts on LKPD based on Local Wisdom.

## 2.1 Validity

According to Sugiyono<sup>6</sup>, he explained that validity is the level of accuracy between the information that takes place on the research subject and the power that can be reported by researchers. According to Sugiyono, the validity test can use the Product Moment Correlation method as follows:

Information:

To interpret the magnitude of the correlation coefficient is as follows:

$R_{xy} = 0.00$  invalid

$0.00 < r_{xy} < 0.20$  very low validity (poor)

$0.20 < r_{xy} < 0.40$  low validity (less)

$0.40 < r_{xy} < 0.60$  moderate validity (enough)

$0.60 < r_{xy} < 0.80$  high validity (good)

$0.80 < r_{xy} < 1.00$  very high validity (very good)<sup>7</sup>

<sup>6</sup> Sugiyono: Statistika Untuk Penelitian. Bandung, Alfabeta. Pp:207 (2019)

<sup>7</sup> Arikunto, Suharsimi. (2012). Prosedur Penelitian. Jakarta: Rineka Cipta, pp 89

## 2.2 Reliability

According to Sugiyono<sup>8</sup> states that reliability is a series of measuring and measuring equipment that remains consistent if the measurement is carried out repeatedly. The purpose of the test reliability experiment is to measure the level of confidence and the stability of the test in measuring information. Test reliability experiments can be used with the Cronbach alpha method as follows:

$$r_{11} = \frac{k}{k-1} \left( 1 - \frac{\sum \sigma_p^2}{\sigma_t^2} \right) \quad (1)$$

Information:

$r_{11}$  : Instrument Reliability

$k$  : Number of questions

$\sum \sigma_p^2$  : Number of variants of questions

$\sigma_t^2$  : Total variance

To make an interpretation of the magnitude of the correlation coefficient is as follows:

0.00 <  $r_{xy}$  0.20 no reliability

0.00 <  $r_{xy}$  0.20 very low reliability (poor)

0.20 <  $r_{xy}$  0.40 low reliability (less)

0.40 <  $r_{xy}$  0.60 moderate reliability (enough)

0.60 <  $r_{xy}$  0.80 high reliability (good)

0.80 <  $r_{xy}$  1.00 very high reliability (very good)

## 2.3 Difficulty Level

The level of difficulty according to Arikunto<sup>9</sup> states that the number that represents the difficulty or ease of a question is known as the difficulty index (difficulty index). This difficulty index ranges from 0.00 to 1.00. This difficulty index represents the degree of difficulty of the questions. Questions with a difficulty index of 0.0 indicate that the question is very difficult, whereas an index of 1.0 indicates that the question is very easy

## 2.4 Grain Difference

The item discriminating power according to is the ability of the questions in separating high-ability students from low-ability students

The formula for distinguishing power according to Arikunto<sup>10</sup> is as follows:

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<sup>8</sup> Sugiyono (2015). *Metode Penelitian Kombinasi (Mix Methods)*: Bandung: Alfabeta. Pp 125

<sup>9</sup> Arikunto, Suharsimi. *Prosedur Penelitian Suatu Pendekatan Praktek*. Jakarta: Rineka Cipta. pp.223 (2012)

<sup>10</sup> Arikunto, Suharsimi. *Op.Cit*, pp: 228



$$D = \frac{BA}{JA} - \frac{BB}{JB} = PA - PB \quad (2)$$

Where:

J = total test participants

BA = total lower group participants with correct answers

BB = total participants in the upper group with correct answers

JA = total group participants

JB = total participants in the lower group

PA = proportion of upper group participants with correct answers (P as index of difficulty)

PB = proportion of lower group participants with correct answers with discriminating power classification

D = 0.00 – 0.20 bad

D = 0.20 -0.40 enough

D = 0.40 – 0.70 good

D = 0.70 – 1.00 very good

The results of calculations using the above method can describe the level of question ability in separating between teaching participants who have mastered the module. The criteria for each question are as follows:

Negative – 9% = very bad (discarded)

10% - 19% = bad (should be discarded)

20% -29% = quite good (revised)

30% -49% = good

50% and above = very good

30 whether or not the choice or function of the dictator is working

### 3 Result and Dicussion

The data analysis technique used to analyze the results of the LKPD validation is descriptive qualitative, namely by looking at the feasibility of the LKPD from the results of the validation instruments used to assess the LKPD products. This questionnaire is used to collect validation data from validators consisting of validation, construction, didactic and technical experts. The results obtained will be used as guidelines for improving LKPD and analyzing the LKPD that has been prepared. Developed teacher assessment questionnaires and student interviews obtained from individual, small group and field group tests on the appearance and presentation of the developed LKPD. According to Sugiyono <sup>11</sup> stated that the statistical method used to analyze sample data and the results applied to the population. Inferential statistics are used for hypothesis testing.

