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Development of Student Worksheets with the Context of Local Wisdom in Mathematics Learning

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ABSTRACT

The development of student worksheets ensures that the instructional materials produced are relevant, effective, and suitable for students' learning needs in various educational contexts. This research aims to develop Student Worksheets based on Papuan local wisdom for mathematics learning at MAN Insan Cendekia Sorong. The research method used is R&D with the ADDIE model approach. The study was conducted at MAN Insan Cendekia Sorong involving one educator and 30 students of grade XII IPA. The results show that student worksheets based on local wisdom successfully enhances students' understanding of mathematics. Evaluation regarding practicality indicates that more than 87,5% of teachers and 91,12% of students. They find student worksheets highly practical in its use. In terms of effectiveness, student worksheets achieved an average level of learning completeness of 100%, with students demonstrating increased learning motivation and active participation in the learning process. From a validity perspective, student worksheets is assessed to be aligned with curriculum standards and relevant to the educational needs of mathematics in Papua.

Keywords: Student worksheets, local wisdom, mathematics learning, effectiveness, product development

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1. INTRODUCTION

Based on Law Number. 20 of 2003 concerning the National Education System, learning is a relationship between students, educators and learning resources (RI, 2003). Miarso (2012) argues that learning is a process that is carried out consciously that brings change to a person.

This process aims to support the acquisition of knowledge, knowledge, skills, attitudes, and beliefs in students. According to Gagne, learning involves a series of external events designed to enable, support, and sustain the internal learning process. This approach ensures students can learn effectively through carefully designed external situations (Directorate of Education and Learning, 2019).

According to the experts above, learning in this study is one of the efforts carried out in a conscious and systematic way to create certain conditions in order to realize effective learning so that students can obtain learning goals.

According to the Great Dictionary of Indonesian, mathematics is a science that is related to numbers (Great Dictionary of Indonesian, 2018). Mathematics, according to experts such as Kline, James, Johnson & Rising, and Reys et al., is defined as a discipline that studies logic, mindsets, and solid proof of doubt. As a symbolic language, mathematics provides an appropriate way to express ideas and organized structures.

With a focus on patterns, relationships, and order, mathematics helps individuals understand and explore truth in various aspects of life. Mathematics is not only about numbers and formulas, but it is also the basis that allows individuals to master social, economic, and natural aspects, broaden their horizons, and facilitate wise decision-making in various fields (Aspia, 2021). At its core, mathematics is an essential means that allows individuals to better understand the world.

According to Susanto (2016), mathematics learning involves a teaching and learning process designed by teachers to stimulate students' creativity in thinking and improve their ability to construct new knowledge to gain a deep understanding of mathematics material. Meanwhile, Hamzah and Muhlisrarini (2016) revealed that mathematics learning is an effort to build students' understanding of facts, concepts, principles, and skills conveyed by teachers or lecturers, with students constructing their own understanding based on their respective potentials and ability to solve problems.

Based on the experts' understanding of learning and mathematics as previously described, it can be said that mathematics learning is a process of structured interaction between students, teachers, and learning resources in an educational environment. The goal is to strengthen students' mastery of knowledge, skills, and attitudes by associating mathematics with daily life. Mathematics, as the study of logic and mindset, helps to articulate ideas and structures systematically. In addition to numbers and formulas, mathematics is also important in social, economic, and environmental understanding, as well as in supporting thoughtful decision-making.

Contextual learning in mathematics has been shown to be effective in helping students master complex mathematical concepts. This method allows students to relate the subject matter to their daily lives, so they can more easily understand basic operations such as addition, subtraction, multiplication, and division (Arifin et al., 2020; Fahyuni et al., 2020). Taking into account students' thinking abilities, the contextual learning approach offers a more meaningful and immersive learning experience, especially in mathematics.

Contextual-based mathematics education allows students to gain a deeper understanding by relating learning materials to real-life situations. According to Rahmah (2021), this approach has characteristics such as deep understanding, increased knowledge, application in daily life, and providing feedback to students. In addition, there are seven important steps in contextual learning, namely constructivism, inquiry, questioning, group work, modeling, reflection, and assessment that are appropriate to the real context.

