

Development of Learning Media (LKPD) Themes of Ecosystem Based on "Salingtemas"

DOI: <https://doi.org/10.47175/rielsj.v4i2.699>

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ABSTRACT

This study aims to develop LKPD Ecosystem themes to improve the ability of valid, practical, and effective science literacy. Learning products developed in the form of LKPD based on salingtemas. This type of research is Research and Development (R&D). With a 4-D development model. This study involved students in grade V SD Negeri 28 Bandar Baru as the subject of research. Data was collected using expert validation sheets, observation sheets of learning implementation, student response questionnaires, and scientific literacy capabilities tests. The data obtained is then processed and analyzed descriptively. The results showed that LKPD themed the ecosystem to improve the ability of students in the literacy based on salingtemas sciences developed was in the valid category and suitable for use. Based on the results of the trials conducted, it was found that LKPD had met the validity aspects. This can be seen from: 1) The implementation of learning in the initial trial is quite practical and the implementation of learning in the next trial is categorized as very practical; 2) Use of LKPD in Learning Natural Sciences Ecosystem Themes developed in terms of students' responses are classified as practical. LKPD based on salingtemas has also met the effectiveness aspects seen from the student science literacy capability test.

KEYWORDS

student worksheets; salingtemas; scientific literacy.

INTRODUCTION

Ministry of National Education (2008) Student Worksheet (LKPD) are sheets containing tasks that must be done by students. The activity sheet is usually in the form of instructions, steps to complete a task (Depdiknas, 2008). The advantage of using LKPD is to facilitate educators in carrying out learning, for students will learn independently and learn to understand and carry out a written task. LKPD can experience innovation in terms of presentation, one of which is integrated using an approach based on "Salingtemas".

"Salingtemas" is acronym from (Sains, Lingkungan, Teknologi, dan Masyarakat) or in English means (Science, Environment, Technology and Society). Salingtemas learning is an approach that can invite students to be willing and able to apply scientific principles and produce a technology to solve problems in society (Sari, W, 2018; Surata, PK & Arjaya, IB, 2018; Wardani, FP et al, 2019; Wardani, E, FF, et al, 2021; Winandika, G, 2020).

The problem that is often found today is that there are still many teachers who have not used learning media, one of which is the use of the appropriate LKPD in the learning process, especially in remote regional schools and also they do not understand and understand how the LKPD media is good and correct Knowing the correct shape of LKPD (Daryanto, 2013; Rahayu et al 2022). The LKPD compiled is still not in line with the RPP, the LKPD compiled also has not used learning models and strategies. In addition, the teacher is also still

compiling LKPD which contains examples of tests and materials in the package that is reprinted and distributed to students. The other problem that often occurs is LKPD which should be given when students carry out activities at the beginning of the learning activity with the aim of guidelines in carrying out the learning process activities, but the teacher distributes the LKPD after the process of providing learning materials or at the end of learning activities at the time of evaluation (Riadi, M, 2022).

The Salingtemas approach is a perspective to solve problems in science education. The Salingtemas approach is also considered a bridge in the delivery of material discussed in the classroom associated with the situation and conditions in the real world outside the classroom concerning technological developments, the environment and social situation (Aslam et al, 2021) Based on the results of the assessment that has been conducted by material experts, media experts and user opinions show that the average assessment is included in the very good category so that multimedia is based on " Salingtemas" for science learning theme 1 in grade IV elementary school can be stated feasible both in terms of media and material (Ariningtyas, A., Wardani, S., & Mahatmanti, W, 2017).

RESEARCH METHODS

This research was conducted in class V SDN 28 Bandar Baru, Pidie Jaya in the even semester of 2023, namely March-April 2023. Because this school was chosen in class V SDN 28 Bandar Baru as a research location because of the consideration that the ecosystem lessons taught at this school, have never been Using learning tools (LKPD) that are based on Salingtemas, besides that in this school there are also facilities that support the learning tools that will be applied to students. Learning Device Development Products (LKPD) that are based on Salingtemas require trials in the framework of formative evaluation. The trial results were obtained from the subjects consisting of 1 learning model expert, 1 media expert, 1 learning material expert and product user, namely students of class V SDN 28 Bandar Baru consisting of 3 students of class V for testing Try individuals, 9 students of class V for small group trials and 40 class V students for field trials. The development model used is an adaptation of the 4-D development model put forward by Thiagarajan and to develop the learning plan combined with the Dick & Carey learning development model (Sudaryono, 2016). The steps of the Procedure for Development of Learning Tools (LKPD) Themed the ecosystems based on " Salingtemas" are divided into 4 stages, namely: (1) Define Stage (Define), (2) Design Phase (Design), (3) Development Stage (Develop), and (4) Disseminate (Disseminate). The stage of developing the 4-D model.

