Effectiveness of the SAVI (Somatic, Auditory, Visualization, and Intellectual) Learning Model on Students' Science Literacy Ability in Elementary School

Ida Fiteriani[2*], Baharudin[2], & Uswatun Khasanah[3]

[1,2,3]Universitas Islam Negeri Raden Intan Lampung, Lampung, Indonesia

*Correspondence address: ida.fiteriani@radenintan .ac.id

Abstract

This study aims to examine the effectiveness of the SAVI learning model on students' science literacy skill in science subject. The research approach used in this study is quantitative with a quasi-experimental design. The research sample will be purposively selected from two existing classes, with one class as the experimental group and one class as the control group. Class B, as the experimental group, will consist of 29 students, while Class C, as the control group, will consist of 27 students, making the total research sample 56 students. In this study, the instrument used is atest. This test consists of 20 multiple-choice questions designed to measure students' scientific literacy skills after the implementation of the SAVI model. The post-test data will be analyzed usingthe paired sample t-test statistical method to determine significant differences in scientific literacy skills. The results of this study conclude that the Sig. (2-tailed) value is $0.000 < 0.05$. This indicates the effectiveness of the SAVI learning model on the scientific literacy skills of fourth grade students at SDN Purwodadi Simpang. The results of this study are expected to provide practical results guidance for teachers in designing and implementing more effective learning strategies in the classroom. By understanding the impact of the SAVI model on scientific literacy, educators can adapt this method to meet diverse learning needs and improve students' academic outcomes.

Keywords: The SAVI Learning Model, Scientific Literacy Skill, and Elementary School Student.

Abstrak

Penelitian ini bertujuan untuk untuk melihat bagaimana efektivitas model pembelajaran SAVI terhadap kemampuan literasi sains siswa pada mata pelajaran IPA. Pendekatan penelitian yang digunakan dalam penelitian ini adalah kuantitatif dengan jenis quasy eksperimental design. Sampel penelitian akan diambil secara purposive dari dua kelas yang ada, dengan satu kelas sebagai kelompok eksperimen dan satu kelas sebagai kelompok kontrol. Kelas B sebagai kelas eksperimen akan terdiri dari 29 siswa sedangkan kelas C sebagai kelas kontrol terdiri dari 27 siswa, sehingga total sampel penelitian adalah 56 siswa. Dalam penelitian ini, instrumen yang digunakan adalah instrument tes. Tes ini terdiri dari 20 soal pilihan ganda yang dirancang untuk mengukur kemampuan literasi sains siswa setelah penerapan model SAVI. Data hasil post-test akan dianalisis menggunakan uji statistik paired sample t-test untuk menentukan perbedaan signifikan dalam kemampuan literasi sains. Hasil penelitian ini menyimpulkan bahwasannya nilai Sig. (2-tailed) sebesar 0.000 < 0.05. Hal ini menunjukkan adanya efektivitas dari model pembelajaran SAVI terhadap kemampuan literasi sains siswa kelas IV SDN Purwodadi Simpang. Hasil dari penelitianini diharapkan dapat memberikan panduan praktis bagi guru dalam merancang dan menerapkan strategi pembelajaran yang lebih efektif di kelas. Dengan memahami pengaruh model

SAVI terhadap literasi sains, pendidik dapat mengadaptasi metode ini untuk memenuhi kebutuhan belajar yang beragam dan meningkatkan hasil akademik siswa.

Kata Kunci: *Model Pembelajaran SAVI, Kemampuan Literasi Sains, Siswa Sekolah Dasar.*

INTRODUCTION

At the Elementary School (SD) level, the Natural Sciences (IPA) curriculum is designed for form a foundation of deep scientific understanding and strong scientific literacy skills in students (Afrijal et al., 2023; Ibda et al., 2023; Mahlianurrahman et al., 2023; Rokhiyah et al., 2023; Ulumiyah, 2023; Widyasari & Haryanto, 2022). The main objective is to equip students with the ability to understand, apply, and evaluate science concepts in context everyday life, as well as developing critical thinking and problem solving skills (Kartimi & Winarso, 2021; Scientific literacy involves students' ability to apply scientific knowledge effectively. and make evidence-based decisions, which are critical to their daily lives. (Ellianawati et al., 2021; Husna et al., 2022; Istyadji & Sauqina, 2023; Muhlis et al., 2 024; Pakpahan, 2022; Saraswati et al., 2021).