In education, constructivism emphasizes the importance of students actively building their knowledge through interaction with the surrounding environment. The inquiry approach encourages students to do independent exploration, while the questioning activity helps them think more deeply. The learning community emphasizes cooperation between students and teachers, while modeling provides examples of expected behaviors. Reflection facilitates deeper understanding, and authentic assessments evaluate students' skills through tasks that mirror real-world situations. All of these elements form a comprehensive learning environment for student development (Sugrah, 2019).

Contextual learning in mathematics has been shown to be effective in helping students master complex concepts. By connecting the subject matter to everyday life, this approach allows for a deeper understanding. Steps such as constructivism, inquiry, and modeling also play a role in creating a more meaningful learning experience. This significantly increases students' understanding and interest in Mathematics subjects.

The theory of the development of mathematics learning materials (Student Worksheet) is a structure designed to compile and develop mathematics teaching materials in a structured manner. Student worksheets aim to make it easier for students to understand mathematical concepts through presentations, exercises provided, and evaluative assessments (Faiq, 2023).

Student worksheets are learning materials in the form of sheets that contain brief learning materials and tasks that will be done by students (Koerniawati, 2020). Student worksheets also mean learning materials that contain instructions for activities that will be carried out by students so that they can achieve the competency goals that have been designed (Triana, 2021).

A student worksheet is a printed educational material designed to guide students in developing their abilities. The process of preparing student worksheets involves several steps, such as analyzing the curriculum, designing a map of student worksheet needs, determining titles, formulating basic competencies, selecting assessment tools, and compiling the structure of student worksheets. The implementation of the 2013 Curriculum revised version in 2017 encourages the improvement of the learning process by focusing on improving character education, literacy, 21st century skills, and Higher Order Thinking Skills (HOTS) (Rahmawati and Wulandari, 2020).

As explained above, so we can conclude that a student worksheet is a learning material made by educators to their students for the sustainability of the teaching and learning process in accordance with the achievement of competencies to be achieved.

Local wisdom is knowledge, habits, practices, and values that have accumulated and developed in the local community over the years. It covers cultural traditions, agricultural practices, traditional medicine methods, ecological knowledge systems, and various other aspects of local people's lives.

Local wisdom refers to the philosophy of life and wisdom values that are embedded in the local culture of a community. It involves knowledge, practices, and beliefs that are passed down from

generation to generation. The characteristics of local wisdom include proven experiences throughout the centuries, adaptability to changing times, integration with daily life, commonly used, dynamic, and closely related to the community's belief system (Sholeha, 2024).

Overall, local wisdom plays an important role in maintaining the cultural heritage and identity of a community. It is important to continue to maintain and strengthen this wisdom so that it is not eroded in the era of globalization and modernization that continues to develop. By linking local wisdom to mathematics learning, students can develop a deeper understanding of the relevance of mathematics in everyday life and how mathematical concepts apply solutions to real challenges in their cultural and environmental contexts.

The benefits of local wisdom vary, including nature preservation, individual development, cultural and knowledge advancement, and moral and ethical guidelines. However, efforts to develop and maintain local wisdom are faced with challenges such as the influence of globalization that threatens traditional values, lack of conformity with modern logic, time-consuming processes for implementation, lack of consistent support from governments, and sometimes religious interpretations that hinder traditional practices (Sholeha, 2024).

Local wisdom in Papua encompasses various aspects of culture, traditions, and knowledge that are passed down from one generation to the next by local indigenous peoples. More than 250 tribes in the region retain their unique languages, traditions, and customs (Choliq, 2020).