RESULTS AND DISCUSSION

Test Description of the Trial Results

Based on the product validation using a series of trials and revisions that have been implemented, the LKPD learning tools are based on Salingtemas in the class V ecosystem subject matter already hold valid status. The trial was carried out through 4 stages, namely: (1) Evaluation of material experts, learning model experts and learning media experts, (2) individual trials, (3) small group trials, (4) large group trials.

Validation Test Results Data: Validation of Material Experts, Learning Model Experts and Learning Media Experts

Product validation intends to find the opinions of material experts, learning model experts and learning media experts regarding design accuracy, learning aspects and the truth of content, media and learning designs.

Data from the Validation of Learning Material Expert

Validation of Material Experts to the Development of LKPD Learning Tools Based on Salingtemas in Class V Ecosystem Materials carried out by Dr. Indramsa Ms.I, is a lecturer at Universitas Negeri Medan Postgraduate School. The assessment is carried out to obtain information that will be used to improve the quality of the material in LKPD learning tools based on Salingtemas Ecosystem subject matter. Validation results in the form of an assessment score of the quality components of the learning material contained in the development product can be seen in Table 1.

Table 1. LKPD Learning Tools Assessment Score Based on Salingtemas by Learning Material Experts with Scale (1-5)

	Assessment item	LKPD			Average	Percentage (%)	Criteria
		1	2	3			
1	Themes presented in accordance with core competencies and basic competencies	3	5	4	4	80	Good
2	The purpose of reflecting KI and KD integrated with knowledge about the ecosystem	4	5	4	4	87	Very Good
3	LKPD presented briefly according to the learning theme	5	4	4	4	87	Very Good
4	The composition of LKPD is in accordance with the needs of teaching media	4	5	5	5	93	Very Good
5	The topic given is in accordance with the concept of learning (ecosystem)	5	5	5	5	100	Very Good
6	Activities in LKPD support the strengthening of student concepts about the theme of the ecosystem	4	5	4	4	87	Very Good
7	Emphasizes the process to find concepts so that LKPD functions as a guide for student	5	5	4	5	93	Very Good
8	The material that was delivered linking between science, environment, technology and society.	5	5	5	5	100	Very Good
9	LKPD provides basic understanding and knowledge to students about the ecosystem	5	4	5	5	93	Very Good
Average					91		Very Good

From Table 1 above it can be concluded that the results of the assessment of the material as a whole stated that the percentage of the average value regarding the contents of the learning material from the indicator is 91% where the range of values is at a score of $80 \leq x \leq 100\%$, the tendency of the assessment of the material is said to be the category " Very good".

The results of the assessment of the subject matter of the theme of the ecosystem developed received several comments and suggestions, among others: (a) Articles should be related to organisms that have an impact on human activities. From the assessment, comments and suggestions by the material expert that learning tools LKPD Based on Salingtemas can be tested after a small revision.

Data from the Validation of Learning Model Experts

Validation of learning model experts is carried out by Dr. Wawan Bunawan M.Pd., who is a Postgraduate Lecturer at Universitas Negeri Medan. Learning model experts validate

products in aspects of learning models. The results of the validation in the form of an assessment score of LKPD learning devices based on Salingtemas themed ecosystem about the aspects of the quality of learning models can be seen in Table 2.

