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Developing East Sumba's Local Culture Based Thematic Teaching Material To Improve Grade IV Students' Learning Outcomes

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Abstract: Ineffective and inefficient learning process in Elementary School due to less contextual learning situation served as the foundation of this research. This problem emerged since teacher interpreted materials only as teaching aids and the availability of learning materials is less relevant to material being taught. This study aimed to develop valid, practical and effective thematic teaching materials based on the local culture of East Sumba in grade IV. ADDIE Model of development research which consists of 5 stages, namely Analysis, Design, Development, Implementation, and Evaluation was applied. Questionnaires and tests were used to collect data. The limited trial subjects in this study were 25 teachers and students of grade IV SD Praiwora Waingapu, East Sumba Regency. The data collected were validation data of material experts, linguists and media experts, teacher and student responses to the developed materials and test result. The results showed that the development of teaching materials for social studies for grade IV SD Praiwora Waingapu, East Sumba Regency had very good qualifications with achievement rate 90.41%. This quality achievement was obtained from the calculation of media validity level with the average of 90.83% with very valid qualification, media practicality level of 96.40% with very practical qualification, and media effectiveness level of 84% with very high/effective qualification. Therefore, it could be concluded that the developed diorama media was valid, practical, and effective.

Keywords: Learning Materials, local culture, Thematic

INTRODUCTION

The quality of human resources can affect the progress of an area. Therefore, it becomes special concern of today's government to improve the quality of human resources. The qualified human resources can be cultivated through learning in schools. The existence of teachers, students, interaction between the two, infrastructure, learning resources, learning media and other elements can support each other and affect the formation of quality human resources (Wijiningsih, et.al, 2017). As explained by Mardhiyah, et.al (2021) it can be interpreted that human life in the 21st century undergoes many transformations and it also demands quality human resources in all efforts and results of their work.

Coupled with the demands of 21st century learning that teachers are expected to create new learning innovations to have impact on the quality of students to compete, be creative and critical and be able to solve daily life problems with the knowledge they have gained. Wijiningsih, et.al (2017) also stated that 21st century learning requires students to be independent, be able to cooperate, compete and to solve daily problems using what have been learned.

It also applies to learning process in elementary schools. One of the innovations need to be done

in thematic learning in elementary schools is contextual learning. Contextual learning is the type of learning that conditions students to relate material being studied to their real world (Ramdani, 2018). According to Supranto (2015), contextual learning can encourage students to understand the nature, meaning and benefits of learning to enable them to be motivated to keep learning. Besides, Afriani (2018) also proposed that contextual learning can make learning process not merely process of transferring knowledge from teachers to students but more than that, students can work and experience learning themselves and learning process is more prioritized than just learning outcomes.

Relevant contextual learning to elementary school students specifies that (1) learning needs to be linked to concrete things students encounter in everyday life because basically they start learning through concrete learning. (2) Formed contextual learning can occur in form of learning based on local culture in which learning is adapted to the context of culture.

Learning in schools always emphasizes student's learning experience which is obtained from meaningful and contextual learning created in classroom. Specifically for elementary school students, meaningful and contextual learning can direct stages of concrete to abstract thinking. One of the contextual learning that can be done is utilizing local cultural context approach since students often encounter it in their daily lives. In addition, Tinja, et.al (2017) emphasized the need for cultural inheritance which can be realized through education. This makes the inheritance of local culture well conveyed to the next generation (Laksana, et.al; 2016; Faisal & Sulkipani, 2016).

In relation to elementary schools, learning in schools is always assisted by media that enable students to understand presented material easier and can accommodate their thinking stages. One of which is textbooks usage. As stated by Latifah (2018), textbooks are guides used by both students and teachers containing guidelines for student activities and materials that help students to understand material. Furthermore, the Ministry of Education and Culture (2013) expressed that student books teachers use to transfer intended knowledge needed to be adapted to students' cultural background. Hence, textbooks must be designed with contextual approach to make students understand the materials easily as it is in accordance with the environment encountered in students' daily lives.