Papuan local wisdom includes various cultural aspects such as Honai and Kariwari traditional houses, Asmat wood carving art, traditional tifa musical instruments, and traditional noken bags. Honai, a traditional house of the Dani tribe, has a circular base shape with a conical roof made of straw, while Kariwari, a traditional house of the Tobati-Enggros tribe, is in the shape of an octagonal five. The art of Asmat wood carving depicts daily life and the surrounding nature, while tifa has deep cultural value as a traditional musical instrument. Noken, a bag made of bark fiber, also plays an important role as a symbol of Papuan life and culture (Rustam, 2023).

Overall, local Papuan wisdom makes an important contribution to Indonesia's national identity, enriching the concept of "*Bhinneka Tunggal Ika*" with its cultural diversity.

Mathematics learning in schools still has low learning outcomes. Every student in the regions of Indonesia has their own local habits or wisdom, while the learning that is made still contains local wisdom found in certain regions. So that teachers must be able to make a more effective learning student worksheets for the needs of students. Based on the description above, it is necessary to conduct a study on **"DEVELOPMENT OF STUDENT WORKSHEETS WITH THE CONTEXT OF LOCAL WISDOM IN MATHEMATICS LEARNING"**.

2. RESEARCH METHOD

The type of research used in this study is R&D (Research Development). According to (Sugiyono, 2008) Research Development (R&D) is a research method that produces outputs. This planned development model follows the ADDIE (analys, design, development, implementation, evaluation) rules developed by Branch (2009) in Sugiyono (2016).

The following is the flow of ADDIE:

1) Analysis stage: In this first stage, the researcher observes and analyzes the problems found in the research site from the results of the analysis;
2) Design stage: In the second stage, the researcher makes a learning tool design in the form of student worksheets that contains local wisdom to be used in the learning process;
3) Develop stage: In the third stage, the researcher describes the results of the development of the student worksheets design or design in the context of local wisdom and evaluates the results of validation and testing in limited tests and wide trials so that they can find out whether the development product is worthy of testing or not;
4) Implementation stage: In this fourth stage, the results of the research that have been evaluated in the form of student worksheets that are ready to be used and applied to the research site;
5) Evaluation stage: At this stage is a follow-up stage if the application of the development product has a positive impact on mathematics learning.

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This research product is designed, developed and validated by experts. So that the product is ready to be tested to students. The test subjects of this study were carried out in class XII IPA MAN IC, Sorong Regency. In this study, 1 educator was taken as a respondent, 10 students for a small-scale trial by conducting learning activities using the student worksheets developed, giving questions, and seeing the students' responses. For large-scale trials, the number of students was taken by 20 students, by conducting learning activities using the student worksheets developed, providing questions, seeing student responses, and analyzing the results of the trial. Students and educators who are in charge of being respondents will be given student worksheets based on local wisdom that has been developed, then respondents are given the opportunity to ask about student worksheets based on local wisdom. Then respondents were directed to fill out a questionnaire to find out the response of students and educators to the student worksheets based on local wisdom that has been developed.

Data collection techniques are the methods that can be used in collecting data. Based on the problem studied, there are three data collection techniques used in this study, namely questionnaire, observation and assessment.

The questionnaire was used to collect data from students and teachers about their views on the practicality and effectiveness of the student worksheets that has been developed. This questionnaire was created to obtain more structured and quantitative feedback on their experience using the student worksheets. The questions in the questionnaire cover various aspects, such as ease of use, relevance of the content, and its influence on students' understanding and motivation to learn. The data collected from the questionnaire was analyzed quantitatively to provide a clearer picture of the effectiveness of the student worksheets.

Observations were carried out during product trials, the data from the observations were analyzed quantitatively. This is because at the first and second meetings, students' independent learning activities both in the classroom and outside the classroom can be observed. Observation of students' activities outside the classroom is reviewed from the collection of assignments and quizzes and their activities of discussing either with the teacher or with fellow students through the space provided (through the comment column of a question given by the teacher).

The assessment was carried out with a quiz, this was carried out to obtain data on student learning outcomes after learning using student worksheets products for mathematics learning based on local wisdom. The quiz was carried out after students carried out learning using the mathematics learning student worksheets product developed by the researcher.

