

# Development of Contextual-Based Interactive Multimedia of Tema Daerah Tempat Tinggalku of 4<sup>th</sup> Grade Students in Public Elementary School (SDN) 054919 Kacangan, Secanggang District, Langkat Regency

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**Abstract :** *This study aims to develop contextual-based interactive multimedia of Tema Daerah Tempat Tinggalku. This research is conducted at SDN 054919 Kacangan, Secanggang District, Langkat Regency. The population in this study are 4<sup>th</sup> grade students consisting of 30 students. The instruments which is used in this study are social studies learning outcomes tests and student response questionnaires. The data are collected and analyzed by quantitative descriptive analysis techniques. The method of this research is the development of Borg & Gall research combined with the learning development model of Dick & Carey. The trial subjects consists of learning material experts, learning design experts, two instructional media design experts, three students for individual trials, six students for small group trials and thirty students for large group trials. The results of the study show (1) The results of the trial of subject matter experts in the assessment of the content and feasibility of presentation are in very good criteria (88.09%); (2) The results of the learning design expert's test are in very good criteria (85.42%); (3) The results of the expert design study media I test are in sufficient criteria (73.21%) while the expert design test results of learning media II are on the sufficient criteria (83.92%); (4) The results of individual trials are in very good criteria (81.67%); (5) The results of the small group trial are in very good criteria (90.42%); (6) The results of a large group trial are in the criteria of good (73.2%).*

**Keywords :** *interactive, contextual multimedia*

## I. Introduction

Primary Schools / Islamic Primary Schools (SD / MI) are early primary education before entering junior high school / Madrasah Tsanawiyah (Middle School / MTs). Education in elementary schools or Islamic elementary schools is focused on forming the personality and mentality of students (Prastowo, 2013: 14). Learning is a modification or strengthening behavior through experience. According to him, this experience can be obtained from the interaction between individuals and their environment (Wirnaningsih & Mardhatillah, 2016). Considering the importance of basic education in SD / MI, the government always strives to improve the quality and relevance of basic education through: curriculum development, teacher professional improvement, development quality and excellence of basic education, and development of teaching facilities and materials. To follow up on the relevance of education, the government is intensifying its curriculum reform and the procurement of relevant textbooks used in schools. This is because books are something that cannot be separated in the learning cycle. Without books, learning will be lame. The more supporting books, the more interesting learning will be. This is no different from the case with elementary school children who are still in the stage of concrete development, namely having to use interesting and contextual learning media, both from the display, and from the content.

Therefore, it must use learning media as attractive as possible, especially the teaching materials used. Teaching materials are materials or subjects that are systematically arranged,

which are used by teachers and students in the learning process. For this reason, teaching materials in the form of multimedia learning used should adopt contextual learning. Trianto (2010: 104) explains that contextual learning can help students associate the material they learn with the real situation of students and encourage students to make connections between the knowledge they have and their application in their lives as family members and communities. Furthermore Sagala (2013: 87) revealed that children's learning would be more meaningful if the child experienced what he learned, not knowing it. Target-oriented learning mastery of material is proven to be successful in competency in the short term, but fails to equip children to solve problems in the long run.

The use of interactive multimedia in learning is able to make an abstract concept such as dynamic fluid become real with static visualization and dynamic visualization (animation), as well as the application of concepts contained in everyday life will feel easier because it can be visualized. The use of interactive multimedia is able to make a concept more attractive so that it is motivated to learn more and master it, besides being able to strengthen the response and control the speed of learning of students because interactive multimedia is interactive and independent (Mardhatillah & Trisdania, 2018).

**Table 1.** List of Percentage of Completion of Learning Outcomes of 4<sup>th</sup> Grade Students of SDN 054919 Kacangan on IPS KD Subjects. 3.3

No.	Semester/ School Year	Complete Learning Outcomes	Percentage
1	Even semester T.P 2016/2017	Complete	42,86%
		Incomplete	57,14%
2	Odd semester T.P 2017/2018	Complete	35,56%
		Incomplete	64,44%
3	Semester Genap T.P 2017/2018	Complete	40,00%
		Incomplete	60,00%
4	Odd semesterT.P 2018/2019	Complete	36,67%
		Incomplete	63,33%