Table 2. Assessment Score of LKPD Learning Tools Based on Salingtemas by Learning Model Experts (Scale 1-5)

No	Assessment Item	LKPD			Average	Percentage (%)	Criteria
		1	2	3			
1	Giving discourse can raise problems	5	5	5	5	100	Very Good
2	Giving discourse can guide students to be critical of the problems that must be solved	5	5	5	5	100	Very Good
3	Activities in LKPD are in accordance with the stages of based on Salingtemas learning, namely:	4	4	4	4	80	Good
	1. <i>Invitation</i>						
	2. <i>Exploration</i>						
	3. <i>Solution</i>						
4. <i>Application</i>							
4	The facts section in LKPD helps the students' curiosity stimulate about the ecosystem and its relationship with technology	4	4	4	4	80	Good
5	The issue on LKPD is based on environmental problems that have an impact on life	5	5	5	5	100	Very Good
6	LKPD includes approaches to the environment, science, technology and society	4	4	4	4	80	Good
7	Strengthening the concepts given can sharpen students' knowledge about the theme of the ecosystem	5	5	5	5	100	Very Good
8	Giving questions can guide students to solve problems by linking them to the Salingtemas aspects	5	5	5	5	100	Very Good
Average						92	Very Good

The results of the learning model of the learning model in Table 2 as a whole are concluded that the average value of the indicator is 92%. Because the range of value is at a score of $80\% \leq x \leq 100\%$, the tendency of the assessment of the learning model expert is expressed in the category of "very good".

The evaluation of several comments and suggestions for improvement from learning model experts about the initial LKPD learning tools in general is: None. Conclusion From the assessment, comments and suggestions by learning model experts that LKPD learning tools on the theme of the ecosystem can be tested without revision.

Learning Media Expert Validation Data

Validation of Learning Media Experts to the Development of LKPD Learning Tools Ecosystem Themes by Prof. Dr. Retno Dwi Suyanti, M.Si who is a Postgraduate Lecturer in Unimed. The information used to assess the quality of LKPD learning tools for ecosystem themes about product quality.

Table 3. Assessment Scores of LKPD Learning Tools Based on Salingtemas s by Media Experts (Scale 1-5)

No	Assessment Item	LKPD			Average	Percentage (%)	Criteria
		1	2	3			
1	The language used is simple and understood	5	4	5	5	93	Good
2	The use of communicative language and does not contain ambiguous	4	4	5	4	87	Very good
3	Using a simple sentence structure	4	4	4	4	80	Good
4	Presentation of learning objectives listed in LKPD and is in accordance with the types of activities given	4	4	4	4	80	Good
5	The presentation of the theme is coherent and systematic	4	4	4	4	80	Good
6	Using an attractive and appropriate LKPD cover	4	4	5	4	87	Very good
7	Presentation of types of activities in LKPD is able to provide motivation to conduct discussions	4	5	4	4	87	Very good
8	The presentation of space to write down the results of the discussion is appropriate	4	4	5	4	87	Very good
9	Presentation of the source of investigation as a source of information is appropriate	5	5	5	5	100	Very good
10	Use of types and sizes that are not difficult for the reader	4	4	4	4	80	good
11	The layout between the text is regular	4	4	4	4	80	good
12	Illustration and images are appropriate	4	4	5	4	87	Very good
13	The display in LKPD can be an attraction	5	4	5	5	93	Very good
Average						86	Very good

From Table 3 it can be concluded that the results of the learning media experts as a whole, it is concluded that the average value and the indicator are 86%. Where if the range of value is at a score of $80\% \leq x \leq 100\%$, the tendency of learning media experts is declared category "very good".

The results of the assessment of the subject matter of the theme of the ecosystem that was developed did not get comments and suggestions, among others. Conclusion From the assessment, comments and suggestions by learning media experts that LKPD learning tools on the theme ecosystem can be tested without revision.

Analysis of Data on the Validation of Learning Material Experts

Based on the assessment of experts, namely material experts, learning model experts and learning media experts on each indicator of assessment of the initial products that have been completed have been given the average value and score of each expert. Then the results were analyzed to determine whether or not the LKPD learning device was developed on the theme

of the ecosystem. The average percentage of the results of the assessment of material experts, learning models and learning media is as shown in the following:

Table 4. The Average Percentage of the Results of the Assessment of LKPD Learning Tools based on Salingtemas Themed Ecosystem by the Subject Matter Expert

No	Categories	Percentage	Criteria
1	Material Aspect	84 %	Very Good
2	Learning Aspects	93 %	Very Good
3	Linguistic Aspect	96 %	Very Good
Average		91%	Very Good

The material expert assesses that LKPD learning tools are based on Salingtemas themed ecosystem based on three aspects, namely the material aspect (84%), the learning aspect (93%), and the linguistic aspect (96%) with an overall category of very good (91%), which means LKPD learning tools are based on Salingtemas on the theme of the ecosystem can meet the demands of learning needs.