Based on facts found in the field, textbooks used by elementary school students in general has not been adapted to the context of their daily culture which made certain materials difficult for students to grasp. This is also in line with the findings by Zinnurain & Muzanni (2017); Lawe, et.al (2019); Lumban Gaol & Simarmata (2019) who stated that encountered learning approach was not contextual based, including teaching materials. Therefore, a reference book that is adaptable to students' local cultural context is needed.

In particular, students of Praiwora Waingapu Elementary School also experienced similar thing. First, , students used material that was not contextual as it was not adapted to the local culture context in thematic learning carried out in class even though it is easier for students to understand if the material is related to things they encounter every day. Second, innovations related to collaborating local culture with learning materials should be executed by teachers to increase their skills in creating contextual learning. Thus, it is necessary to design teaching materials based on local culture to trigger teachers' creativity and innovation.

Development products for thematic teaching materials based on local culture have been produced and tested to see their efficiency in several previous studies. Some of them are research by Divan (2018) regarding the making fourth grade thematic teaching materials based

on local culture of Manggarai. Then, Wijiningsih, et.al (2017) conducted a study to develop thematic teaching materials based on Bojonegoro regency's local culture. Additionaly, Tinja, et.al (2017) developed teaching materials based on the local culture of West Manggarai. These research benefited thematic learning held in schools after being adapted to students' local cultural context so that they understood materials easily and these materials motivated teachers as well to create contextual learning, one of which was by using contextual-based teaching materials.

This research is different from other research since it collaborates of East Sumba's local culture with the fourth grade thematic learning of elementary school. Relying on this, the researchers will develop grade IV thematic teaching materials based on the local culture of East Sumba. This study aims to produce a teaching materials product based on the local culture of East Sumba.

METHOD

This is a research and development research. Product resulting from this research is thematic teaching materials based on the local culture of East Sumba for grade IV. The model used in this study is ADDIE model which containing five stages which are analyze, design, development, implement and evaluate. Its design is an interactive learning process with the fundamental stages of effective, dynamic and efficient learning. This model consists of a number of systematic stages starting from analysis, design, development, implementation, to evaluation. ADDIE model is simple and can be done sequentially (Pribadi, 2014).

Object of this study is thematic teaching materials based on the local culture of East Sumba. Subjects in this study were teachers and fourth grade students. This research was undertaken for 3 months in 2022 using observation, interviews, questionnaires and tests as data collection techniques. The instruments used were interviews, questionnaires, observations and learning outcome tests in form of essay test.

Descriptive data analysis technique was used to calculate the percentage of validation questionnaire, practicality, attractiveness and effectiveness test score as well as the results of learning outcomes on the pretest and posttest and to describe the feasibility, effectiveness, attractiveness and practicality of the developed product in this case thematic teaching materials. Validity test analysis of material, media and language experts was undertaken by calculating total answer scores obtained from questionnaire, calculating percentage score using the following formula.

$$\text{Validity Level} = \frac{\text{Gained Score}}{\text{Total Score}} \text{ x } 100$$

Then, score interpretation was done using the following criteria.

81% - 100%	: Very valid
61% - 80%	: Valid
41% - 60%	: Fairly valid
21% - 40%	: Less valid
0 – 20%	: Invalid

Practicality, effectiveness and attractiveness tests analysis also goes through the stages of calculating total answer scores obtained from questionnaire. Analysis of learning outcomes test was carried out by quantitative descriptive analysis through the stages of calculating the number of answer scores obtained, calculating the percentage using the formula below.

$$S = \frac{R}{N} x100$$

Keterangan

S : Expected score

R : Total score of correct answers

N : Maximum test score

The next step was data interpretation based on critical thinking skill criteria as presented below.

Interval	Criteria
81% - 100%	High
61% - 79%	Medium
<60%	Low

The result of this research and development is an East Sumba Local Wisdom-Based Teaching Materials for grade IV elementary school. This research was carried out for 4th grade students at Praiwora Elementary School Waingapu, with teaching materials quality as result aim seen from validity, practicality and effectiveness of teaching materials. Based on the ADDIE model research procedure on developing teaching materials that had been carried out, the following results were accomplished:

1. Analysis

The development of a product begins with problem emerging in an existing product or problems may arise and occur because the available product is irrelevant to the needs of target, learning environment, student characteristics, and more. Based on curriculum analysis, a study of curriculum and characteristics of thematic learning were obtained.