(Source: Score list of 4<sup>th</sup> Grade School Year 2016/2017 s.d School Year 2018/2019 SDN 054919 Kacangan)

## II. Review of Literature

### 2.1 Nature of Learning

Learning is the most important thing that must be done by humans to deal with environmental changes that are constantly changing at any time. Syah (2011: 68) argues that generally learning can be understood as a stage of changes in individual behavior that is relatively settled as a result of experience and interaction with the environment. cognitive. Learning is a process of change from behavior as a result of interaction with the environment in meeting their needs with characteristics: (1) changes occur consciously; (2) changes in learning occur are continuous and functional; (3) changes in learning are positive and active, meaning that the changes are constantly increasing and are aimed at getting something better than before; (4) changes in learning are not temporary, but are permanent; (5) changes in learning aim and direction; (6) changes in learning cover all aspects of behavior (Suryabrata, 2011: 233).

## **2.2 The Nature of Social Studies Learning**

Social studies learning in class IV is learning that is adapted to the stages of cognitive development. Susanto (2013: 137) that the breadth of social studies covers a variety of social, economic, psychological, cultural, historical and political life, all of which are studied in this social sciences. Social Knowledge is one of the main subjects at the level of basic education. The existence of students with different social status and conditions will certainly face different problems in the course of their lives. Therefore, social studies learning is very important because the material obtained by students in schools can be developed into something more meaningful when students are in the community, both now and in the future. Social studies subjects in grade IV SD / MI consist of 3 x 35 minutes per week which includes four competencies, namely (1) spiritual attitude competence, (2) social attitudes, (3) knowledge, and (4) skills. This competence is achieved through the intracurricular, curricular, and / or extracurricular learning process.

Social studies learning emphasizes the aspect of "education" rather than the transfer of concepts because in social studies learning students are expected to gain an understanding of a number of concepts and develop and train their attitudes, values, morals and skills based on the concepts they already have. IPS also discussed the relationship between humans and their environment. Community environment where students grow and develop as part of the community and are faced with various problems in the surrounding environment. Social studies learning outcomes are optimal results of students who include spiritual attitude competencies, social attitudes, knowledge and skills acquired by students after studying social studies by finding various information needed in the form of changes in behavior, knowledge and skills so that students are able to achieve maximum learning outcomes while solving problems related to social problems and applying them to people's lives.

## **2.3 The Nature of Contextual Learning**

Berns and Erickson (2001: 2) explain "Contextual teaching and learning is a conception of teaching and learning that helps teachers relate subject matter content to real world situations; and motivates students to make connections between knowledge and its applications to their lives as family members, citizens, and workers; and engage in hard work that learning requires ". So, contextual learning is a learning approach that makes students more active in learning activities and helps students to be able to connect the knowledge gained in the classroom to the context in accordance with real life. The concept of learning that helps teachers to associate teaching material with the real world situation of the students, which can encourage students to make a connection between knowledge learned and its application in the lives of students as family members and communities (Sardiman, 2014: 222). Furthermore Johnson (2007: 14) states Contextual Teaching and Learning is a learning system that is based on the philosophy that students are able to absorb lessons when they capture meaning in the academic material they receive, and they grasp the meaning in school assignments if they can associate new information with the knowledge and experience they already had before.

Contextual Teaching and learning is a learning concept that helps teachers connect the material they teach with the real world situation of students and encourages students to make connections between their knowledge and their application in their daily lives, involving seven main components of learning effective, namely: constructivism (Constructivism), asking (Questioning), finding (Inquiry), learning community (Learning Community), modeling (Modeling), reflection (Reflection), and actual assessment (Kadir, 2013: 25) .

## **2.4 Learning Media**

Musfiqon (2012: 28) reveals that more intact learning media can be used as an intermediary between teachers and students in understanding learning materials to be more effective and efficient. Asra (2009: 5) suggests that the word media in "learning media" literally means intermediary or introduction, while the word learning is defined as a condition created to make someone do something to learn. Learning media emphasizes the position of the media as a vehicle for channeling messages or learning information to condition a person to learn.

