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Improving Elementary School Student's Achievement through Development of Savi-based Thematic Instructional Media

[1]Rusmin Husain, [2]Herni M

ABSTRACT

The objective of this qualitative study was to examine the effectiveness of the development of thematic lesson plan with SAVI (somatic, auditory, visual, intellectual) model to improve learning outcomes of fifth-grade students of SD 7 State Elementary School in Lemito. The model of this study was a research and development, which adapted 4-D (define, design, develop, disseminate) model by Triagarajan, Semmel, and Semmel. Further, the testing of the developed media was carried out in three steps, namely individual testing, small-scale testing, and field testing. All data were collected from the validation sheets of the instructional media, observation sheets of students' activities, and evaluation tests. The result of the simulation and limited testing indicated that the implementation of the thematic lesson plan with the SAVI model was effective in enhancing students' achievement in learning; it was in a high category. For this reason, it was expected that the developed lesson plan would be used in schools for a better learning performance of the students.

Keywords: *SAVI-based Instructional Media, 4-D Development Model, Development of Instructional Media*

I. INTRODUCTION

Brunner defines learning as an active process of students to develop new knowledge based on their prior knowledge and experience. On top of that, learning is not a matter of transferring knowledge to the students. The notion of learning rather focuses on the way human brain works to process and interpret new experiences and expertise in a new format (Buchori & Trianto, 2007). The 2013 Curriculum points out that learning is not always about studying concepts, theories, and facts. The process also encompasses the application of the teaching in daily life. Such a notion is in line with the learning activities at elementary schools. The learning process at elementary schools comprises several disciplines, which are integrated into one theme; this

[1] Faculty of Education, Universitas Negeri Gorontalo, Indonesia
[2] Faculty of Education, Universitas Negeri Gorontalo, Indonesia

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concept is well-known as thematic learning. In addition to learning concepts, the activities of learning at elementary schools also incorporate the implementation of teaching in daily life.

Teachers believe that learning with the lecture method is effective in achieving the learning objectives. Discussion or activities that involve students can be excessively time-consuming. This speculation makes students less creative in solving problems, low participation, not optimal in teamwork, inefficient in teaching and learning activities that cause low learning outcomes.

Numerous learning models can be chosen to create active, creative, and fun learning. One of them is SAVI (Somatic, Auditory, Visual, and Intellectual). SAVI learning model is a learning model that involves physical and sensory activities in the body that support learning so that the whole body, mind, and emotions are included in the learning process (Meier, 2003). Several previous studies have shown that SAVI learning model gives reasonable results which seen from an increase in learning motivation, learning achievement, and problem-solving skills and critical thinking (Fauziah, Winarti, & Kartono, 2017; Taneo, 2016; Mariya, Mastur, & Pujiastuti, 2013; Iskandar, Hamdani, & Suhartini, 2016; Kaltsum & Wijayanti, 2012)

Based on the researches that have been done before, the renewal in this study lies in the development of learning tools in the form of Syllabus, lesson plan, and student worksheet that refer to the Somatic-Auditory-Visualization-and-Intellectually-based Creative Problem Solving (CPS) learning model. The SAVI model is chosen because each individual who learns has a different learning style; some individuals learn from memorization, try, see, and other activities so that the concept of learning can imprint on their memories. Lack of student activities in the learning process is one of the causes of the ineffective learning model used. Therefore, SAVI model is able to answer this problem.

From the descriptions above, the researchers are intrigued to make a study entitled "Development of SAVI-Based Thematic Instructional Media in Elementary School." The objective of this qualitative study was to examine the effectiveness of the development of thematic lesson plan with SAVI (somatic, auditory, visual, intellectual) model to improve learning outcomes of fifth-grade students of SD 7 State Elementary School in Lemito.

II. RESEARCH METHODOLOGY

This present study is research and development using a qualitative approach. The media that have been revised and validated were then field-tested. In developing learning tools, the study employed the 4-D development model (define, design, develop, disseminate) developed by Triagarajan, Semmel, and Semmel (Al-Tabany, 2014). The 4-D development model is a model that has clear and systematic steps so that it is chosen as the model in this study. The learning media testing was carried out in three steps; namely, individual testing, small-scale testing, and field testing. The subject of research is students of class V SDN 07 Elementary School in Lemito, Gorontalo City, Indonesia. All data were collected from the validation sheets of the instructional media, observation sheets of students' activities, and evaluation tests. The data obtained were

analyzed quantitatively in the form of a description of each aspect of the assessment of the experts, small-scale testing results, and modules field testing.

