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Implementation of SAVI Learning Model Through Practicum Activities Towards Students Science Learning Outcomes

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Abstract

The study aims to explain the influence of implementation of SAVI learning models through practicum activities toward 4th-grade students outcomes in science learning. The research methodology used was quasi-experimental with the nonequivalent pretest-posttest control group design. The research results show that the implementation of SAVI learning has a significant influence on improving cognitive, affective, and psychomotor of students. The cognitive, affective, and psychomotor aspect of a student of practicum class gained better scores than that of the control class. It was indicated from the treatment by using the SAVI learning model through practicum activities in the experimental class while the control class was treated using the expository model. The affective domain learning outcomes achieved scores of 83.7; the cognitive domain learning outcomes with 76.48 points and psychomotor domain learning outcomes get scores of 84. Based on the results of the research that has been obtained, it can be concluded that the ability of students to conclude the results of the practicum can be improved by using the application of the SAVI learning model.

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INTRODUCTION

The implementation of national education must receive serious attention from both the government, stakeholders and the community to achieve the expected educational goals. Educational goals can be achieved if the teaching and learning process was well organized, precisely, and meaningfully. One effort to achieve educational goals is to improve learning in the classroom, in terms of learning process devices, models, and media. The improvement will give hope that students can achieve competency goals in Curriculum 2013.

Learning methods that can train competency, one of which is science learning in elementary schools, is practicum activities which developed with SETS vision. Practicum activities are an integral part of science learning that reinforces the mastery of concepts. The theory conveyed in learning can be tested through practicum so that students have a better understanding of the concepts conveyed. There are several reasons for practicum activities, according to Suryawan, Binadja, and Sulistyorini (2015), namely: (1) practicum generate motivation to learn science; (2) practicum developing basic skills in carrying out experiments; (3) practicum becomes a vehicle for learning scientific approaches, and fourth, practicums support the understanding of subject matter.

Practicum activities with SETS vision can provide experiences for students in the cognitive, affective, and psychomotor domains. The cognitive domain, students will gain an understanding of the material being taught. In the affective domain, the scientific attitude of trained students in practicum activities is SETS vision. In the psychomotor realm, train the skills of students in working using practicum tools and materials.

Science learning is an effort to understand the nature of science as a product, process, and develop a scientific attitude (Sugiyono, Sulistyorini, and Rusilowati, 2017). Pratama, and Kasmadi (2014) argue that process skills are also able to provide students with experience so, it will increase their ability to take responsibility for their learning. Moreover, life in the modern era depends on science and technology. The education system must certainly require learning that always cultivates scientific activities. Thanks to the scientific culture that is carried out require a scientific skill for daily needs (Aydin, 2013). Technology and science are also very closely related to scientific product breakthroughs by scientists. Adolphus, and Arokoyu (2012), agrees with Kirch (2007) that science process skills make students able to ask questions and generate ideas and explain the results of lab work in the learning process.

If the learning approach used involves the active role of students in the learning process, then it can improve student learning outcomes. One learning approach that can be used is the SAVI approach. Mulyono (2014) states that the SAVI model is one learning model that can activate physical movements with intellectual activity and the use of all senses in students.

The advantages of the SAVI model according to Sarnoko, Ruminiati and Setyosari (2016), include (a) fully awakening students' integrated intelligence through the incorporation of physical motion with intellectual activity, (b) creating a better, interesting and effective learning atmosphere, (c) being able to generate creativity and improving psychomotor abilities of students, (d) maximizing the sharpness of students' concentration through visual, auditory and intellectual learning, (e) the approach offered is not rigid but varies greatly depending on the subject matter, and learning itself, and (f) can create positive environment.

In addition to the SAVI model, the learning methods that can be applied in science learning activities are methods of practicum activities. Practicum comes from the practice word, which means the actual implementation of what is called in theory. Suherman, and Winataputra (1993) states that the practicum method is a way of presenting which is actively arranged to experience and prove itself about what is learned. Practicum is very important in science learning to achieve science learning goals (Rustaman in Surtikanti, Adisendjaya, and Fitriyani, 2001).