2. Design

The teaching materials that will be developed contains concepts and content of East Sumba's local wisdom in the product. Based on needs analysis in previous section, the researchers designed the development of teaching materials as follows:

a. Making Prototypes

The prototype that will be produced is thematic teaching materials based on the local culture of East Sumba. Researchers designed the teaching materials for fourth grade elementary school students.

b. Designing Media Assessment Insturment

Based on grid generated from the design of media assessment instruments, the researchers created media assessment instruments including media validity assessment instruments in form of material expert and media experts validation sheets, teaching materials practicality assessment instruments in form of teacher and student response questionnaires and material effectiveness assessment instruments. Teaching in form of pretest-posttest.

Beside designing initial product of teaching materials, the researchers also developed an instrument for assessing teaching materials for research data collection. The grid of this instrument was constructed referring to theory of Sudjana and Rivai (2010: 4-5) in which the teaching materials to use must be based on six factors ranging from accuracy, content support, convenience, skills, efficiency and suits students' thinking level.

As further support of this theory in designing the instrument grid, the researchers refered to Walker & Hess's view on the Criteria for Assessment of Teaching materials based on quality (Arsyad, 2011). The instrument in this study was validated theoretically.

The validation results were ready to use instruments for research data collection. The

selected validator were Drs. Gaspar Melo, S.Pd., M.Pd as 1st Validator and Adam Benu, S.Pd., M.Pd as 2nd validator. The recapitulated results of instrument validation are presented in the following table.

Table 4.2 Research Instrument Validation Result Recapitulation

No	Instrument Validators	Score	Max. Score	Validation Percentage
I	Drs. Gaspar Melo, S.Pd.,M.Pd	81	100	81%
II	Adam Benu, S.Pd.,M.Pd	96	100	98%

Source: Research Data (processed data)

Comprehensive instrument validation differed in number of scores and percentages. In the first validation result, the obtained score was 81, which made the validation percentage 81%. Relying on these results, according to the Likert scale criteria in table 3.9, the instrument developed was in "Valid" category. On the other hand, the obtained score of second validation results was 96 out of maximum score of 100, thus the percentage was 96%. Based on these acquisitions, according to the Likert scale criteria in table 3.9, the research instrument developed was in "Very Valid" category.

3. Development

In this stage, researchers carried out two stages of development which were product development of teaching materials and expert validation.

a. Development of Teaching Material Product Design Based on East Sumba's local culture During teaching materials development, researchers followed the guidelines for making teaching materials in which the product was designed into a book packaged with contents based on the local culture of East Sumba.

b. Expert Validation

In this stage, the media will be validated by material and teaching materials experts lecturers. For the validation process later, validators will use the prepared instruments. Validation will be carried out until the teaching materials are declared valid to use in learning activities. The names of validators are presented in the table below:

Table 4.3 List of Validators

Validators	Name	Description
Material Expert	Maxsel Koro, S.Pd.,M.Pd	PGSD Undana Lecturer
Teaching Material Expert	Sarah Nurhabibah, S.Pd.,M.Pd	PGSD Undana Lecturer

The percentage value is calculated after validation result recapitulation. If validity percentage is identified, the researchers group it into assessment criteria based on the following Likert scale:

Qualitative Assessment	Score Range	Quantitative Assessment
Very Valid	5	84% - 100%
Valid	4	68% - 83%
Fairly Valid	3	52% - 67%
Invalid	2	36% - 51%
Very Invalid	1	20% - 35%

(Source: Riduwan, 2010)

Based on the development research that has been carried out, to determine the validity of the developed teaching materials, a validation stage was performed by several experts with predetermined criteria. Below is the research validation done by the researchers:

1) Material Expert Validation

In this research, the appointed material expert as validator was Maxsel Koro, S.Pd., M.Pd, a lecturer in the Elementary School Teacher Education Program of FKIP Undana, with thematic learning expertise in Elementary School. Material expert assessed the product in terms of the teaching materials content using questionnaire instruments. The validation done in Kupang on January 31st, 2022. The validation results is presented below:

Table 4.4. Material Expert Validation Result

No	Assessed Aspects	Item Number	Total Score (∑X)	Maximum Score(∑Xi)	Aspects Percentage
1	Content Quality	1, 2, 3, 5, 6, 7, 11, 12, 13	43	45	95,56%
2	Presentation	4, 8, 14, 15	16	20	80%
3	Learning	9, 10	9	10	90%
Summary		**15 items**	**68**	**75**	
Average			90,67%		

Source: Research Data (processed data)

The results from Material Expert validation in table 4.4 revealed that score 68 was obtained, with maximum score 75. After that, data was processed using a formula to find validation percentage (P). The formula used is (Akbar, 2013: 158):

$P = (\sum X)/(\sum Xi) \times 100\%$
$P = 8/75 \times 100\%$
$P = 90,67\%$

From the calculation results, the validation percentage was 90.67%. Based on the assessment according to the Likert scale criteria, the

developed teaching materials are in very valid criteria.

2) Teaching Materials Expert Validation

The appointed media expert as the product design validator was Sarah Nurhabibah, SPd., M.Pd, a lecturer in the Elementary School Teacher Education Program of FKIP Undana who specialized in teaching materials design. The expert assessed the developed teaching materials in term of product design using prepared instruments. Validation process was done in Kupang on February 1st, 2022. The validation results is presented in the following table:

Table 4.5 Teaching Material Expert Validation Result

Assessed Aspects	Item Number	Total score (∑X)	Maximum Score (∑Xi)	Aspects Percentage
Presentation	1, 2, 3, 4, 5, 6, 7, 8, 10	41	45	91%
Content Quality	9, 12, 13	15	15	100%
Design	11, 14, 15, 16	18	20	90%
Summary	**16 Items**	**74**	**80**	
Average		92,50%		

Source: Research Data (processed data)

The results of teaching materials expert assessment was 74, with a maximum score of 80. After that, data was processed using formula to find validation percentage. The formula used is as follows (Akbar, 2013: 158):

$P = (\sum X)/(\sum Xi) \times 100\%$
$P = 74/80 \times 100\%$
$P = 92{,}50\%$

Based on these calculations, the percentage was 92.50%. Judging from the Likert scale criteria, the developed diorama learning media is in very valid criteria. After validation, the media was declared by the teaching materials expert as "Valid: appropriate for usage without revision. To determine teaching materials validity, research data from validation results from material and teaching materials experts were used. Below is a summary of validation data from both experts:

Table 4.6 Validation Summary of Expert Team

No	**Validators**	**Persentase Aspek Penilaian**			
		Content Quality	**Presentation**	**Design**	**Learning**
1	Material Expert	95,56%	80%	-	90%
2	Teaching Material Expert	100%	91.11%	90%	-
Average		**97,78%**	**85,55%**	**90%**	**90%**
Validity Percentage		**90,83%**			
Validity Category		**Very Valid**			

Source: Research Data (processed data)

Table 4.6 is a recap of validation results by both expert validators.

4. Implementation

At this stage, researchers implemented teaching materials based on the local culture of East Sumba which had been validated into learning process in schools. The form of implementation at this stage was undertaken during learning in grade IV of SD Praiwora Waingapu to observe its effect on learning quality including practicality and effectiveness. The process was divided into 2 phases, which were:

a. Small scale trial

This trial was executed by involving 10 students combined from two learning groups. Subjects were randomly selected based on characteristics of the student population including level of knowledge, gender, and also different backgrounds. 5 students from class A were selected as samples, as well as 5 students from class B.