Learning media can represent what the teacher is less able to say through words. The abstractness of the material can be concrete in the presence of learning media. Arsyad (2011: 115) suggests that the use of teaching media in the teaching and learning process can generate new desires and interests, generate motivation and stimulate learning activities and even bring psychological influences to students. The use of teaching media at the teaching orientation stage will greatly help the effectiveness of the learning process and the delivery of lesson content at that time. In addition to arousing students' motivation and interests, teaching media can also help students improve understanding, present data with interest, facilitate interpretation of data and compact information. Learning media have different characteristics from one another. Hernawan (2007: 22-34) explains the characteristics of learning media according to their types, namely. a) Visual media is media that can only be seen. b) Audio media is media that can only be heard. c) Audio visual media is a combination of audio visual or commonly called hearing media.

## **2.5 Interactive Multimedia**

According to Benny A. Prianto (2009: 212), multimedia is a program that is able to display elements of images, text, sound, animation, and video in a display that is controlled through a computer program. Daryanto (2010: 51) explains that multimedia is divided into two categories, namely linear multimedia and interactive multimedia. Daryanto (2010: 51), interactive multimedia is a multimedia that is equipped with a controller that can be operated by users, so users can choose what desired for the next process. Daryanto (2010: 52) explains that the selection of learning media with appropriate interactive multimedia will provide great benefits for teachers and students. In general, the benefits that can be obtained is that the learning process is more interesting, more interactive, the amount of teaching time can be reduced, the quality of student learning can be improved, and the learning process can be done anywhere and anytime, and student learning attitudes can be improved.

## **III. Research Methods**

This type of research was Research and Development with the design of learning development models by Dick and Carey. Steps include: 1) Conducting preliminary research; 2) Making software designs; 3) Collection of materials; 4) develop contextual-based interactive multimedia of Tema Daerah Tempat Tinggalku; 5) Product reviews and trials; and 6) Test the effectiveness of the product. This study was conducted at SDN 054919 Kacangan, Secanggang District, Langkat Regency, which is located at Kota Kota Lama Dusun VI Kacangan Karang Gading Village. The timing of the research was conducted in the even semester of the school year 2018/2019. The subjects in this study were 4<sup>th</sup> grade students of SDN 054919 as many as 30 students as a large group test and 6 students for a small group test. Data collection instruments in this development were in the form of assessment instruments to assess products

that had been developed. In addition, questionnaires were also given to students, this questionnaire was used to obtain data on the attractiveness and accuracy of the material given to students which included aspects of media display and media content. In addition, data collection in this study is a test of learning outcomes, tests are used to assess students' abilities after using contextually based interactive multimedia. Before the test is used, first the test is tested for validity, reliability, level of difficulty, and the power of different questions.

## **IV. Result and Discussion**

### **4.1 Learning Material Expert Validation**

The validation of the learning material experts on the development of contextually-based interactive multimedia on tema daerah tempat tinggal ku in 4<sup>th</sup> grade students was conducted to obtain information that would be used to improve and improve the quality of media. The results of the validation were scores on aspects of social studies learning material that included eligibility, feasibility of presentation, comments and suggestions for improvement and conclusions

From the results of the expert assessment of the learning material as a whole stated that the level of achievement of scores on the feasibility of content and the feasibility of presentation was 88.09 in the category of "Excellent". The results of the assessment of the material of economic activity and its relationship with various fields of work in the environment around the place of residence of students developed received several comments, including: (a) KD material is presented, (b) material illustrations are visually displayed video, (c) external cases the area is not optimal, (d) the glossary in the material does not yet exist, (e) the involvement of students is still in the form of problem training, and the advice is to improve it according to the results of the discussion. The conclusions from the assessment, comments and suggestions by experts in learning materials that interactive multimedia based contextually deserves to be tested in the field with revisions.

### **4.2 Validation of Learning Design Experts**

Validation of learning design experts on the development of develop contextual-based interactive multimedia of Tema Daerah Tempat Tinggalku in 4<sup>th</sup> grade of elementary school is getting information that will be used to improve and improve media quality from aspects of attractiveness, physical appearance, appropriateness of design, conformity of format, target characteristics, clarity media instructions, clarity of material exposure, and appropriateness of evaluation with material.