The reason for practicum activities, namely (1) practicum evokes motivation to learn science, (2) practicum develops basic skills in carrying out experiments, (3) practicum becomes a vehicle for learning scientific approaches, (4) practicum support understanding of subject matter (Suryawan, 2015). Practicum activities have a very large role in the success of the teaching and learning process because three forms of skills can be achieved through the process of teaching practicum.

The three forms of skills are cognitive, affective, and psychomotor skills (Utomo in Surtikanti, Adisendjaya, and Fitriyani, 2001). With cognitive skills, students can understand the theory more deeply. Khery, and Raodyatun (2014) explained that cognitive science involves emotions, the whole body, all senses, and respect for people learning in different ways. Affective skills, students encourage them to be able to learn in working together and independent learning, while psychomotor skills, encourage participants to learn to be able to work in an experiment.

Based on the description above and reinforced by the opinion of McPhearson, Gill, Pollack, and Sable (2008) that a country's literacy skills are closely related to the economic level in the country. If all can literate science, of course, they will be able to have reliable scientists for the progress of a country. At least if each literates science, they will be able to read the conditions of change that exist so that they care more about the earth and its environment.

Isrok'atun, and Rosmala (2014) explain that the SAVI approach allows students to be actively involved by connecting physical motion and intellectual activity and directing students in finding various alternative information from various sources obtained through the five senses of students. The SAVI approach is an approach that integrates somatic, auditory, visual, and intellectual elements in learning so that learning becomes student-centered.

The SAVI approach has a broad scope, so a method is needed so that the SAVI approach can be applied directly in learning. One method that can be used to implement the SAVI approach is a practicum approach. Practicum methods become an integral part of science learning (Sagala, 2005). Practicum methods can encourage students actively and directly to gain knowledge and understanding of theory through an experiment (somatic, visual) and talk about what is being studied (auditory) and think about problems faced and make conclusions (intellectual). Wenning (2010) states that the intellectual abilities of students are; hypothetical inquiry, real word application, inquiry laboratory, inquiry lesson, interactive demonstration, and discovery learning. Therefore, it can be concluded that the practicum will be right on target if the goals are well understood by teachers and students (Wasilah, 2012).

METHODS

This research is a quantitative research quasi-experimental design. The quasi-experimental design used in this study was the pretest-posttest nonequivalent control group design, according to Sugiyono (2016).

The population in this study were all fourth-grade students in SDN Karang Anyar Cluster Semarang District, amounting to 378, consisting of 7 Elementary Schools. Gayamsari 01 Elementary School, which numbered 66 selected as the research sample, was one class with 33 and Gayamsari 02 Semarang SDN, which amounted to 66 which were selected as the sample of the study with 33 students. The experimental group will be treated by using the SAVI model through practicum activities with the control group being treated using the expository model.

In this study, the independent variable or independent variable is the SAVI learning model of learning outcomes. The SAVI learning model is a treatment given to students who are the subjects of research. The dependent variable or dependent variable in this study is through practicum activities on the learning outcomes of science materials on energy sources in fourth-grade students of elementary school. The material was chosen because of the class teacher observer that students meet difficulties in distinguishing changes in energy forms. Therefore, science learning needs to use demonstration tools for practicum activities.

The research consists of three stages, namely the preparation, implementation, and analysis of data. The following is an explanation of the three stages.

1. The preparation phase of the researcher begins with the preparation of learning tools consisting of the syllabus, lesson plans, teaching materials, worksheets, and preparation of learning instruments, namely test instruments.
2. The stage of data collection, previously tested the test instrument to determine the level of accuracy and determination of a test instrument. Then the pretest was given to determine the students' initial abilities. In the learning process, students are treated by using the SAVI learning model through practical activities in the experimental class while the control class is treated using the expository model. At the end of learning, students are given a posttest to measure the dependent variable.

The next stage is data analysis for the control group, and the experimental group then concludes based on the research data.