Analysis of Data on the Validation of Learning Model Experts

For learning model experts, assessing LKPD learning tools based on Salingtemas themed ecosystems based on two aspects, namely content feasibility (93%), and presentation (92%), with overall including very good categories (87.9%), which means LKPD learning tools Based on Salingtemas themed ecosystem can meet the demands of learning needs. The average percentage of the assessment results of the learning model expert can be seen in table 5.

Table 5. The Average Percentage of the Results of the Assessment of LKPD Learning Tools based on Salingtemas Themed Ecosystem by the Learning Model Expert

No	Categories	Percentage	Criteria
1	Feasibility of content	93%	Very Good
2	Presentation	92%	Very Good
Average		92%	Very Good

Based on the response of learning model experts, it is stated that LKPD learning tools are based on Salingtemas themed ecosystems that are appropriate for trials.

Analysis of Data on the Validation of Learning Media Experts

Based on the responses of learning media experts, it is stated that LKPD learning tools are based on Salingtemas themed ecosystems that are appropriate for trials without revision. It means that it can be accepted and in general is very good.

Table 6. The Average Percentage of the Results of the Assessment of LKPD Learning Tools based on Salingtemas Themed Ecosystem by Learning Media Experts

No	Crategories	Percentage	Criteria
1	Linguistic Aspect	87%	Very Good
2	Presentation Aspects	87%	Very Good
3	Graphic Aspects	85%	Very Good
Average		86%	Very Good

Learning media experts assess LKPD learning devices based on The Average Percentage of the Results of the Assessment of LKPD Learning Tools based on Salingtemas on Themed

Ecosystem by the Learning Model Expert themed ecosystems based on two aspects namely linguistic aspects (87%), presentation aspects (87%) and aspects of crafts (85%) with overall including very good categories (86%), which means LKPD learning tools are based on i Salingtemas themed ecosystem can meet the demands of learning needs.

Individual Trial Results Data

Individual trial assessment which is conducted at SDN 28 Bandar Baru which consists of 3 students. The purpose of the assessment and response is to identify the shortcomings of LKPD learning tools. After being assessed by learning model experts, material experts and learning media experts. The assessment and response of this individual trial is that there is input criticism and suggestions about the presentation of learning tools presented in the form of textbooks. The results of the assessment on individual trials can be seen in Table 7.

Table 7. Assessment Score and Responses of LKPD Learning Tools by Individuals in SDN 28 Bandar Baru about quality

No	Assessment Items	Respondent			Average	Percentage (%)	Criteria
		1	2	3			
1	The sentences in the LKPD used are simple	5	4	5	4,7	93	Very Good
2	Sentences in LKPD have a double meaning	4	4	5	4,3	87	Very Good
3	The language used in LKPD is easy to understand	4	4	4	4,0	80	Good
4	The use of letters in LKPD is clear, precise, and proportional in size	4	4	4	4,0	80	Good
5	The layout between the texts in the LKPD is regular	4	4	4	4,0	80	Good
6	Interesting LKPD cover appearance	4	4	5	4,3	87	Very Good
7	Pictures on LKPD can be seen clearly	4	5	4	4,3	87	Very Good
8	Each LKPD page uses terms and symbols consistent	4	4	5	4,3	87	Very Good
9	The text in the LKPD can be read clearly	3	5	4	4,0	80	Good
10	LKPD can facilitate discussion activities	4	5	4	4,3	87	Very Good
11	The instructions contained in the LKPD are easy to understand	5	4	4	4,3	87	Very Good
12	Activities in LKPD in accordance with the subject matter	4	5	5	4,7	93	Very Good
13	questions on the LKPD according to the material presented	5	5	5	5,0	100	Very Good
14	The difficulty level of the questions on the LKPD is according to your ability	4	5	4	4,3	87	Very Good
15	The discourse provided includes issues that often occur in your surroundings	5	5	4	4,7	93	Very Good
16	Understanding more about the concept of Ecosystem material after conducting discussion activities on LKPD	5	5	5	5,0	100	Very Good
17	The facts section of the LKPD stimulates your curiosity about the ecosystem theme	5	4	5	4,7	93	Very Good
18	Consolidating the concepts provided can sharpen your knowledge of ecosystem themes	4	5	4	4,3	87	Very Good
19	This LKPD can train you to relate science and technology concepts, as well as their benefits for society and the environment	5	4	4	4,3	87	Very Good
20	After working on LKPD, your caring attitude towards the environment will increase in order to protect the environment	4	5	5	4,7	93	Very Good
	Average					88	Very Good

The summary of the assessment and response from this one-on-one trial which includes linguistic aspects, appearance, ease of use, accuracy of the contents of the material and compatibility with learning based on Salingtemas.

