THE DEVELOPMENT OF INTEGRATED THEMATIC TEACHING MATERIALS BASED ON LECTORA INSPIRE IN ELEMENTARY SCHOOLS

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ABSTRACT

The development of teaching materials is important in current learning, in order to utilize Industrial Technology (IT) as is the case Lectora Inspire. Lectora Inspire is an effective program application in making learning media; which is software electronic learning (e-learning) which is relatively easy to apply because it does not require an understanding of sophisticated programming languages. This research intends to develop teaching materials by presenting data based on Lectora Inspire with the CTL approach in class IV SD. This research is a Research and Development with the ADDIE model, namely Analysis, Design, Development, Implementation, and Evaluation. Learning teaching materials that have been developed are assessed and validated by experts who are competent in their respective fields. The instrument that has been used in this study is a questionnaire. Questionnaire contains the teacher's responses and student responses to social studies learning media based on Lectora Inspire. Results: 1) The researcher has produced teaching materials for social studies learning media based on Lectora Inspire on life events for fifth grade students of SD / MI semester 2, 2) Expert assessment in material validation and media validation gets a percentage of 95% in very valid intervals, 3) the responses of fifth grade SD / MI semester 2 students on the practicality of Android-based social learning-based media obtained an evaluation percentage of 87%. This value is at a very practical interval. This research includes quantitative with the type of experimental research with pre-experimental methods. This research was conducted in elementary school. The sampling technique was purposive sampling, and class IV was chosen B as the experimental class. The results of hypothesis testing using the t-test with a significant level of a = 0.05 obtained $t_{count} = 16.83 > t_{table\ (0.05)\ (29)} = 2.045$ *then reject* H_0*. Meaning the development of teaching materials carried out by presenting data based on Lectora Inspire with the Contextual Teaching and Learning approach is highly recommended to be carried out in elementary schools. With the percentage after being given treatment = 0.77 or 77% in the effective category, for data collection material and 0.75 or 75% for data presentation material.*

Keywords: *Learning, Teaching Materials, Lectora Inspire, CTL.*

1. INTRODUCTION

Teaching materials are all forms of material in the form of material that is arranged systematically so that it can help teachers and students in carrying out the learning process. Takahiro Sato, Emi Tsuda, Douglas Ellison, Samuel R. Hodge (2020), Umit İzgi Onbaşılı (2020). Then this statement is also supported by Rahmadani (2018) who argues that teaching materials are all materials (both information, tools,

and text) that are arranged in a systematic manner that display a complete figure of competencies that will be mastered by students and used in the learning process.

The teaching materials are arranged because they have a purpose. Mochamad Guntur and Arif Muchyidin (in Rahmadani 2018) said the purpose of making teaching materials includes "1) Helping students learn something, 2) Providing various types of choices of teaching materials, thereby preventing boredom in students, 3) Facilitating students in carrying out learning, 4) Learning activities are more interesting.

The purpose of preparing these teaching materials can be achieved by utilizing technology (Chien, Chin-Wen, 2020). The present century is an era of development of science and technology. Therefore learning programs in schools need to apply technology-based learning. Québec Fuentes, S., Ma, J. (2018). Learning which usually involves material/physical facilities such as textbooks will develop if using technology. Diane Jass Ketelhut, Kelly Mills, Emily Hestness, Lautaro Cabrera, Jandelyn Plane & J. Randy McGinnis (2019). With this technology, it is hoped that it will be able to overcome obstacles in the learning process (Munir, 2008). Mutmainah, Rukayah, Mintasih Indriayu , (2019).

In this case a new innovation is needed in presenting teaching materials. Renewal of teaching materials can be done by utilizing technology . Unal, E. & Uzun, AM (2019). One of them is based on *Lectora Inspire. Lectora inspire* is an effective program for creating learning media and is an electronic learning development *software (e-learning*) that is relatively easy to apply or implement because it does not require an understanding of sophisticated programming languages. Muhammad Mas'ud (in Shalikhah, 2016).

Lectora inspire can be used to design interesting subject matter, display videos, and animated images related to subject matter. Chih-Lun Hung and Feng-Chin Li. (2017). This will make the learning process more enjoyable and meaningful so that it will affect the increase in student learning achievement (Shalikhah, 2016).

Based on observations made by the author on January 15 and 17 2019 at SDN 01 Bandar Create in class IV, especially in mathematics, problems were obtained from both the teacher's and students' perspectives. The problems from the teacher's point of view are 1) in conveying learning material, the teacher is only guided by existing text books, 2) the teacher has not attempted to use technology-based teaching materials in the learning process. The problems in terms of students include 1) the lack of involvement of students in finding learning concepts because the teacher does not provide opportunities for students, 2) students feel less interested in the learning delivered by the teacher. 3) students seem less interested in reading the material contained in the textbook.