The conclusion from the results of the assessment by the learning design experts as a whole can be concluded that the level of achievement of the score is 85.42 with the category "Excellent". The results of the assessment of learning design in contextual-based interactive multimedia development received several comments including: (a) the media created must be in accordance with the strategy / method / learning model, (b) each meeting must be displayed KI, KD, indicators and learning objectives, (c ) learning design includes the initial activities, the core, and the closing, (d) at the end of the interactive multimedia glossary must be made, and the advice is multimedia revisions according to the comments. Conclusions from assessment, comments and suggestions by learning design experts that contextually based interactive multimedia are worthy of being tested in the field with revisions.

### 4.3 Validation of Learning Media Design Experts

Based on the results of the assessment by instructional media design experts covering aspects of media display design, media programming design, and overall media design content it can be concluded that the achievement score of media design experts 1 is 73.21 where the range is at the 65-74 score level. categorized as "Fair", and the level of achievement of scores from media design experts 2 is 83.93 where the range is at the level of achieving a score of 75-84 categorized as "Good".

The results of the assessment of media design experts 1 on the design of instructional media in contextual-based interactive multimedia development received several comments including: (a) the design was good, the menu display is also in accordance with the level of students who use it. used less interesting (c) use real and appropriate images. (d) media layout is less attractive, make it according to student needs. and the suggestion is that all data from the review of media experts are used as a basis for revising in order to perfect the content of learning media before being tested on students as users of development products. Conclusions from the assessment, comments and suggestions by learning design experts that contextual-based interactive multimedia are worthy of being tested in the field with revisions, and there are a number of comments including: (a) guidelines for use, (b) summaries are placed on each sub-theme. Conclusions from assessment, comments and suggestions by learning design experts that contextually based interactive multimedia are worthy of being tested in the field with revisions.

### 4.4 Individual Trial

Individual trials conducted in 4<sup>th</sup> A grade of SDN 054919 Kacangan, Secanggang District, Langkat Regency consisting of 3 students consisting of 1 student with high achievement, 1 student with medium achievements, and 1 student with low achievement. From the results of individual trials can be concluded that the results of the assessment and responses of individual trials on the development of contextual-based interactive multimedia as a whole are 81.67%. Based on the assessment criteria interactive learning media are stated in the category "Excellent".

### 4.5 Trial of Small Groups

Small group trials were also conducted in 4<sup>th</sup> A grade of SDN 054919 Kacangan, Secanggang District, Langkat Regency consisting of 6 students, consisting of 2 students with high achievements, 2 students with moderate achievements, and 2 students with low achievements. From the small group trials it can be concluded that the results of the assessment and responses of small group trials to the development of contextual-based interactive multimedia were obtained as a whole was 90.42%. Thus the response to the trial of the dominant small group gave a very good response to the quality of interactive multimedia based on context.

#### a. Calculating the completeness of individual learning

Based on the completeness criteria of individual learning outcomes compiled based on students' abilities, the percentage is classified in completeness criteria.

**Table 2.** Results of completeness in learning individual small scale tests

No	Students	Score (x)	KB	Information
1	A1	17	85%	T

2	A2	19	95%	T
3	A3	8	40%	BT
4	A4	13	65%	BT
5	A5	16	80%	T
6	A6	14	70%	T
<b>Total</b>		<b>87</b>		
<b>Average</b>		<b>14.5</b>		

Based on the results of individual learning completeness data obtained based on the ability of students, it can be seen that out of 6 students, there were 2 students who were "incomplete" and there were 4 students who had "completed".

b. Calculating Classical Learning Completeness

Students' classical learning completeness can be calculated using the following formula:

$$PKK = \frac{\text{Total of Completed Students}}{\text{Total of research subjects}} \times 100\%$$