Table 8. The average percentage of the results of the assessment of LKPD learning tools based on Salingtemas themed ecosystem by individuals

No	Categorization	Percentage	Criteria
1	Language	87%	Very good
2	Appearance	84%	Very good
3	Ease of use	84%	Very good
4	Accuracy of the contents of the material	93%	Very good
5	Conformity with learning based on Salingtemas	92%	Very good
Average		88%	Very good

From these results it can be concluded the results of the assessment and overall individual responses, it can be concluded that the percentage of the average value of the indicator is 88%, where if the range is at a score of $81\% \leq x \leq 100\%$, then the tendency of individual assessment is declared category "very good". In the one-one trial activities carried out on 3 students of class X SDN 28 Bandar Baru there were no input and errors that needed to be revised against LKPD learning tools based on Salingtemas.

Data on Small Group Trial Results

The small group trial was also conducted at SDN 28 Bandar Baru which consisted of 9 students of class V. This small group trial data aims to find out some of the weaknesses or shortcomings when LKPD learning devices are based on Salingtemas themed ecosystem are used. This trial is used as the beginning of the product tested to small groups. Evaluation Results of LKPD Learning Tools Based on Salingtemas themed Ecosystem can be seen in Table 9.

Table 9. Assessment Score and Response of LKPD Learning Tools by Small Groups in SDN 28 Bandar Baru

No	Assessment Items	Respondent					Average	Percentage (%)	Criteria
		1	2	3	4	5			
1	The sentences in the LKPD used are simple	-	-	-	3	6	14	93	Very good
2	Sentences in LKPD have a double meaning	-	-	1	2	6	14	91	Very good
3	The language used in LKPD is easy to understand	-	-	2	2	5	13	87	Good
4	The use of letters in LKPD is clear, precise, and proportional in size	-	-	1	1	7	14	93	Good
5	The layout between the texts in the LKPD is regular	-	-	2	-	7	14	91	Good
6	Interesting LKPD cover appearance	-	-	2	1	6	13	89	Very good
7	Pictures on LKPD can be seen clearly	-	-	2	2	5	13	87	Very good
8	Each LKPD page uses terms and symbols consistently	-	-	-	3	6	14	93	Very good
9	The text in the LKPD can be read clearly	-	-	1	1	7	14	93	Good
10	LKPD can facilitate discussion activities	-	-	-	2	7	14	96	Very good
11	The instructions contained in the LKPD are easy to understand	-	-	1	1	7	14	93	Very good

12	Activities in LKPD in accordance with the subject matter	-	-	2	2	5	13	87	Very good
13	questions on the LKPD according to the material presented	-	-		2	7	14	96	Very good
14	The difficulty level of the questions on the LKPD is according to your ability	-	-	1	1	7	14	93	Very good
15	The discourse provided includes issues that often occur in your surroundings	-	-	2	2	5	13	87	Very good
16	Understanding more about the concept of Ecosystem material after conducting discussion activities on LKPD	-	-	1	1	7	14	93	Very good
17	The facts section of the LKPD stimulates your curiosity about the ecosystem theme	-	-	2	-	7	14	91	Very good
18	Consolidating the concepts provided can sharpen your knowledge of ecosystem themes	-	-	1	1	7	14	93	Very good
19	This LKPD can train you to relate science and technology concepts, as well as their benefits for society and the environment	-	-	2	1	6	13	89	Very good
20	After working on LKPD, your caring attitude towards the environment will increase in order to protect the environment	-	-	1	1	7	14	93	Very good
Average								91	Very good

The summary of the assessments and responses from this one-on-one trial includes aspects of learning quality, learning materials, programming and aspects of media display which can be seen in table 10 below.