The data analysis technique used to analyze the results of the LKPD validation is descriptive qualitative, namely by looking at the feasibility of the LKPD from the results of the validation of the instrument used to start the LKPD product. This questionnaire is used to collect validation

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<sup>11</sup> Sugiyono (2015). Metode Penelitian Kombinasi (Mix Methods): Bandung: Alfabeta, pp 148

data from validators consisting of validator experts consisting of construction, didactic and technical validation experts. The results obtained are used as guidelines for improving the LKPD and analyzing the level of validity of the developed LKPD.

Individually, student learning outcomes are obtained by the following equation:

$$NP = \frac{(\text{score obtained by students})}{\text{maximum score}} \times 100\% \quad (3)$$

Where :

NP = Percentage value sought

Criteria:

0% PPH ≤ 70% Students did not complete

75% PPH 70% Students complete

### 3.1 Research Subject and Object

**The Process of Making LKPD Based on Local Wisdom.** Development research to produce products in the form of LKPD based on local wisdom on the theme "Towards a Prosperous Community" in the sub-theme "Building a Prosperous Community" is carried out in several stages. According to the Borg and Gall development model. So, the stages carried out are Research and Information Collection, Planning, Develop Preliminary Form of Product, Preliminary Field Testing, Main Product Testing, Final Product, Dissemination and Implementation. In this stage, only 5 stages will be carried out.

The results of the research are descriptions related to the data obtained from the research that has been carried out. The data presented in this research consists of: (1) Analysis of LKPD based on local wisdom that has been developed with a questionnaire, (2) Validation by lecturers on LKPD based on local wisdom that has been developed, (3) Description of validation The question instrument used for the limited test is (4) a description of students' interest in learning and, (5) a description of the learning outcomes.

**LKPD Analysis of Validity Results as Media and Teaching Materials.** This study begins by analyzing the LKPD used as teaching materials for publishers A and B for the 2013 curriculum in elementary schools in general, especially in Berastagi and Karo Regency. The LKPD analysis was carried out based on a modified BSNP assessment questionnaire that had been validated by an expert validator. The analysis of book publishers A and publisher B consists of assessing the feasibility of content, language, presentation and graphics. The assessment is done by giving a score using the following criteria: 5 (very good), 4 (good), 3 (poor), 2 (not good), 1 (very not good).

Based on the data in general, it can be identified that the deficiencies contained in LKPD publisher B have similarities with publisher A's book, which lies in the aspect of presentation feasibility, which consists of less specific learning objectives to be achieved. Improvements are also very much needed from the aspect of presenting the basic theory, introduction to learning through problem questions, and less integration of learning models in its implementation. In contrast to LKPD publisher A, which has a valid content validation level, while publisher B's book is still within a fairly valid range, such as the aspect of language eligibility. Both aspects of the assessment can still be improved to be very valid such as the graphic aspect through an innovative development process.

The most important thing that becomes the main consideration in developing LKPD is based on problems that arise during observations when teachers and students use LKPD from publishers A and B, namely students are not actively involved in the investigation and exploration process in accordance with the character of learning which requires students to Actively analyze the natural phenomena that occur

**LKPD Development Based on Local Wisdom.** After analyzing the LKPD which is used as a learning guide, then the development of LKPD based on local wisdom is carried out. The reference used as consideration for the development of this LKPD is the weakness of the LKPD that has been analyzed previously.

The LKPD development stage is carried out by reviewing the basic competencies and indicators as well as the target objectives of the even semester VI class theme according to the revised version of the 2013 curriculum syllabus. After that, learning topics that support learning objectives are designed and developed from conventional LKPD.

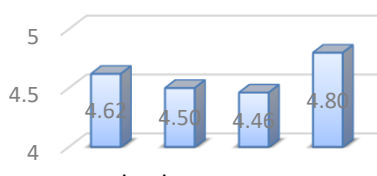
The innovation made in the development of this LKPD is to integrate the LKPD with local wisdom in the school area that is the target of the research. This innovation was carried out to help students better understand the concept through local wisdom learning. In accordance with the problems that have been found through the analysis of publisher books A and B. This LKPD is also compiled by adding introductory pictures for each theme/topic so that the form is attractive in order to increase students' interest in learning the learning material.