1. Data Analysis of Instructional Media Validation Results

The validation of instructional media was analyzed with qualitative and quantitative analysis. The scores obtained from each aspect were averaged so that the quality of instructional media was attained as a form of the feasibility of the instructional media. The formula for calculating the average score for each instructional media is:

$$\bar{x} = \frac{\Sigma x}{n}$$

Description:

$\bar{x}$ = average score

Σx = Total Index per Strata average of n validators

N = total of validator

The feasibility of the instructional media can be seen in the validation criteria of the average score analysis presented in Table 1.

Table 1. Criteria of Validity Analysis of Average Score

Average	**Validity Criteria**
3.75 – 4.00	Valid, can be used without revision
3.00 – 3.75	Moderate, can be used with few revisions
2.25 – 3.00	Low, can be used with major revisions
1.50 – 2.25	Not valid, require total revision, cannot be used

(Arikunto, 2013)

2. Data Analysis of the Observation Results of Students' Activities

Data observations of students' activities completed by three observers were obtained by giving a score of 1, 2, 3 or 4. Each score represented the number of students who carried out each observation aspect. The percentage of student activity was calculated using the formula below:

$$\%\ of\ activeness\ = \frac{total\ score\ indicator}{maximum\ score} x100\%$$

The percentage of activeness of the three observers was average. Moreover, these scores were analyzed and categorized according to the categorization in Table 2. According to Purwanto (2010), students are active in the very good category if the percentage of activeness reach ≥ 85%; they are active in the good category if the percentage of activity is between 70% -85%; they are in

category poor if the percentage of activeness is between 55%-70%< 70% and ≥ 55%, and; they are in not good category if the percentage of activeness is < 55% (Purwanto, 2010).

3. Data analysis of cognitive learning outcomes

Cognitive learning outcomes of students from pre and post-tests were calculated using the average acquisition of each number with the formula:

$$score = \frac{total\ score\ achieved}{total\ overall\ score} x100\%$$

The formula is to determine whether or not there is an increase in thematic learning outcomes in the student's cognitive domain after the use of SAVI-based instructional media in terms of the average initial test and the average final test score of students after going through the learning process. This increased ability can be analyzed with the Hake formula (Mursalin, 2014).

Table 2. Category of Normalized Gain Value

Equation	Gain Value	Category
$\langle g \rangle = \frac{X_{post} - X_{pre}}{100 - X_{pre}}$	$\langle g \rangle \geq 0.7$	High
	$0.3 \leq \langle g \rangle < 0.7$	Moderate
	$\langle g \rangle < 0.3$	Low

Description:

X_{post} = average score of post-test

X_{pre} = average score of pre-test

III. RESULTS AND DISCUSSION

Results

1. Validation and revision

The compiled draft was validated to find out the weaknesses and strengths of the lesson plan draft that was reviewed by the experts. The results of the validation from 2 experts are as follows.

a. Experts Assessment

The results of the validation of draft 1 by the experts are presented as in Table 3. It shows that draft 1 is valid and able to be used with a slight revision.

Tabel 3. Assessment Results by the Experts

o.	**Indicator**	**Score**	
		Validator 1	**Validator 2**

	The completeness of lesson plan components according to the 2013 curriculum	4	4
	Inclusion of students' preparation activities for learning, motivating, apperception, learning objectives, information, and material information.	3	3
	Assessment of learning outcomes includes affective, cognitive and psychomotor assessments	4	4
	Formulation of apparent learning objectives for high-level thinking skills.	4	4
	The formulation of explicit learning objectives ABCD aspects in formulating learning objectives (A=audience, B= behavior, C=condition, D=degree)	4	4
	Organization of learning material that is clear, coherent and systematic	4	4
	Learning resources by the level of development of students, students' material and contextual environment	3	3
	The consistency of scope of the material substance with the learning objectives	4	4
	Organizing the material in accordance with the development of students	3	3
0	Listed initial activities, core, and final activities in the learning experience that describe the methods, media and learning resources and involving students	4	4
1	The steps (learning experience) following the learning objectives and the time allocation for each step	4	4
2	Learning activities according to the SAVI learning model (Somatic, Auditory, Visual, Intellectual)	4	4
3	Include 5M activities (Ask, Observe, Explore, Associate and Communicate) in the learning experience of learning activities	4	4
4	The learning process applies the principle of internalizing values that develops understanding, action and reflection abilities	4	4
5	Utilizing learning models that activate and make students creative	4	4
6	Including assessment of the process and learning outcomes by using instruments for authentic value-oriented assessments	3	3