Table 10. Average Percentage of Assessment Results for LKPD learning tools based on Salingtemas themed ecosystem by small groups

No	Categorization	Percentage	Criteria
1	Language	89%	Very good
2	Appearance	94%	Very good
3	Ease of Use	88%	Very good
4	Accuracy Content material	92%	Very good
5	Compatibility with Mutual Based on Salingtemas	95%	Very good
Average		91%	Very good

From these results it can be concluded that the results of the assessment and individual responses as a whole, it can be concluded that the percentage of the average value of the indicator is 91%, where if the range is at a score of $81\% \leq X \leq 100\%$, then the tendency for individual assessments is stated in the category "Very Good".

Large Group Trial Results Data

Large group trials were also carried out at SDN 28 Bandar Baru consisting of 40 students in grade V. The data for this large group trial aimed to find out some of the weaknesses or deficiencies when the products LKPD based on Salingtemas themed ecosystem were used. This trial is used as the beginning of the product being tested on large groups. The results can be seen in Table 11.

Table 11. Assessment Scores and Responses to LKPD Learning Devices by Field Tests at SDN 28 Bandar Baru

No	Assessment Items	Respondent					Average	Percentage (%)	Criteria
		1	2	3	4	5			
1	The sentences in the LKPD used are simple	-	-	-	15	25	62	93	Very good
2	Sentences in LKPD have a double meaning	-	-	-	10	30	63	95	Very good
3	The language used in LKPD is easy to understand	-	-	-	8	32	64	96	Good
4	The use of letters in LKPD is clear, precise, and proportional in size	-	-	-	15	25	62	93	Good
5	The layout between the texts in the LKPD is regular	-	-	-	3	37	62	93	Good
6	Interesting LKPD cover appearance	-	-	-	18	22	61	91	Very good
7	Pictures on LKPD can be seen clearly	-	-	-	10	30	63	95	Very good
8	Each LKPD page uses terms and symbols consistently	-	-	-	15	25	62	93	Very good
9	The text in the LKPD can be read clearly	-	-	5	10	25	60	90	Good
10	LKPD can facilitate discussion activities	-	-	-	10	30	63	95	Very good
11	The instructions contained in the LKPD are easy to understand	-	-	-	15	25	62	93	Very good
12	Activities in LKPD in accordance with the subject matter	-	-	-	10	30	63	95	Very good
13	questions on the LKPD according to the material presented	-	-	-	8	32	64	96	Very good
14	The difficulty level of the questions on the LKPD is according to your ability	-	-	-	15	25	62	93	Very good
15	The discourse provided includes issues that often occur in your surroundings	-	-	-	3	37	66	99	Very good
16	Understanding more about the concept of Ecosystem material after conducting discussion activities on LKPD	-	-	-	18	22	61	91	Very good
17	The facts section of the LKPD stimulates your curiosity about the ecosystem theme	-	-	-	10	30	50	75	Very good
18	Consolidating the concepts provided can sharpen your knowledge of ecosystem themes	-	-	-	15	25	62	93	Very good
19	This LKPD can train you to relate science and technology concepts, as well as their benefits for society and the environment	-	-	5	10	25	60	90	Very good
20	After working on LKPD, your caring attitude towards the environment will increase in order to protect the environment	-	-	-	10	30	63	95	Very good
Average								93	Very good

The assessments and responses from this Large Group Trial includes aspects of learning quality, learning materials, programming and media display aspects which can be seen in table 12 below

Table 12. Average Percentage of Assessment Results for LKPD learning tools based on Salingtemas themed ecosystem by field tests

No	Categorization	Percentage	Criteria
1	language	93%	Very good
2	Appearance	92%	Very good
3	Ease of Use	93%	Very good
4	Accuracy Content material	93%	Very good
5	Compatibility with Mutual Based Learning	93%	Very good
Average		93%	Very good

From these two tables showed that the assessment and individual responses as a whole, it can be concluded that the percentage of the average score of these indicators is 93%, where if the range is at a score of $81\% \leq X \leq 100\%$, then the tendency for individual assessments is stated in the category "Very Good".

Product Effectiveness Research Results

Student Learning Achievement Test Validation

The validation of the learning outcomes test was carried out at SDN 28 Bandar Baru school with 20 grade 6 students as validation respondents. The results of the student's score answers were processed using the Pearson Coprrelation formula in the Ms. Excel 2010 in learning outcomes test validation values.