To overcome the problems described above, researchers tried to use teaching materials based on the Lectora Inspire application in learning mathematics. This refers to research conducted by Zulfiati (2014) entitled Effects of ICT (Information and Communications Technology) based Social Learning with the Lectora Inspire Application in Improving Student Learning Outcomes. The results showed that student learning outcomes using the Lectora Inspire application were higher than using textbooks.

The teaching materials used by the author are made based on the components of the Contextual Teaching and Learning approach. Komalasari (2015: 7) suggests "a contextual approach is a learning approach that links the material studied with the real life of everyday students, both within the family, school, community and citizens, with the aim of finding the meaning of the material for their lives".

The contextual approach has seven components that must exist in the implementation of learning. According to Hasibuan (in Rosmala, 2018: 66-68) the seven components include 1) Constructivism, 2) *Inquiry*, 3) *Questioning*, 4) *Learning Community*, 5) Modeling (*Modeling*), 6) Reflection, 7) *Authentic Assessment*. So, the teaching materials that will be used by the author are made based on these components.

The purpose of using teaching materials based on *Lectora Inspire* with the *Contextual Teaching and Learning approach* is to see the effectiveness of these teaching materials. Effectiveness is a measure used to express the extent to which a target or goal is expected. This is supported by Hidayat's opinion (in Amir, 2015) who argues that effectiveness is a measure that states how far the target has been achieved. The greater the percentage achieved, the higher the effectiveness.

The effectiveness of teaching materials has several indicators that can be used as a reference. According to Susilo (2013) the effectiveness of teaching materials can be seen from three indicators which include (1) the teacher's ability to use teaching materials, (2) student activities in using teaching materials, (3) student learning outcomes are completed classically.

The research conducted by researchers is in the subject of Mathematics. With KD 3.11 Explaining students' personal data and their environment presented in the form of bar charts and KD 4.11 Collecting students' personal data and their environment presented in the form of bar charts. Mathematics learning carried out at SDN 01 Bandarbuat especially in class IV has implemented the 2013 revised 2017 curriculum with provisions based on the Minister of Education and Culture.

Described in Permendikbud No 24 of 2016 in CHAPTER 1 article 1 paragraph 3 "Implementation of learning in Elementary Schools/Madrasah Ibtidaiyah (SD/MI) is carried out with an integrated thematic learning approach, except for Mathematics and Physical Education Sports and Health (PJOK) as stand-alone subject for grades IV, V, and VI.

Based on the description above, this study aims to determine the effectiveness of teaching materials for presenting data based on *Lectora Inspire* with the *Contextual Teaching and Learning approach* in class IV SDN 01 Bandar Buat.

2. RESEARCH METODOLOGY

Types of research

This research is a quantitative research with the type of research that is experimental and using *pre-experimental methods*. Sugiyono (2015: 109) suggests It is said to be *pre-experimental*, namely because there is no control variable, and the sample is not chosen randomly.

Time and Place of Research

When the research was carried out in the second semester of January-June 2018/2019 school year. It consists of two meetings, namely meeting I was held on April 30 2019, and meeting II was held on May 2 2019. The research site was held at SDN 01 Bandar for the City of Padang.

Research subject

The population in this study were all grade IV students at SDN 01 Bandar Create Padang City for the 2018/2019 school year consisting of two study groups, namely

IV A and IV B. Furthermore, the sampling technique in this study was carried out using a *purposive sampling technique* . Sugiyono (2015: 124) explains " *Purposive sampling* is a sampling technique with certain considerations". So that class IV B was chosen as the sample in this study, with a total of 30 students consisting of 14 boys and 16 girls.

Research procedure

The research design used was pre-experimental, namely the *one group pretest–posttest design*. The first step is to give a *pretest* before being given treatment. The second step, giving treatment to the experimental class, the last step is to give a *posttest*. Thus the results of the treatment can be known more accurately, because it can be compared with the conditions before and after being given treatment. Research design note in table 1.

Table 1. *The One Group Pretest-Posttest Design*

Class	Pretest	Treatment	Posttest
Experiment	O_1	X	O_2

Data, Instruments and Data Collection Techniques

The data obtained in this study were in the form of student learning outcomes before and after using *Lectora Inspire -based data presentation teaching materials* with the CTL approach. The instrument used in this study was a math achievement test which consisted of a *pretest* and a *posttest*. Furthermore, the data collection technique in this study is the test technique. The test used is an objective test with multiple choice *types*. Instrument development steps were carried out by compiling tests, test trials, and item analysis.

Data analysis technique

Analysis of the data in the research is to test the requirements analysis and test the hypothesis. Requirement test a analysis that is by normality test and homogeneity test. The normality test for each data group can be tested using the Lilliefors test. Homogeneity testing was carried out in order to test the variance of each group of data. The variance homogeneity test was carried out using the F (Fisher) test.