The data analysis techniques used in this study are qualitative and quantitative. The following is a description of the data analysis techniques used in this development research: Qualitative data was obtained from the results of the questionnaire. The questionnaire is filled out by students after learning with the teacher to obtain more in-depth evaluation results. The results of the questionnaire are analyzed qualitatively and then a conclusion is drawn to see the practicality of the product developed.

1) Validity

The relevance of the two experts as a whole is a validation of Gregory's content. Furthermore, the reliability value will be determined in the form of a consistent coefficient of the content item (content reality) in the following way.

$$vi = \frac{d}{a + b + c + d} \times 100$$

The following is an agreement between assessors for content validation:

Table 1. Agreement model between two experts

		Validator 1	
		Less relevant Score 1-2	Highly relevant Score 3-4
Validator 2	Less relevant Scores1-2	A	B
	Highly relevant Score 3-4	C	D

Description:
vi = Validation of the content construct
A = Both validators disagree
B = Validator 1 agrees, Validator 2 disagrees
C = Validator 1 disagrees, Validator 2 agrees
D = Both validators agree

The Gregory agreement model used with the criteria of the assessment results of the two validators is at least of strong relevance. If the result of the consistency coefficient of this content (Rg> 75%) then it can be stated that the results provided by the validator team have a strong assumption of consistency.

2) Practicality analysis
Measuring the practicality and effectiveness of the mathematics learning student worksheets involves collecting data on how well the student worksheets functions in the desired learning context. Here are some steps that can be taken to measure the practicality and effectiveness of the mathematics learning student worksheets:

- Direct observation: observing how teachers and students interact with the student worksheets in the classroom. Pay attention to whether the student worksheets is easy for teachers to understand and use, as well as how well students respond to it.
- Questionnaire: ask questions to teachers and students about their experience using the student worksheets. Ask them if they find the student worksheets practical and easy to use.

This practicality analysis, of course, must meet the practicality criteria. The following are some criteria for practicality according to (Sugiyono, 2018):

$81\% \leq P$: Very practical

$61\% \leq P \leq 80\%$: Practical

$41\% \leq P \leq 60\%$: Quite practical

$21\% \leq P \leq 40\%$: Less practical

$P < 21\%$: Impractical

3) Effectiveness analysis
Analysis of the effectiveness of students' learning materials after obtaining student worksheets learning based on local wisdom is complete. It is said to be effective if 70% of all subjects of this study meet the learning completeness. Calculate the presentation of the completeness of the student test using the formula:

$$\boldsymbol{Completion\ Percentage(x) = \frac{Many\ students\ completed}{Number\ of\ students} \times 100}$$

The following are the steps to analyze the effectiveness: 1) give an answer score on each answer item obtained by students based on the assessment rubric that has been made; 2) summing up the scores obtained by students; 3) calculate the grades obtained by each student; 4) Calculate the percentage of student test completion, using formulas; 5) categorize the percentage of completeness with the interval of the completeness criteria of the student learning outcome test results as follows (Widoyoko, 2009):

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Table 2. Criteria for the Completeness of Learning Test Results

Presentation of completeness	Category
80 % ≤ P	Very Effective
70% ≤ P < 80%	Effective
50 % ≤ P < 70%	Quite Effective
P <50%	Less Effective

Description: P = Student completeness presentation

Based on the effectiveness analysis above, the resulting learning student worksheets is said to be effective if the completeness of the student learning outcome test meets the minimum effective criteria.