7	Appropriateness of assessment instruments with learning objectives to be achieved	4	4
8	Including a joint assessment formulation of the assessment process, tests, and other types of assessment	4	4
9	Inclusion of reference sources in the lesson plan	3	3
0	In accordance with enhanced spelling	4	4
1	Not contain multiple meanings	3	3
2	Unity in sentence	3	3
3	Easy to understand	4	4
4	Accuracy in selecting font types and sizes.	4	4
5	Clarity of printed matter	4	4
6	The neatness of presentation format	4	4
Average		**3.73**	**3.73**

b. Simulation

The simulation was conducted on 15 students at the control school. This trial is a practical test and it examines the effectiveness of SAVI model lesson plan. Outcomes of the data analysis simulation are in table 4.

Table 4. Observation Data of the Activity of 15 Students

No.	**Activities of Students**	**Meeting (%)**				**Average (%)**
	Somatic	00	00	00	00	100
	Audio	4	4	4	6	95
	Visual	8	8	2	2	90
	Intellectual					8

		5	2	5	0	6

Based on the above data, the highest percentage of student activeness is in the Somatic section with a value of 100%. Not only student learning activities but also student learning outcomes are analyzed. These are depicted in the following Table 5.

Table 5. Learning Outcomes of 15 Students

o.	**Name**	**Score of Theme 2**		**Score of Theme 4**	
		re	**ost**	**re**	**ost**
	Al Ramadhan Dunggio	0	5	2	8
	Ardika Yusup Gonta	8	5	5	5
	Fahril Ibrahim	8	0	3	5
	Febriwan Latif	9	5	5	7
	Iqbal Y. Neu	0	5	0	7
	Ical Habu	7	5	2	5
	Moh. Agung Aldirasyah Bamu	5	0	1	5
	Mohamad Rizki Ismail	0	0	0	5
	Mohammad Dandy Pakaya	3	0	9	5
0	Pragio Suaib	3	0	9	5
1	Ayu Dunggio	0	0	3	5
2	Aziza Ali	3	3	0	0
3	Inaya M.Pakaya	8	5	0	3

4	Nazla Putri Nuwa	5	0	0	0
5	Sri Yulan Kadir	3	0	0	7
Mean		**7**	**3**	**9**	**3**
N-Gain		**0.76**		**0.76**	

The results were obtained by giving questions at the beginning and end of learning. Following this process was the analysis using the Hake equation. The average cognitive learning outcomes of students in Theme 2 before using the SAVI model is 27, and after using the SAVI model is 83, meaning that the N-Gain value is 0.76. In Theme 4, the average learning outcomes before using the SAVI model were 29, and after using the SAVI model was 83 so that the increase in learning outcomes in the N-Gain figure is 0.76.

Test requirements analysis is needed to determine whether data analysis for hypothesis testing can be continued or not. This study used a t-test to find out significant differences in the mean values of the two sample groups.

Hypothesis:

H_0: there is no difference in learning outcomes between before and after the test ($t_{count} \geq t_{table}$)

H_1: there is a difference in learning outcomes between before and after the test ($t_{count} \geq t_{table}$)

Based on the critical value of the Lilliefors test for 30 samples with a significance of 0.05, it is revealed that the t_{table} = 0.1701 t_{count} = 7.9. Therefore, H1 is accepted ($t_{count} < t_{table}$). Based on the results of the statistical test, the questions are able to be used in the next trial.

c. Limited trial

Limited trials were conducted on 19 students. The results of this trial are the results of the cognitive learning and learning activities of students. The average cognitive learning outcomes of students are presented in Table 6.