This small group trial was done in 3 meetings. In the first meeting, learning was carried out without media, students were given a pretest. From the pretest results, the researcher recapitulated the students' test scores, and it was found that the overall test scores of students did not reach the Minimum Completeness Criteria (KKM). Therefore, the next step was to prepare thematic teaching materials based on the local culture of East Sumba developed as solution for teacher to use. After that, at the second meeting, learning was carried out using teaching materials that researchers had prepared. In the last meeting, after completing core activities, students were given posttest as a follow up. Besides working on posttest questions, students and teachers were also asked to fill out a response questionnaire to assess the practicality of teaching materials. Then, the test and the questionnaire results were recapitulated to be used as research data and analyzed to obtain a research study.

b. Large scale trial

In large scale trial, researchers took 25 students of grade IV SD Praiwora Waingapu as samples. Research data to evaluate teaching materials practicality in large-scale trials were collected from results of student response questionnaires. Large group trials were conducted in 3 meetings. In the first meeting, learning took place without teaching materials, then at the end of learning students were given a pretest. Then student's test scores of pretest was recapitulated and it was found that students' average test score remained low as their score did not reach the expected KKM. The following section will describe analysis results of the all trials implementation, both small group trials and large group trials that had been carried out.

a. Teaching Material Practicality Analysis

Teacher's and student's response questionnaire served as base for the teaching material practicality analysis. Data of this questionnaire were analyzed quantitatively using a 4 interval Likert scale. After the percentage results were obtained, they will be grouped based on the product practicality criteria presented in the following table:

Criteria	**Level**
85,01% - 100%	Very Practical
70,01% - 85,00%	Practical
50,01% - 70,00%	Less Practical

01,00% - 50,00%	Impractical

(Source: Sa'dun Akbar, 2013: 82)

Teaching material products were considered practical and suitable to use if the percentage is higher than 70%. In this study, practitioners who assessed practicality of this media is the fourth grade teacher and also fourth grade students of SD Praiwora Waingapu as test subjects.

1) Practicality by Grade IV Teacher as Test Subject

Table 4.7 Result of Teacher's Response Questionnaire

No	Asssessed Aspects	Item Number	Total Score (Tsp)	Maximum Score (Tsh)	Aspects Percentage
1	Feasibility	1 – 10	40	40	100%
2	Attractiveness	11 – 15	20	20	100%
3	Exxiciency	16 – 20	20	20	100%
Summary		20 Items	80	80	300%

Source: Research Data (processed data)

The analysisof teaching materials practicality level was obtained from the results of teacher's response questionnaire which was calculated using formula from (Akbar, 2013: 158), and the practical percentage value (Vp) was:

$Vp = Tsp/Tsh \times 100\%$

$Vp = ((40+20+20))/((4 \times 20)) \times 100\%$ $Vp = 80/80 \times 100\%$

$Vp = 100\%$

Therefore, the percentage of teaching materials practicality attained from the fourth grade teacher response questionnaire assessment results was 100%. Teaching materials in this study as stated by learning practitioners was categorized as "Practical to be used in thematic learning for fourth grade elementary school without revision".

2) Practicality by IV Grade Students as test Subjects

Furthermore, to examine media practicality, apart from teacher's response questionnaire assessment, practicality assessment data source also came from the students' response questionnaire assessment result which was divided into two groups in two trial stages. An assessment on student response was also carried out, with the objective of identifying practicality level of the developed diorama media. The results of their response questionnaire assessment in trial are as follows.

Table 4.8 Questionnaire Assessment Result

No	Assessed Aspect	Item Number	Total Score (Tsp)	Maximum Score (Tsh)	Aspects Percentage
1	Effectiveness	1, 6, 7, 8, 9, 10	223	240	92,9%

2	Attractiveness	2, 3, 4, 5	149	160	93,1%
	Summary	**10 Items**	**372**	**400**	
	Average		93%		

Source: Research Data (processed data)

Based on calculation of student response questionnaires in small group trial, their total score of response was 372 which after being calculated using formula, the percentage value of practicality (Vp) was:

Vp = Tsp/Tsh × 100%

Vp = 372/((4 x 10 x 10)) × 100%

Vp = 372/400 × 100% Vp = 93%

Media products were considered practical and feasible to use if the practicality percentage is higher than 70%. Thus, the practicality percentage rate in small-scale trials is 93%.