3. RESULTS AND DISCUSSION

Research result

Media design using Lectora is presented in Figure 1, 2, 3, and 4.

Figure 1. Covers

Figure 1 shows the cover of the Lectora, in this section you can see the course titles, themes and sub-themes. In addition, the design of the image is interesting because it is *full color* and is liked by elementary school children.

Figure 2. Menu

Figure 2 contains the menu, which consists of instructions for use, competencies, teaching materials, evaluations, games, reference lists and authors.

Figure 3. Evaluation Example

Figure 3 shows an example of an evaluation, which contains questions to be solved by students.

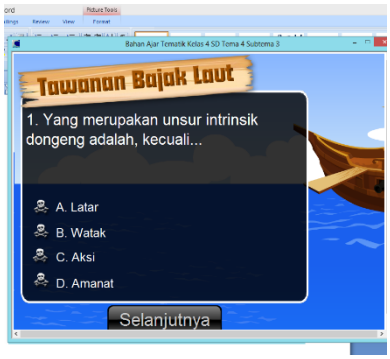

Figure 4. Objective questions

Figure 4 is an example of an objective question that students will work on, after which students will know the right and wrong answers. Data collection in this study was carried out by carrying out a *pretest* first to obtain initial data about students' mastery of the material to be presented. The pretest was held 2 times. The first *pretest* was carried out to find out the initial data about students' mastery of the data collection material. While the second *pretest* was carried out to find out the initial data about students' mastery of the material for presenting data in the form of bar charts as seen from the learning outcomes before being given treatment.

After carrying out the *pretest, the researcher then gave treatment by providing learning using Lectora Inspire*-based data presentation teaching materials. The

treatment was carried out in 2 meetings with the time allocation in this study being 3 x 35 minutes or 3 hours of lessons.

After being given treatment using *Lectora Inspire based data presentation Teaching Materials* with the *Contextual Teaching and Learning approach*, then the researcher carried out a *posttest*. *Posttest* was also carried out 2 times. *Posttest* 1 is given with the aim of seeing student understanding related to data collection material and *posttest* 2 is given with the aim of seeing student understanding regarding data presentation material after being given treatment.

From the results of *pretest* 1 obtained students who scored 46 as many as 5 people, scored 54 as many as 8 people, scored 62 as many as 9 people, scored 69 as many as 4 people and scored 77 as many as 3 people. Meanwhile, from the results of *pretest* 2, it was found that students who scored 33 were 1 person, scored 40 were 1 person, scored 47 were 3 people, scored 53 were 10 people, scored 60 were 7 people, scored 67 were 5 people, and scored 73 were 2 persons.

Based on the results of *pretest* 1 and 2, the average value of each student is taken so that 2 students get 47, 1 person 48, 2 people 50, 1 person 51, 2 people 53, 4 54 people, 55 by 1 person, 57 by 1 person, 58 by 4 people, 61 by 3 people, 65 by 3 people, 68 by 2 people, 72 by 1 person, 75 by 2 people and 1 student who did not take the *pretest.* A total score of 1695 was obtained with an average value of 56.5.

From the results of *posttest* 1, it was found that there were 4 students who scored 69, 16 students scored 77, 6 students scored 85, and 1 student scored 100. Meanwhile, from the results of *pretest* 2 that had been carried out, it was found that there were 4 students who scored 67, 9 students scored 73, 8 students scored 80, 8 students scored 87.

Based on the results of *posttest* 1 and 2, the average value of each student is taken so that 1 student gets 68, 3 71, 3 72, 4 75, 6 79, 1 82 people, and 1 student did not take the *posttest* because he was not present. A total score of 2286 was obtained with an average value of 76.2. The average value of the pretest and *posttest is* presented in Figure 5.

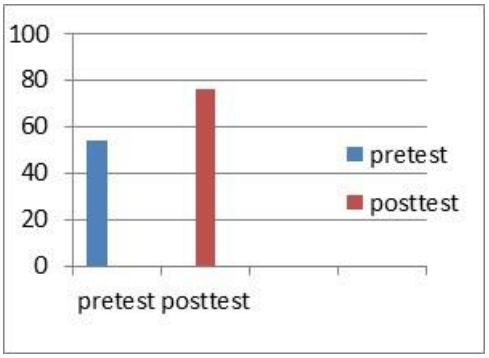

Figure 5. Graph of comparison of pretest and posttest average scores

Furthermore, measuring the effectiveness of teaching materials. The results of effectiveness measurements were carried out to see how much effectiveness of teaching material sheets for presenting data based on *Lectora Inspire* with the *Contextual Teaching and Learning approach* was obtained from student learning outcomes before and after being given treatment. Based on student learning outcomes, effectiveness before being given treatment = 0.57 or 57% (effective enough) for data collection materials and 0.55 or 55% (effective enough) for data

presentation materials. Effectiveness after being given treatment = 0.77 or 77% (Effective) for data collection materials and 0.75 or 75% for data presentation materials.