#### **LKPD Analysis Based on Local Wisdom**

Local wisdom-based LKPDs that have been developed in accordance with the 2013 curriculum are then standardized or validated using an assessment questionnaire that has been modified in accordance with the needs of the LKPD assessment from the National Education Standards Agency (BSNP) eligibility questionnaire by a basic education lecturer at the State University of Medan (UNIMED).

The assessment of LKPD based on local wisdom is based on the responses of respondents (teachers and lecturers) to four aspects, namely the feasibility of content, language, presentation and graphics with criteria 1 = very bad, 2 = not good, 3 = good enough, 4 = good, 5 = very good. The results of the responses of lecturers and teachers to LKPD based on local wisdom class VI are as follows.

**LKPD Validation Results Based on Local Wisdom by Lecturers.** The results of the assessment of the LKPD based on local wisdom by a lecturer at the State University of Medan which has been developed for class VI SD for even semesters can be seen in the diagram in Figure 1



**Fig. 1.** The results of the validation of the feasibility of LKPD based on local wisdom that have been developed in accordance with the BSNP by the Lecturer

From the results of the validation of the LKPD feasibility test based on local wisdom by the lecturer, it can be observed that the validation range for each aspect of the feasibility assessment is in accordance with the BSNP questionnaire. For the feasibility of the content, the average value obtained is 4.62, for the feasibility of the language obtained an average of 4.50, for the feasibility of the presentation an average of 4.46 is obtained, and for the feasibility of the graphic the average result is 4,80. Respondents also submitted recommendations, such as clarifying the quality of the images in accordance with the theme being studied. Based on the results of the validation based on the feasibility of content, language, presentation and graphics, it was stated that the LKPD based on local wisdom for sixth grade elementary school even semesters was very valid and very feasible to be implemented in a limited trial of students.

**Data Analysis of Research Instruments on the Implementation of LKPD Effectiveness Based on Local Wisdom.** Before carrying out the research, a research test instrument was first tested which aims to determine the level of validity, reliability, level of difficulty and discriminating power. This trial was carried out on sixth grade students at SDN 040460 Berastagi.

From the testing of the test instrument, it is known that:

**Test Validity.** Of the 40 questions tested, there were 23 valid questions and 17 invalid questions. Valid questions have the probability of being used as instruments in research, but invalid questions cannot be used as tools in research. The questions used in this research are 20 questions from valid questions, on the other hand 3 questions are not used because the questions have met each indicator.

**Test Reliability.** A reliable test is used to obtain the stability of the measuring instrument, so if the measuring instrument is used it always produces data that does not change. After selecting 23 valid questions to be used as research instruments, the reliability experiment was then carried out. All questions were tested for reliability using the Kuder and Richardson 20 (KR-20) test, obtained  $r_{count} = 0.71$  of the questions that were categorized as valid where  $r_{table} = 0.325$

**Difficulty Level.** A good question is a question that is not very difficult and not very easy. From the calculation of the level of difficulty (Appendix 20) there are questions that are declared heavy ( $P=0,00-0,30$ ), moderate ( $P=0,31-0,70$ ) and easy ( $P=0,71-1,00$ ). There are 2 of the 20 questions used, which are declared difficult, 14 questions are declared moderate, and 4 questions are declared difficult

**Differential Power Test.** Of the 20 questions used as research instruments, there is 1 question with very good discriminating power, 8 questions with good discriminating power and 11 questions with sufficient discrepancy.

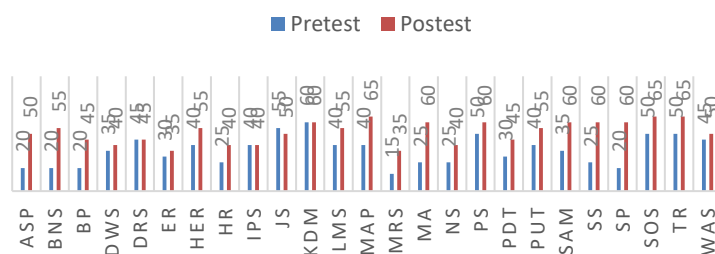
**Distractors.** Of the 20 questions used as research instruments, there are answer choices that must be replaced, including answer choice A on item number 12 and answer choices A and D on item number 22. Based on the analysis of these instruments, it can be seen the criteria for the questions used as research instruments as shown in Table 4.1. the following:

**Learning Outcome Hypothesis Testing.** After getting the results if the data is normally distributed and homogeneous, then hypothesis testing is carried out using statistical tests, namely one-party t-test (right-hand test) through the use of SPSS independent t-test. This

experiment is used to obtain information whether the hypothesis in this research is accepted or rejected. The test parameter if  $t_{count} > t_{table}$  then the alternative hypothesis ( $H_a$ ) is accepted and the null hypothesis ( $H_0$ ) is rejected

From the hypothesis test that has been carried out, it is obtained that the price  $> t_{table}$  is  $8.18 > 1.708$  with a significance level ( $\alpha = 0.05$ ) so that  $H_a$  is accepted and it can be concluded that if the LKPD based on local wisdom is more in the learning process, it will affect higher student learning outcomes. compared to the use of conventional LKPD.