b. Teaching Material Effectiveness Analysis

After finding the practicality level, researchers will also present data on the effectiveness of teaching materials. The effectiveness of developing diorama media can be viewed from the results of pretest and posttest which were carried out in large-scale trials. The target of teaching material products testing was all fourth grade students of SD Praiwora Waingapu. Media effectiveness was measured by comparing pretest score with the posttest score. The statistical

descriptive data of pretest and posttest results in large-scale trials are presented below:

Table 4.12 Descriptive Data of Pretest and Posttest Result

Test Type	Total Subjects (N)	Min	Max	Mean	Completeness Percentage	Completeness Category
Pretest	25	49,40	73,80	44,48	-	Very Low
Posttest	25	44,48	70,88	70,88	84%	High

Source: Research Data (processed data)

Data in table 4.12 shows that the average pretest score is 44.48, if it is altered to students ability category table, it is included in "Very Low" category since none of them reached the KKM. However, their average pretest score increased by 70.88 and was in "High" category.

From 25 students as research subjects, 21 students have achieved completeness, but the other 4 students have not. Therefore, students' completeness percentage can be calculated as follows:

st) × 100% =21/25 × 100%

= 84%

In answering formulation of problem posed in the study on assessing the effectiveness of teaching materials, then besides analyzing indicators of success, researchers also intended to conduct statistical analysis on data from pretest and posttest results. Thus, a quantitative pre-experimental one group pretest-posttest research design was used in this study. This design was chosen as researchers wanted to compare the state of the initial learning outcomes

in pretest with the final learning outcomes in posttest by giving treatment in form of usingteaching materials. Based on the presentation of pretest and posttest data on large-scale test, the next step was to analyze data with statistical tests to determine the level of teaching materials effectiveness.

Analysis can be calculated through several statistical tests as follows:

1) Normality Test

Normality test in this study serves to determine whether respondent's data is normally distributed. Normality test was undertaken using One Sample Kolmogorov-Smirnov with the assistance of SPSS 16 program, and the following are the test results:

Table 4.13 Normality Test Result

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		25
Normal Parameters a	Mean	.0000000
	Std. Deviation	10.35003028
Most Extreme Differences	Absolute	.124
	Positive	.087
	Negative	-.124
Kolmogorov-Smirnov Z		.621
Asymp. Sig. (2-tailed)		.835

a. Test distribution is Normal.

Data on table 4.13 shows that the results of the normality test from a sample of 25 data showed that the data were normally distributed. This is indicated by the Asymp value. Sig. (2-tailed) of 0.835. This means that the significance value of the Kolmogorov Smirnov normality test is greater than 0.05, so it can be concluded that the research data is not different from the normal curve of data distribution.

2) Homogeneity Test

After knowing that the research data was normally distributed, the next step was conducting a homogeneity test with the aim of knowing whether the groups of respondents in the study come from the same population.

Table 4.14 Homogeneity Test Result

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Hasil Belajar IPS	Based on Mean	.217	1	23	.646
	Based on Median	.176	1	23	.679
	Based on Median and with adjusted df	.176	1	21.447	.679
	Based on trimmed mean	.199	1	23	.660

As presented in output table above, the value of Sig. Based on Mean for social studies learning outcomes variable was 0.646. Since the value of Sig. 0.646 > 0.05, it can be concluded that data variance of learning outcomes in class A and class B was homogeneous. This implied that the respondent group came from similar population.

3) Hypothesis Test

Hypothesis test was done using Paired Sample T-Test in SPSS 16 programme. The result of hypothesis test is presented in the following table:

Tabel 4.15 Paired Sample T-Test Result

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Sebelum	44.48	25	11.155	2.231
	Sesudah	70.88	25	8.348	1.670

Paired Samples Test

		Paired Differences					t
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	
Pair 1	Sebelum - Sesudah	-26.400	11.165	2.233	-31.009	-21.791	-11.822

Paired Samples Test

		df	Sig. (2-tailed)
Pair 1	Sebelum - Sesudah	24	.000

Table 4.15 presents a summary of descriptive statistical results of two samples studied, which were pretest and posttest scores. The average learning outcome or Mean was 44.48 of pretest score. On the other hand, the average learning outcome or Mean was 70.88 for posttest score. Total respondents used as research samples were 25 people. The value of Standard Deviation on pretest was 11,155 and posttest was 8,348. Since Mean of pretest (44.48) < posttest (70.88), it indicated that descriptively there was average learning outcomes between pretest and posttest.