Table 6. Data of Learning Outcomes of 19 Students

o.	**Name**	**Score of Theme 2**		**Score of Theme 4**	
		re	**ost**	**re**	**ost**
	Abdul Raffi Suko	0	0	3	3
	Ismail Pakaya	0	0	0	3
	Moh. Fahril				

	Tosan	8	5	1	8
	Moh. Algazali Dunggio	9	0	0	9
	Pitrawan Pakaya	9	0	5	2
	Revaldo Rasyid	0	0	3	2
	Riyanto Albakir	0	0	0	5
	Renaldi Radjamuda	0	5	3	7
	Adelia Yusup	3	5	2	3
0	Astriyanti Rantung	0	0	8	2
1	Hasnawati Dautina	3	5	2	5
2	Kirana Mei Zahra	3	5	2	5
3	Marshanda Pakaya	8	5	5	7
4	Nadia Salsabila	0	5	0	7
5	Nur Fajra M. Rauf	3	5	5	5
6	Putri Najiha Karim	5	0	5	2
7	Riyanti Adam	3	5	2	7
8	Salmawati Dunggio	3	5	2	8
9	Zulfiha Mohi	5	5	0	5
Average		**5.37**	**3.95**	**0.95**	**5.53**
N-Gain			**0.78**		**0.79**

The N-Gain score or improvement in learning outcomes in Theme 2 is 0.78, and in Theme 4 is 0.79. This score shows that the SAVI model of instructional media can improve cognitive learning outcomes of students with high categories.

In addition, cognitive learning outcomes of students, limited trials also observe student learning activities from observation activities. These are depicted in the following Table 7.

Table 1 7. Observation Data of the Activity of 19 Students

o.	**Activities of Students**	**Meeting (%)**						**Average (%)**
	Somatic	00	00	00	00	00	00	100
	Audio	4	4	4	6	5	6	95
	Visual	8	8	2	2	00	8	93
	Intellectual	9	5	7	6	5	7	87

IV. Discussion

1. The effectiveness of the model

Based on the results of the study, the learning outcomes of the students in simulations are increased by 0.76 on both themes. At the same time, limited trials acquire a significant increase in cognitive learning outcomes in Theme 2 by 0.78 and Theme 4 by 0.79. This value shows an improvement in learning outcomes included in the high category, signifying that the lesson plan with the SAVI model is sufficient to improve students' cognitive learning outcomes. The absolute result that is aimed by researchers in developing this lesson plan is an increase in students' cognitive learning outcomes. In short, a Lesson plan with the SAVI model is effective in learning. This is in accordance with the third characteristic of a development product stated by Nieven, which is to produce the desired results or referred to effectiveness.

2. Discussion of product

The product produced in this study is a thematic lesson plan of grade V in the first semester with SAVI model. The advantage of this product is that it can be used by other schools that have not utilized new learning styles of students in learning. It also has passed the assessment stage from experts, the testing phase, and the analysis of improvements to produce valid, practical, and effective criteria compared to the basic lesson plan.

3. Lesson Plan Validity

According to the validation results from the validators regarding the Thematic lesson plan with the SAVI model, the average validation score of the two validators gets 3.73. This means that the lesson plan is valid and feasible. This criterion is in accordance with Arikunto's validation criteria (2013) reference, which states that if the average value of validation is at 3.00-4.00, the quality of the product being developed is valid and can be used with/without revision (Arikunto, 2013).

4. Practicality of Lesson Plan

As the percentage of activeness of students, it can be seen that the activeness category of students is very good. Students are active with a very good category if the percentage of activeness reaches more than equal to 85%. This is following the activity category stated by Purwanto (Purwanto, 2010).

V. CONCLUSION

The validation conducted by the validators gives the result that the Thematic RPP with SAVI models is valid and is suitable for use with minor revisions. It means that the Thematic lesson plan is ready to be directly tested on the field, namely to the fifth-grade students of SDN 07 Elementary School in Lenito. The result of the simulation and limited testing indicated that the implementation of the thematic lesson plan with the SAVI model was effective in enhancing students' achievement in learning; it was in a high category. For this reason, it was expected that the developed lesson plan would be used in schools for a better learning performance of the students.

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