Based on the results of the calculation of the validity test in the table above on the student learning outcomes test, it can be seen that 19 questions were declared valid. Table 4.14 also shows that the resulting Cronbach's Alpha value is $0.73 > 0.60$ on the learning achievement test. This shows that the statement items of this research are reliable or reliable. So that from the validation and reliability, the 19 questionnaire items used in this study can be used at the next research stage.

Student Ecosystem Theme Learning Outcomes Using LKPD Learning Devices Based on Salingtemas

Based on research that has been conducted at SDN 28 Bandar Baru on the learning outcomes of ecosystem themes in students who are taught with learning tools. Learning Outcomes Students from studying Ecosystem Theme who were taught with the LKPD learning tools based on Salingtemas, of the 30 students collected spread from a score of 57 to 89, with Mode (Mo) = 73, Median (Me) = 71, Mean (M) = 71.27 and variance = 67.79.

Table 14. Frequency Distribution of Student Learning Outcomes Scores Using LKPD Learning Devices Based on Salingtemas

No	Class Interval	Frequency
1	57 – 61	3
2	62 – 66	6
3	67 – 71	6
4	72 – 76	9
5	77 – 81	2
6	82 – 86	2
7	87 – 91	2
Total		30

Furthermore, it can be described in a histogram the distribution of frequency scores of Ecosystem Theme Learning Outcomes Students who are taught using LKPD learning tools.

Table 15. Frequency Distribution of Student Learning Outcomes Scores LKPD Learning Devices Based on Salingtemas

No	Interval Class	Frequency
1	57 – 61	3
2	62 – 66	6
3	67 – 71	6
4	72 – 76	9
5	77 – 81	2
6	82 – 86	2
7	87 – 91	2
Total		30

Student Ecosystem Theme Learning Outcomes by Using Reading Book Learning Devices

Based on research that has been conducted at SDN 28 Bandar Baru on learning outcomes in students who are taught with textbook learning tools. The value of student learning outcomes in the ecosystem theme that was taught with a reading book learning tool, it was found that the student learning outcomes of the 40 collected respondents spread from a score of 49 to 71, with Mode (Mo) = 54, Median (Me) = 54, Mean (M) = 56, and variance = 28.85. The distribution of frequencies for students' learning outcomes on ecosystem themes taught with textbook learning tools can be seen in Table 16.

Table 16. Frequency Distribution of Learning Outcomes Scores on Ecosystem Themes of Students Who Are Learned Using Packaged Reading Book Learning Devices

No	Interval Class	Frequency
1	49 – 53	3
2	54 – 58	6
3	59 – 63	6
4	64 – 68	9
5	69 – 73	2
6	74 – 78	2
7	79 – 91	2
Total		30

Furthermore, it can be described in a histogram the distribution of frequency scores of learning outcomes on the ecosystem theme of students who are taught with reading book learning tools.

Product Development

The development of learning tools can improve students' scientific literacy. The development of LKPD learning tools using computer devices contributed to practitioners, especially in implementing the learning process. In addition, LKPD learning tool also provides the convenience in organizing learning so that it has an impact on the effectiveness of the learning process and can increase students' scientific literacy.

LKPD learning device development product based on salingtemas on the theme of ecosystems is learning material that has been developed into account various aspects of learning. The developed learning device was carried out to produce a product in the form of

LKPD learning device based on Salingtemas for class V which is useful for increasing students' scientific literacy.

The research process begins with an initial analysis study, student analysis, task analysis and concept analysis that appears during the learning process on the ecosystem theme. Data from the early stages of gathering information served as a guide for researchers to carry out needs analysis in learning activities and to develop learning device concepts for ecosystem theme material which would later be developed further.

The steps for developing this LKPD learning tool are in line with the opinion of Sugiyono (2012: 298), namely: (1) Define, (2) Design, (3) Develop, and (4) Stage of Dissemination.

Revisions are made based on the assessments, suggestions and comments from material experts, learning model experts and learning media experts as well as media users who aim to produce media products that are suitable for use. Learning device variables have very good average values. The learning device variables assessed include the feasibility of content, presentation, language, programming and graphics.

By studying the characteristics of the ecosystem theme that reduces student interest and motivation so that it affects students' scientific literacy, it is caused by an ineffective learning process. For this reason, it is necessary to develop interlocking worksheet learning tools on the theme of ecosystems to overcome the problems that have been described, especially in ecosystem learning. One of the factors that causes this problem is the availability of learning resources which are still limited in quality and quantity.