In addition to the output, the second crucial output in finding answers from this case was also presented related to the influence of using teaching materials based on the local culture of East Sumba in social studies learning. The hypothesis formulation of this research is:

Ho : There is no difference in average score of pretest and posttest

H_1 : There is difference in average score of pretest and posttest

Relying on the decision-making conditions, if the value of Sig. (2-tailed) < 0.05, then Ho is rejected and H1 is accepted. On the other hand, if the value of Sig. (2-tailed) > 0.05, then Ho is accepted and H1 is rejected. As shown in the output table, the value of Sig. (2-tailed) is 0.000 < 0.05, then Ho was rejected and H1 was accepted. Therefore, it could be concluded that there was an difference between the average of pretest and posttest learning outcomes. This meant that the use of thematic teaching materials based on the local culture of East Sumba in grade IV was influential.

b. Evaluation

The target of product trial conduct in general was all grade IV students of Praiwora Elementary School, Waingapu.

i. Evaluation on design stage

Based on the recapitulation of student response questionnaires to test the developed teaching materials' practicality, researchers conducted a formative evaluation on the validity and reliability results of the instrument. Measurement of this instrument's validity was done to check the accuracy of an instrument in

measuring what should be measured. The following are results of the validity of student response questionnaire instrument:

Tabel 4.16 The Result of Students' Response Questionnaire Instrument Validity Test

Item No.	rxy	rtable	Description	Category
1	0,438	0,396	Valid	Medium Validity
2	-0,319	0,396	Invalid	Low Validity
3	0,435	0,396	Valid	Medium Validity
4	0,732	0,396	Valid	High Validity
5	0,471	0,396	Valid	Medium Validity
6	0,707	0,396	Valid	High Validity
7	-0,071	0,396	Invalid	Very Low Validity
8	-0,106	0,396	Invalid	Very Low Validity
9	0,446	0,396	Valid	Medium Validity
10	0,766	0,396	Valid	High Validity

Sumber: Data Penelitian (hasil olah data dengan SPSS 16)

ii. Evaluation on Implementation Stage

Researchers evaluated the implementation of small scale trial research in order to measure the achievement of development goals. After conducting formative evaluation on student learning outcomes, it was found that their scores after using diorama media were better and most students scored above the KKM = 70. Therefore, the researchers concluded that the development of teaching materials products can become a solution in overcoming learning problems on the sub-theme of humans and environment in social studies class. In general, the target of product testing was all fourth grade students of SD Praiwora Waingapu, East Sumba Regency.

2) Discussion

This study developed teaching materials based on the local culture of East Sumba which were used for fourth grade learning. The target of product testing is all fourth grade students at Praiwora Waingapu Elementary School in general, East Sumba Regency. The teaching material products development process was carried out in accordance with the ADDIE model flow which consisted of 5 stages including analysis, design, development, implementation and evaluation. After the product was approved by material and teaching materials experts as validator, then it was tested for small groups and large groups.

1. Validity of Teaching Material Development

Validation by material experts included three aspects, including content quality, presentation and learning with their respective indicators. For the first aspect, the content quality covered 9 indicators and scored 43; presentation as the second aspect covered 4 indicators and scored

16, and lastly, the learning aspect consisted of 2 indicators and scored 9. If total scores of three aspects were combined, the final score was 68. Then, by calculating validity percentage, the percentage results were 90.67% with **very valid** category of validity. Thus, a conclusion can be drawn that teaching materials developed by researchers were feasible to be implemented relying on material experts validation result.