3. RESULTS AND DISCUSSION

A. Research Results

Before the research instruments are used, all instruments will be validated by experts starting from observation sheets, teacher questionnaire sheets, student questionnaire sheets, student worksheets with the context of local wisdom, and quiz questions. There are 4 validators used in the development including 3 UNIMUDA lecturers and 1 teacher at MAN Insan Cendekia Sorong, namely, expert lecturer 1, expert lecturer 2, expert lecturer 3, and expert teacher 1. The results of the validation that have been carried out by several experts are declared valid with revision and valid without revision, and the instrument has been revised by the researcher in accordance with the validator's records and is suitable for use in the study. This validation uses Gregory's calculations. The following is a table of instrument validation results from experts:

Table 3. Observation Validation Results

No	Validator 1	Validator 2	Cross-tabulation
1.	4	4	D
2.	4	4	D
3.	4	3	D
4.	4	4	D
5.	4	3	D
6.	4	4	D

$$vi = \frac{d}{a+b+c+d} \times 100$$

$$\text{VI} = \frac{6}{0+0+0+6} = 1$$

Table 4. Student Worksheets Validation Results with the Context of Local Wisdom

No	Validator 1	Validator 2	Cross-tabulation
1.	3	4	D
2.	3	4	D
3.	3	4	D
4.	3	3	D
5.	3	3	D
6.	3	4	D
7.	3	4	D
8.	4	4	D
9.	4	4	D
10.	4	3	D
11.	3	4	D
12.	3	4	D
13.	3	4	D
14.	4	4	D

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No	Validator 1	Validator 2	Cross-tabulation
15.	4	4	D
16.	4	4	D

$$\text{VI} = \frac{16}{0+0+0+16} = 1$$

Table 5. Results of Validation of Learning Questionnaires in the Classroom

No	Validator 1	Validator 2	Cross-tabulation
1.	4	4	D
2.	4	4	D
3.	4	4	D
4.	3	4	D
5.	3	3	D
6.	3	3	D
7.	3	3	D
8.	3	4	D

$$\text{VI} = \frac{8}{0+0+0+8} = 1$$

Table 6. Quiz Question Validation Results

No	Validator 1	Validator 2	Cross-tabulation
1.	4	4	D
2.	4	3	D
3.	4	4	D
4.	4	4	D
5.	4	4	D
6.	4	4	D
7.	4	3	D
8.	4	3	D
9.	3	3	D
10.	3	4	D
11.	3	4	D
12.	3	3	D
13.	3	4	D
14.	3	4	D
15.	4	4	D
16.	4	4	D

$$\text{VI} = \frac{16}{0+0+0+16} = 1$$

The results of the cross-tabulation above obtained the assessment results of the two validators using the formulation of Gregory with a value of 1. So that the criteria obtained, namely "Very Valid", therefore all instruments that have been made by the researcher can be used in research.

After the student worksheets with the context of local wisdom is ready to be developed, then the researcher conducts a trial stage. The first trial stage is a small-scale trial with a total of 10 students. In the first trial stage, student worksheets was piloted in small groups to identify and correct initial deficiencies and get direct feedback from students regarding the suitability and clarity of the material. After being revised based on the results of a small-scale trial, the student worksheets was then piloted in a larger group to observe its effectiveness in a more diverse environment and ensure its feasibility of use in various learning contexts. The following are the results of a small-scale trial on students:

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Table 7. Small-Scale Trial Result Score

No	Student's Name	Score	Description
1.	SK 1	62,5	Incomplete
2.	SK 2	87,5	Complete
3.	SK 3	100	Complete
4.	SK 4	75	Complete
5.	SK 5	87,5	Complete
6.	SK 6	100	Complete
7.	SK 7	75	Complete
8.	SK 8	62,5	Incomplete
9.	SK 9	75	Complete
10.	SK 10	87,5	Complete

$$x = \frac{\text{Many students who completed}}{\text{Number of students}} \times 100$$
$$x = \frac{8}{10} \times 100 = 80\%$$

In this large-scale trial, the researcher used students of class XII MAN IC Sorong. In this large-scale trial, students get 100% completeness scores. The following is the data on the value of the large-scale trial:

Table 8. Large-Scale Trial Results Value

No	Student's Name	Score	Description
1.	SB 1	100	Complete
2.	SB 2	100	Complete
3.	SB 3	100	Complete
4.	SB 4	100	Complete
5.	SB 5	100	Complete
6.	SB 6	100	Complete
7.	SB 7	100	Complete
8.	SB 8	87,5	Complete
9.	SB 9	87,5	Complete
10.	SB 10	87,5	Complete
11.	SB 11	87,5	Complete
12.	SB 12	87,5	Complete
13.	SB 13	100	Complete
14.	SB 14	87,5	Complete
15.	SB 15	87,5	Complete
16.	SB 16	87,5	Complete
17.	SB 17	87,5	Complete
18.	SB 18	100	Complete
19.	SB 19	87,5	Complete
20.	SB 20	100	Complete

$$x = \frac{\text{Many students who completed}}{\text{Number of students}} \times 100$$
$$x = \frac{20}{20} \times 100 = 100\%$$

The practicality test in this study was carried out to test the level of practicality of the teaching materials developed, namely in the form of student worksheets in the context of local wisdom. This practicality test uses a questionnaire instrument whose responses come from educators and students. The following are the results of filling out questionnaires from educators:

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Table 9. Questionnaire Results by Educators

No	Indicators	Score
1.	The suitability of materials and activities in student worksheets based on local wisdom with the needs of students is appropriate	3
2.	The material in the student worksheets is based on local wisdom in accordance with KI-KD	3
3.	Materials in student worksheets with the context of local wisdom in accordance with indicators and learning objectives	3
4.	The material presented in the student worksheets is easy to understand and systematic	3
5.	Student worksheets with the context of local wisdom makes it easier for students to understand learning materials to build a space	4
6.	The use of spelling, words, and sentences, is precise, clear and easy to understand	4
7.	The clarity of the instructions for the use of student worksheets is in accordance	4
8.	The display of the student worksheets presented is attractive and innovative	4
9.	The language used is in accordance with the rules of the Indonesian language	3
10.	Student worksheets with the context of local wisdom helps students in remembering the material that has been given by the teacher	4
Number of Respondents		**1**
Total Score		**35**
Maximum Score		**40**
Score Percentage		**87,5**
Criterion		**Very Practical**

The results of the practicality test for educators received a score of 87.5%. This gets a classification with the criteria obtained, namely, "Very Practical". In addition, the results of filling out the questionnaire by students, as follows:

Table 10. Practical Test Results by Students

No	Indicators	Score
1.	The drawings presented in the student worksheets can add to my understanding and provide convenience for me regarding the building materials of the space	72
2.	I have no difficulty in doing student worksheets because the material is relevant to daily life	71
3.	I had no difficulty in doing the student worksheets because the material was clear and easy to understand	72
4.	The instruction helped me understand math concepts well	69
5.	I prefer to learn with student worksheets media based on local wisdom rather than just listening to the teacher's explanation	74
6.	The display presented caught my attention	76
7.	Using simple language	77
8.	The display presented is attractive and innovative	76
9.	The instructions helped me in completing the task smoothly	67
10.	I feel motivated because student worksheets connects mathematics with daily life and makes me actively involved in learning	75

Number of Respondents	**20**
Total Score	**729**
Maximum Score	**800**
Score Percentage	**91,12%**
Criterion	**Very Practical**

The results of the practicality test for students received a score of 91.12%. So that the classification obtained is based on the criteria obtained, namely, "Very Practical".

Student worksheets which has gone through the validation and revision process has been introduced in learning in class XII Science at MAN Insan Cendekia Sorong during two meetings. During the meeting, this student worksheets was actively used in the mathematics learning process in the classroom. Both students and teachers are given the opportunity to take advantage of this customized material to improve their understanding of the mathematical concepts taught. In addition, with the same learning methods that have been used by educators, various aspects of the student worksheets are observed and evaluated to assess its effectiveness in improving student learning and ensure that the quality is in accordance with the needs of class XII Science at MAN Insan Cendekia Sorong. To test the effectiveness of this, a test in the form of a quiz question of 2 numbers was used. The following are the results of the student assessment test:

Table 11. Student Effectiveness Test Results

No	Student's Name	Score	Description
1	K 1	87,5	Complete
2	K 2	75	Complete
3	K 3	87,5	Complete
4	K 4	75	Complete
5	K 5	87,5	Complete
6	K 6	87,5	Complete
7	K 7	87,5	Complete
8	K 8	100	Complete
9	K 9	87,5	Complete
10	K 10	87,5	Complete
11	K 11	87,5	Complete
12	K 12	100	Complete
13	K 13	100	Complete
14	K 14	100	Complete
15	K 15	87,5	Complete
16	K 16	100	Complete
17	K 17	87,5	Complete
18	K 18	87,5	Complete
19	K 19	87,5	Complete
20	K 20	100	Complete

$$(\mathrm{x}) = \frac{\text{Many students who completed}}{\text{Number of students}} \times 100$$

$$(\mathrm{x}) = \frac{20}{20} \times 100 = 100\%$$

Based on the results of the student test, 100% completeness data was obtained so that the criteria achieved in the teaching materials in the form of student worksheets based on local wisdom were "Very Effective".

B. Discussion

This research aims to develop a Student Worksheet with the context of local Papuan wisdom in mathematics learning at MAN Insan Cendekia Sorong. The results in this study show that student

worksheets with the context of local wisdom has succeeded in increasing students' understanding of mathematics material. The evaluation in terms of practicality showed 87.5% by teachers and 91.12% by students. So that students and teachers feel that this student worksheets is very practical in its use. In terms of effectiveness, student worksheets managed to achieve an average level of completeness of learning outcomes of 100%, with students showing increased learning motivation and being active in the learning process. The same thing is also in accordance with the opinion in previous research, that developing student worksheets in the context of local wisdom can increase students' interest and enthusiasm for learning mathematics, as well as improve students' learning outcomes and understanding of mathematics material (Musabihatul Kudsiah, 2022).

According to Yuniasih (2021), learning using student worksheets on students in the classroom can increase understanding and improve students' learning outcomes in learning. To realize appropriate learning, it is necessary to develop a learning tool, one of which is realized through the development of student worksheets in the context of local wisdom. The same thing is also in accordance with the opinion in the previous study, that the development of student worksheets can bring a new atmosphere in learning in the classroom to be more interesting. So that students' understanding and learning outcomes can increase (Muhammad Firdaus, 2018). In the 2013 curriculum, the government has prepared learning tools, one of which is student worksheets. Students understand learning more easily if the material is associated with the surrounding environment. The development of student worksheets in the context of local wisdom is expected to be a solution to facilitate students in learning activities in the classroom and can increase students' understanding of learning. This is similar to previous research, that by developing student worksheets, students are able to solve everyday problems. With the existence of student worksheets in the context of local wisdom, students not only learn about the material in learning, but also learn about the local culture around them (Sakdiyah & Annizar, 2021). Thus, in this study, the development of student worksheets with the context of local wisdom in mathematics learning was declared valid, effective, and practical.

4. CONCLUSION

The results of the research that have been conducted show that the development of student worksheets with the context of local wisdom in mathematics learning has succeeded in improving student learning outcomes towards the mathematical concepts taught. Evaluation in terms of practicality showed 87.5% by teachers and 91.12% by students. So that students and teachers feel that this student worksheets is very practical in its use. In terms of effectiveness, student worksheets managed to achieve an average level of completeness of learning outcomes of 100%, with students showing increased learning motivation and being active in the learning process. Thus, the development of student worksheets in the context of local wisdom in mathematics learning is declared valid, effective, and practical.

Teachers and students view these student worksheets as practical tools, showing that they can be used efficiently and effectively in the teaching and learning process in schools. Evaluation of learning outcomes showed that student worksheets succeeded in improving students' understanding of mathematics material. Students also demonstrate increased motivation to learn, active involvement in discussions, and the ability to apply mathematical concepts in everyday life. The average level of completeness of student learning outcomes reached 100%, indicating that student worksheets are effective in helping students achieve the expected understanding of mathematical material.

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