**LKPD Implementation in Improving Student Learning Outcomes.** The results of the limited trial of student learning outcomes showed that there were significant differences in the data acquisition of students' pretest and posttest scores, as shown in Figure 4.13 below for the control class:



**Fig. 2.** Distribution of Gain Pretest and Posttest Control

Overall, the average pretest score for the control class was 35.20 and the average posttest score was 51.60. Meanwhile, for the experimental class, the difference in the acquisition of pretest and posttest scores can be seen based on Figure 4.14 below.

The average pretest value of the experimental class is 33.60 and the average posttest price is 78.60. Based on the acquisition of these scores, it can be identified a significant difference in the improvement of learning outcomes. The increase in learning outcomes in the experimental class is 0.68 or 68.35% so that it meets the moderate criteria, where the gain price is  $< 0.7$ , while the increase in learning outcomes for the control class is 0.23 or 23.55% with low criteria, where gain  $< 0.3$ .

The development of LKPD based on local wisdom for learning the theme towards a prosperous society for even semesters has been successfully developed in accordance with the revised 2016 syllabus. The assessment of the LKPD based on local wisdom that has been developed in this study was carried out using a modified BSNP book assessment questionnaire in the form of LKPD assessment. The basis for developing LKPD based on local wisdom is based on the results of the analysis of the teacher's perception of the LKPD which is used as a guide to carry out learning from two different publishers, where students are not directly involved in the exploration and investigation process which is the main character of learning.

Furthermore, in the assessment of LKPD based on local wisdom, the aspects assessed are the feasibility of content, presentation, language and graphics. Based on the results of the assessment that has been carried out, the average LKPD based on local wisdom is 4.93 which means it is very valid (very feasible) so that it does not require further revision. This value is higher than the conventional books that have been analyzed, namely publisher A with a

validation result of 3.38 with quite valid criteria and does not require improvement and publisher B with a validation assessment of 3.25 with the same criteria, which is quite good and does not require improvement. Although the results of the analysis stated that the two books do not need improvement, they still need to be developed so that they have very good assessment criteria (very feasible) to use.

After developing the LKPD based on local wisdom, then a trial was carried out on the experimental and control classes. Hypothesis testing is the step of data analysis of learning outcomes carried out. The results of the hypothesis test show that the learning outcomes of students who use LKPD based on local wisdom are greater than the results of practicing students who are taught by conventional LKPD. The percentage increase in learning outcomes for the experimental class is 68.35%, this figure is greater than the average number of control class students, which is 23.55%. This proves that LKPD based on local wisdom that has been developed is efficient in improving student learning outcomes. So with the development of innovative local wisdom-based worksheets, it can improve student learning outcomes.

#### **4 Conclusion**

Based on the results of research that has been done, it can be concluded that: LKPD based on local wisdom that has been developed in the theme of learning towards a prosperous society class VI even semester has been very valid (very feasible) to be used and does not require further improvement, with an average value of 4.93. The conventional LKPD used by schools has met the criteria of being quite valid according to the BSNP standard, but improvements are still needed in several respects, which obtained 3.38 for publisher A and 3.25 for publisher B on average.

The application of LKPD based on local wisdom in learning affects student learning outcomes in developing towards the effectiveness of developing LPKD based on Local Wisdom, where based on the results of hypothesis testing student learning outcomes, the value of  $t_{count} > t_{table}$  is  $8.18 > 1.708$  with a significance level ( $\alpha = 0.05$ ) so that  $H_a$  is accepted and it can be concluded that student learning outcomes taught by LKPD based on local wisdom are higher than student learning outcomes taught using conventional LKPD. The increase in student learning outcomes using LKPD based on local wisdom is higher than student learning outcomes using conventional books. , which is  $68.35\% > 23.55\%$ . The theoretical learning required of students should be adapted to the local wisdom of the area. This is done so that students' interest in learning increases so that they can achieve learning objectives. The use of an attractive Student Worksheet (LKPD) is highly recommended, in order to attract students to learn.

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