Furthermore, hypothesis testing was carried out using the t-test technique from Sudijono (2009: 305) as follows:

$$t = \frac{M_D}{SE_{M_D}} = \frac{19,7}{1,17} = 16.83$$

Thus, it can be seen that at a significant level of 0.05 $t_{count} > t_{table\ (0.05)\ (29)}$ with 16.83 > 2.045 then reject H_0 and accept H_1. So it can be concluded that the hypothesis in the research is accepted, namely that there is effectiveness of teaching materials for presenting data based on *Lectora Inspire* with the *Contextual Teaching and Learning approach* in elementary schools *.* With the percentage of effectiveness after being given treatment = 0.77 or 77% (Effective) for data collection material and 0.75 or 75% for data presentation material.

Presentation of data is one of the mathematics materials studied in elementary schools and needs to be mastered by students so that they can take part in further mathematics learning at the next level of education and do not fail in learning related to data presentation.

So that an effort is needed to improve students' mastery of data presentation material by presenting teaching materials related to students' daily lives and in accordance with the basic competencies to be achieved in learning. In addition, the existence of this teaching material can make students more active and make learning more interesting.

Based on the findings in this study, learning to present data using teaching materials based on *Lectora Inspire*, learning looks interesting so that students become more active in the learning process. The other advantages of *Lectora Inspire* are that the learning system is more interactive, able to combine images, audio, music, video and animation in one unit, and is able to visualize abstract material. Thus it is necessary to see the effectiveness of the *Lectora Inspire -based teaching materials*.

With the development of teaching materials based on *Lectora Inspire*, the developed teaching materials have three indicators that can be used as a reference for the achievement of these teaching materials. Savard, Annie & Cyr, Stéphane (2018). This is as stated by Susilo (2013) which includes (1) Teacher abilities, (2) Student activities, (3) Student learning outcomes are completed classically.

Discussion

In discussing this research, it can be seen from several aspects as follows:

The ability of teachers in the use of teaching materials

The teacher's ability to use teaching materials is illustrated by the teacher's activities (Wim JCM van de Grift, et.al, 2019). Then in teaching data presentation material using teaching materials based on Lectora Inspire with the Contextual

Teaching and Learning approach in which there are instructions for use that can be used as a guide for teachers in using these teaching materials. So that the use of teaching materials is more directed and coherent and makes it easier for the teacher to convey the material contained in it.

Student activity in using teaching materials

Student activity in using teaching materials can be seen based on the components of the *Contextual Teaching and Learning approach* contained in teaching materials based on *Lectora Inspire* . Student activities become more focused and coherent with this teaching material (Puhala, 2020).

Student learning outcomes

Good student learning outcomes are the estuary of the effectiveness of the *Lectora Inspire -based teaching materials* . Based on the results of the *posttest* given to class IV B, a total value of 2286 was obtained with an average score of 76.2. Based on the analysis of research data that has been done by researchers using the t-test formula, obtained t_{count} = 16.83, while the test criteria with dk = 1 in the significance level table (a) 0.05 = 2.045 or can be written 16.83 > 2.045. So that $t_{count} > t_{table}$ l, this means that the working hypothesis (H_1) is accepted and the null hypothesis (H_0) is rejected. In the sense that there is a significant difference between learning outcomes before and after using *Lectora Inspire -based data presentation teaching materials* with the *Contextul Teaching and Learning approach* in class IV B SDN 01 Bandar for the 2018/2019 Academic Year.

Based on student learning outcomes, effectiveness before being given treatment = 0.57 or 57% (effective enough) for data collection materials and 0.55 or 55% (effective enough) for data presentation materials. Effectiveness after being given treatment = 0.77 or 77% (effective) for data collection materials and 0.75 or 75% for data presentation materials. Thus it can be concluded that teaching materials for presenting data based on Lectora Inspire with the Contextul Teaching and Learning approach are effectively used.

4. CONCLUSION

Based on the research results obtained after conducting analysis and discussion of the problems that have been raised in the research and hypothesis testing has been carried out using the *t -test* with a significant level of α = 0.05 obtained t_{count} = 16.83 and $t_{table\ (0.05)\ (29)}$ = 2.045 so that $t_{count} > t_{table\ (0.05)\ (29)}$ then reject H_0 and accept H_1. In the sense that there is effectiveness in the use of animation in teaching materials for presenting data based on *Lectora Inspire* with the *Contextual Teaching and Learning approach* in elementary schools . With the percentage of effectiveness after being given treatment = 0.77 or 77% (Effective) for data collection material and 0.75 or 75% for data presentation material.

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