$$PKK = \frac{4}{6} \times 100\% = 67\%$$

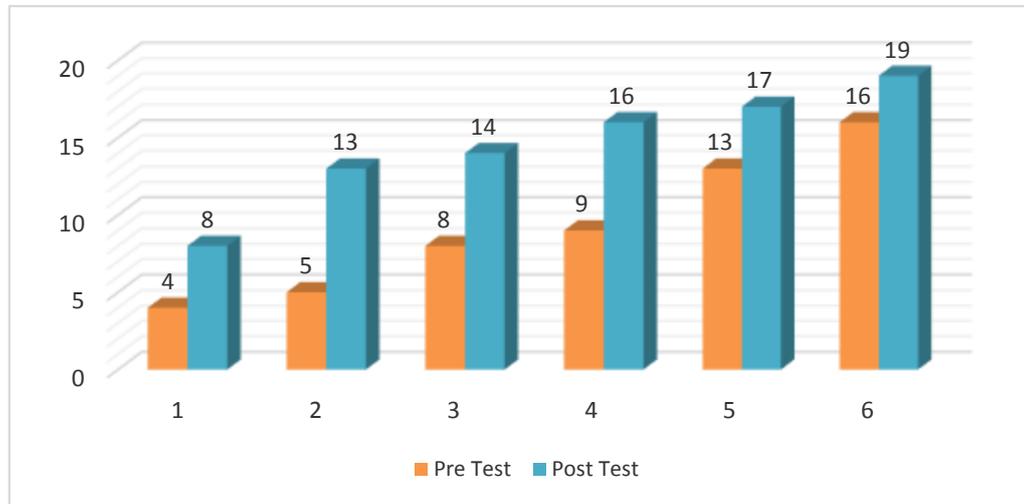
Based on the data above there are 67% of students who have achieved  $KB \geq 70\%$ . After students' completeness in the individual and classical learning process is analyzed, the results of the pre-test and post-test are calculated with the gain score.

Based on the test of the gain score obtained at 0.50, the gain score in the small scale test, which is 6 people, is classified as moderate.

**Table 3.** Results of Pre Test and Post Test for Small Scale Test Students

Pre test			Pos test			Information
Score (X)	Frequency (F)	X*F	Score (X)	Frequency (F)	X*F	
4	1	4	8	1	8	T
5	1	5	13	1	13	T
8	1	8	14	1	14	BT
9	1	9	16	1	16	BT
13	1	13	17	1	17	T
16	1	16	19	1	19	T
<b>Total</b>		<b>55</b>	<b>Total</b>		<b>87</b>	
<b>Average</b>		<b>9,2</b>	<b>Average</b>		<b>14,5</b>	
<b>Standard Deviation</b>		<b>4,6</b>	<b>Standard Deviation</b>		<b>3,8</b>	

To be more clear about the description of the results of the pre-test and post-test students can be seen in the following picture:



#### 4.6 Completeness Analysis of Large Scale Test Students

##### a. Calculating the completeness of individual learning

Students' individual learning completeness can be calculated using the following formula:

$$KB = \frac{T}{T_1} \times 100\%$$

Criteria :  $0\% \leq KB < 70\%$  of students have not finished learning

$70\% \leq KB \leq 100\%$  of students have not finished learning

Based on the data of individual learning completeness according to the results of students' abilities it is known that there are 3 students who "have not been completed" and there are 27 students who "complete".

##### b. Calculating classical completeness

Students' classical learning completeness can be calculated using the following formula:

$$PKK = \frac{\text{Total of Completed Students}}{\text{Total of research subjects}} \times 100\%$$

$$PKK = \frac{27}{30} \times 100\%$$

$$PKK = 90\%$$

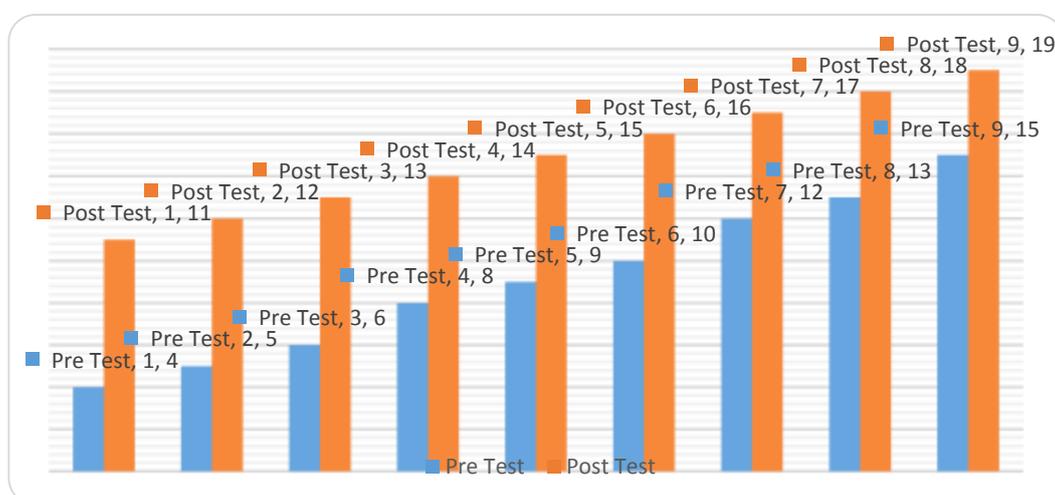
Based on the classical learning completeness data above there are 90% of students who have achieved  $KB \geq 70\%$ . After completing students in individual and classical learning in analysis, the results of the pre test and post test are calculated with the gain score. To see an increase in the value and effectiveness of multimedia developed between before and after using the optimized gain score formula. And based on the gain score the results obtained are 0.74, the gain score in the large scale test is high.