RESULTS AND DISCUSSION

On the cognitive learning outcomes of students who are taught by the SAVI learning model through practicum activities held by science learning outcomes of fourth-grade students Elementary School. Somatic which is a body movement that requires learning by experiencing and doing. Auditory emphasizes the learning process through listening, listening, speaking, presentation, arguing, and responding. Visual means are learning by using the meta senses through observing, drawing, demonstrating, reading, using media, and teaching aids. Intellectual meaningful learning by emphasizing the ability to think.

Affective learning outcomes students can use an observer sheet instrument approved by the observer at each learning meeting. Students who can be seen 33 people know the affective value. The influence of the SAVI learning model through practicum activities on science learning outcomes is presented in table 1.

Table 1. Students Learning Outcomes in Affective Domain

Meeting	Affective value	Criteria
1	69	Moderate
2	84	Good
3	83.7	Good
Average	82	Good

Learning activities that support the improvement of the affective domain are encouraging students to be smart, active, and behave well. Study of learning outcomes in the cognitive domain of maximum classical completeness (MCC) values of post-test experimental classes are shown in table 2.

Table 2. Mastery learning Individuals and Classical Post-test Classes Experiments and Controls

Class	Accepted	MCC	Percentage (%)	
			Cmplt	Not Cmplt
Experiment	76.48	70	81.82	18.18
Control	73.7	70	75.76	24.24

The sample t-test results are t-test obtained t_{value} = 4.6, and t_{table} calculation is 2.0. Because $t_{value} > t_{table}$ is 4.600> 2.000, then H_0 is rejected, and H_a is accepted. With a real level of $\alpha = 0.05$, dk = 64 is obtained t_{table} = 2.0. The reject criterion is H_0 if $t_{value} > t_{table}$. Obtained t_{value} = 4.6 because $t_{value} > t_{table}$ then H_a accepted means there is a significant difference between the control class and the experimental class. The average cognitive learning outcomes of the control class are 73.7, and the experimental class is 76.48. The t-test analysis can be summarized in table 3.

Table 3. Hypothesis Test Results of Post-test Experimental and Control Groups

Sources of variation	Class	
	Control	Experiment
Score	2524	2432
Average	73.7	76.48
S_1^2	12.2	
S_2^2	12.4	
S	3.5	
t_{value}	4.6	
t_{table}	2	
Caption	Accepted	

Learning activities that support the improvement of cognitive domains are in the form of knowledge gained through conducting experiments, research, discoveries, and observations.

The influence of the SAVI learning model through practicum activities on science learning outcomes in the psychomotor domain can be seen from the photos and data of student research data, as presented in figure 1-4.

Figure 1. Submission of Learning Objectives

Figure 1 the submission of when the teacher conveys the learning objectives, the picture shows that students listen and are enthusiastic about the learning objectives.

Figure 2. Submission of Material via Video (Auditory)

Figure 2 the submission of when the teacher displays a video of learning material, students are seen listening in the process of thinking and expressing opinions.

Figure 3. Practicum of Heat Energy, Sound Energy, and Wind Energy (Somatic and visual)

Figure 3 the submission of students are seen making observations of practicum activities, where students can learn to use their senses.

Figure 4. Deliver The Results of The Discussion, Question and Answer with Other Groups and Solve Problems (Intellectual)

Figure 4 the submission of students find the results of practicum work and solve the problem using thinking skills.

Psychomotor learning outcomes students can use an observer sheet instrument approved by the observer at each learning meeting. The influence of the SAVI learning model through practicum activities on science learning outcomes is presented in table 4.

Table 4. Students Learning Outcomes in Psychomotor Domain

Meeting	Psychomotor value	Criteria
1	76	Moderate
2	80	Good
3	84	Good
Average	80	Good

Learning activities that support the improvement of the psychomotor domain are training students' physical activities related to practicum actions and skills.

CONCLUSION

According to the results of the research, it was shown that there was a positive influence on the implementation of the SAVI learning model through practicum activities on science learning outcomes of fourth-grade students of elementary school. Affective domain learning outcomes achieved a score of 83.7; the cognitive domain learning outcomes with 76.48 point and psychomotor domain learning outcomes get a score of 84. Based on the results of data analysis, it can be concluded that the implementation of the SAVI learning model through practicum activities improve the learning outcomes of students in cognitive, affective, and psychomotor domains.

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