Contextual learning requires learning resources that are contextual based. One of the learning tools that is very suitable for using a contextual approach is the LKPD learning device which is based on Salingtemas where this learning device is structured based on the principle of a learning model that is adapted to the subject matter of teaching so that it will bring students in real life. Besides that, the learning tools developed are based on input into the needs analysis activities for teachers and students to obtain information that the developed LKPD learning tools are indeed needed and can provide convenience for students and teachers as media users. So that the questions above can be assumed that the use of the developed LKPD learning tools is feasible to use.

The benefits obtained in using LKPD learning tools based Salingtemas are the concepts presented are easy to learn, understand and systematic. It provide opportunities for students to learn according to their respective characters, easy to understand because the material is equipped with pictures. This media product is in the form of a book that can be used in independent and classical learning and is also equipped with practice answering questions to find out students' absorption after the learning process is finished.

The Effectiveness of Product

From the results of research data processing carried out, there were differences in learning outcomes on the theme of ecosystems for students who used LKPD learning tools based on Salingtemas and students who were taught with learning materials for packaged reading books, namely the average results of students learning tests taught with using it were higher than use textbook reading packages.

The results of this study support the research of Hendra (2011) and Lingin (2012) which concluded that LKPD learning tools can improve learning outcomes compared to reading book learning tools. The results of the study also concluded that the development of LKPD learning tools in his research used the 4D product development model combined with the Dick and Carey learning development model taught by using LKPD learning tools based on Salingtemas is higher than students who are taught by using textbook media that are suitable for use.

From the test results using the one-party t-test, the price of $t_{count} = 2.01$ and $t_{table} = 1.69$ is obtained. When it compared $t_{count} > t_{table}$ or $2.01 > 1.69$. It can be stated that there are differences in learning outcomes using LKPD learning tools based on salingtemas with students who use packaged reading book learning tools. This can be seen from the results of the average score of students who were taught with the LKPD learning tool based on salingtemas, which was 25.38, while the results of the average score of students who were taught with the learning tool for packaged reading books were 22.90 out of the 19 questions given. This data proves that the use of LKPD learning tools based on salingtemas is better for increasing students' scientific literacy in learning ecosystem themes than using packaged reading book learning tools.

The use of LKPD learning tools based on salingtemas in the learning process can generate new desires and interests, it is expected to motivate students to study independently, creatively, effectively and efficiently. In managing how to learn to get optimal learning results. It is expected to reduce student boredom because so far the learning process has been carried out by most schools.

Learning that uses a LKPD learning tool based on Salingtemas provides a new atmosphere in the learning process that students will learn well if students can bring learning into the context of what is being studied into the application of real life every day and benefit themselves. Learning using packaged reading books can only provide material in principle, so it still requires an explanation from the teacher on the material to be taught. Package reading books are learning tools that are often used but there is no interaction between teachers and students in them. So that it can be seen the difference between student learning outcomes with the use of LKPD learning tools and text reading books on ecosystem theme learning. Learning to use packaged reading books does not create interactive learning where students are active in their learning. The results developed are in the form of LKPD books for ecosystem theme lessons. Students will be more motivated, interested and increase students' interest in learning and are expected to increase students' scientific literacy in learning. So it can be presumed that the use of "salingtemas"-based LKPD learning tools to increase the scientific literacy of fifth grade students at SDN 28 Bandar Baru is more effective than the use of packaged reading books.

CONCLUSION

Based on the results and discussion of the research it can be concluded as follows:

1. Development of learning tools (LKPD) with ecosystem themes based on " Salingtemas " to improve scientific literacy of class V students at SDN 28 Bandar Baru which research has developed are suitable for use as learning tools for class V. This is because LKPD learning tools can improve students' scientific literacy to learn independently in understanding teaching material on the theme of ecosystems.
2. Development of learning tools (LKPD) with ecosystem themes based on " Salingtemas " to improve scientific literacy of fifth grade students at SDN 28 Bandar Baru which were developed to be effective in increasing student scientific literacy in fifth grade students. This can be seen from the results of class learning with learning tools (LKPD) is higher than the results of class learning with textbook learning tools.

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