**Table 4.** Results of Pre Test and Post Test for Large Scale Tests

Pre test			Pos test			Information
Score (X)	Frequency (F)	X*F	Score (X)	Frequency (F)	X*F	
4	7	28	11	1	11	BT

5	3	15	12	1	12	BT
6	3	18	13	1	13	BT
8	3	24	14	1	14	T
9	3	27	15	2	30	T
10	1	10	16	1	16	T
12	3	36	17	4	68	T
13	6	78	18	16	288	T
15	1	15	19	3	57	T
<b>Total</b>		<b>251</b>	<b>Total</b>		<b>509</b>	
<b>Average</b>		<b>8,4</b>	<b>Average</b>		<b>17</b>	

To be more clear about the results of the pre-test and post-test large-scale test can be seen in the following picture:



#### 4.7 Discussion

To find out the feasibility of interactive multimedia based on contextualization, in this case Adobe Flash was conducted a validity test carried out by material experts, design experts, and media experts. Where each expert gives an assessment of each indicator contained in the sheet, the learning media validation is a quantitative descriptive assessment questionnaire revealed in the score distributor and rating scale category.

Based on the material expert validation, it was found that the validation assessment was 84.09% with valid criteria, but there were still improvements from material experts. Material experts suggest to improve simple words that are understood by students. After revising the percentage to 92.11% validity with valid criteria. The validator also recommends using materials that are in accordance with the area of residence according to the theme. After discussing with material experts, contextual interactive multimedia based in this case in the form of Adobe Flash was revised based on input and suggestions from the validator.

Based on the validation of learning design experts based on aspects of content, presentation, linguistic appearance and content, 78.57% were rated as good. The validator suggested that the colors in the multimedia used were more varied, and the size of the writing was slightly enlarged so that all students could see clearly. After revision, it is then appropriate to be used for students. Furthermore, the feasibility test of the media tested on individual

students obtained a percentage of 81.67% and in small-scale trials of 6 people the results of the presentation were 90.42% with very good categories and very feasible to use.

Based on the assessment given by the validator and also the assessment given by students on contextually-based interactive multimedia developed by the input provided by experts, interactive multimedia based on context in this case Adobe Flash which was developed said that validan is feasible for use in learning.

## V. Conclusion

Based on contextual interactive multimedia development on develop contextual-based interactive multimedia of Tema Daerah Tempat Tinggalku in SDN 054919 Kacangan, Secanggang Subdistrict, Langkat Regency and the discussion of the results of the studies discussed earlier, some conclusions can be drawn: 1) Feasibility of content and feasibility of presentation on media products "Based on the results of the trial trial with a percentage of 88.09%; 2) Test results of learning design experts were in excellent criteria (85.42%); 3) The results of the expert design test of learning media I were in sufficient criteria (73.21%) while the results of the expert design test for learning media II were in sufficient criteria (83.92%); 4) The results of individual trials are in excellent criteria (81.67%); 5) The results of the small group trials were in very good criteria (90.42%); 6) The results of the trial of large groups are in the criteria of good (73.2%). In addition, based on the results of the study, it could also be concluded that also contextual-based interactive multimedia development on Tema Daerah Tempat Tinggalku can improve student learning outcomes.

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