There were three aspects covered in validation by teaching materials expert, namely the feasibility of teaching materials presentation, content quality and design. The first aspect contained 9 indicators and got a total score of 41. The content quality of teaching materials as second aspect had 3 indicators and the gained score was 15. On the other hand, the third aspect consisted of 4 indicators and got a total score of 18. If the three aspects' total scores were combined, the final score was74. Then, by calculating validity percentage, the percentage result was 92.50% with a **very valid** result of validity category. Therefore, it can be concluded that according to teaching materials expert, the teaching material products developed by researchers were feasible to be implemented.

a. Practicality of Teaching Material Development

The practicality of teaching materials making can be seen from the teacher's data and students' response questionnaire recapitulation. Teacher's response questionnaire designed by researcher covered three aspects, namely the feasibility of teaching materials in learning, attractiveness and efficiency aspects. The first aspect had 10 indicators items and gained total score of 40. The second aspect consisted of 5 indicators and a total score of 20 was obtained, meanwhile the third aspect consisting of 5 indicators, obtained a total score of 20. If the total scores of three aspects were combined, the total score was 80. Thus, the percentage of practicality was 100% with practicality level in **very practical** category. For the student response, the trial group used similar questionnaire instrument. For the trial of 10 student research sample group, practicality percentage was 93% and was in **very practical** category.

b. Effectiveness of Developed Teaching Material

The effectiveness of the developed teaching materials can be checked from the increase in results of pretest and posttest scores. Based on the results of pretest and posttest data analysis carried out in large scale trial with a pre-experimental one group pretest-posttest research design, the significance value of the paired samples t-test was Sig. 0.000 < 0.05. This meant that the initial hypothesis Ho was rejected and the final hypothesis H1 was accepted. Accepting H1 implied that the developed teaching materials were effective in social studies learning. The effectiveness was proven by average score of posttest result was 70.88, which was higher than pretest average score which was 44.48.

Apart from the statistical analysis above, the effectiveness of these teaching materials was also shown in the percentage of classical completeness. In small group trial, the percentage of classical completeness was 90% from 10 students as a sample. Then, in large scale trial of 25 students as a sample, the percentage of classical completeness was 84%. Therefore, it can be established that in two trials with different scales, the teaching materials developed remained effective in improving learning outcomes of fourth grade students.

c. Research Analysis

Research analysis is a sub-discussion of researchers about validity, practicality and effectiveness of the developed diorama media. Results of the study is presented in table 4.21 and Figure 4.8 diagram of teaching materials qualification. The final result confirmed that the percentage of diorama media quality is 90.41% with "**very good**" qualifications.

Based on validation results obtained from two expert validators, the average percentage was 90.83%. Teaching materials were relevant to teaching materials with good design. The results obtained were categorized as "**very valid**" in the development of thematic teaching materials.

Teacher and student response questionnaires measured the practicality of teaching materials in sub-themes of humans and the environment of social studies learning. The results of teacher and student response questionnaire on"strongly agree" answer with average percentage of 96.40% indicated that the developed teaching materials were learning materials that facilitated students in understanding the material.

The effectiveness of teaching materials in thematic learning was acquired from student tests result. The effectiveness of students' test result reached an average score of 70.88, so average completeness demonstrated an effectiveness percentage of 84%. Relying on the recapitulation results, the effectiveness of diorama media was included in "**high**" criteria.

CONCLUSION

Inducing from data of research and development of teaching materials based on East Sumba local culture which had been undergone by the researchers, several conclusions were established as follows:

1. The validation results of material expert on the developed local culture-based teaching materials reached a percentage of 90%, which implied it was very valid. Furthermore, the validation results of teaching materials experts on the developed teaching materials got a percentage of 90% which also indicated that it was very valid.

2. The results of teacher's response questionnaire to local culture-based teaching materials obtained a percentage of 100% which meant it was very practical. Supporting the finding, student response questionnaire result in small scale trial got a percentage of 93% which implied that it was very practical as it proved that the developed teaching material was teaching material that made it easier for students to comprehend topic being discussed and was practical to use in social studies classroom.

3. The statistical data analysis results of the teaching materials effectiveness using the paired Samples t-test gained the value of Sig. 0.000 < 0.05 so the accepted research hypothesis was H1: there is an average difference between the pretest and posttest. Relying on the recapitulation results, the effectiveness of teaching materials based on local wisdom in East Sumba was in the "high" criteria.

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