Literacy science is ability For understand, apply, And evaluate scientific knowledge in the context of everyday life (Apriyani et al., 2021; Haruna et al., 2024; Ibda et al., 2023; Nasor et al., 2023; Syarifuddin et al., 2023; Zuhra & Arifiyanti, 2021). Skills This is not only important for mastering science subjects, but also for making decisions evidence-based in everyday life. Scientific literacy includes the ability to think critical, solve problem, And apply concepts science in situation Which different (Paradise et et al., 2023; Purwani et et al., 2019; Shaffer et et al., 2019). By Because That, development scientific literacy among students is a priority in the education curriculum (Adi et al., 2020; Fadila et al., 2020; Fakhriyah et al., 2017; Fauziyah et al., 2021; Lestari et al., 2019; Novita Octaviani & Ulinnuha Nur Faizah, 2024).

However on in reality, problem main Which underlying study This is students' difficulties in understanding and applying science concepts, resulting in low results learning and their involvement in science subjects. Traditional learning methods often ineffective because it does not accommodate the various learning styles of students. This study aims to explore model learning SAVI, Which integrate aspect somatic, auditory, visualization , and intellectual , as a solution to overcome the shortcomings of conventional methods and increase students' scientific literacy skills in a way significant.

Success in create runway science Which sturdy on level SD very depends on strategy learning Which innovative And interactive, Which can push active and in-depth student involvement. This strategy is expected to create an experience holistic and interactive learning, which in turn enhances understanding and skills students' scientific literacy. Well-developed scientific literacy skills at this stage will facilitate better understanding and effective application of scientific knowledge in the future. front. Therefore, the application of a learning model that is able to accommodate various learning styles Learning and stimulating various sensory channels is an important key to improving literacy. science student.

The SAVI learning model, which is an acronym for Somatic, Auditory, Visualization, and Intellectual, is an educational approach that integrates various learning styles. to improve students' understanding and skills (Abustang et al., 2023; Agusliati & Aprilia, 2024; Arbis, 2021; Dahlinar et al., 2021; Nopitasari et al., 2022; Rahayuningtyas, 2022). This model designed For stimulate involvement physique (somatic), hearing (auditory), visual (visualization), And cognitive (intellectual) student during process Study, with objective For enrich their learning experiences (Anggreini & Dewi, 2020; Diah et al., 2023; Hafiz et al., 2020; Heart & Dear Sir, 2017; Laili et et al., 2023; Laila et et al., 2021). Approach This allows students to access information through various channels, which is expected to improve overall learning outcomes (Afnida & Utami, 2024; Fajriah et

al., 2020; Nopitasari et et al., 2022; et et al., 2023).

Importance implementation model SAVI in context literacy science become clear remember scientific literacy is the ability to understand, apply, and evaluate scientific knowledge in life daily (Ahmad, 2021; Laili et et al., 2023). Literacy science No only important to master science subjects, but also to make evidence-based decisions in everyday situations. These skills include the ability to think critically, solve problems, and apply concepts science in a way effective. With adopt model SAVI, expected development of students' scientific literacy can be more optimal, because this model accommodates various style Study And provide various method For understand as well as apply knowledge science.

Science literacy skills at the research site indicate a need to improve students' understanding in applying scientific concepts to solve everyday problems. Based on initial observations, science learning at the research site tends to be less interactive, thus affecting students' involvement in understanding the material in depth. The SAVI (Somatic, Auditory, Visual, Intellectual) learning model is a relevant solution because it involves a multisensory approach that combines physical, auditory, visualization, and intellectual activities to create more effective and holistic learning.

Various previous studies support the effectiveness of the SAVI learning model. Research by Deni Nasir Ahmad (2021) shows that the SAVI model can improve students' critical thinking skills and help develop analytical abilities through structured learning stages. Ilmi Nur Laili (2023) emphasized that the integration of visual and auditory approaches can increase student motivation and engagement in science learning. The importance of innovation in learning methods to improve students' scientific literacy outcomes (Bahtiar et al., 2022; Fakhriyah et al., 2017; Fausan et al., 2021; Jufrida et al., (2019); Siswanto et al., 2023; Yudha et al., 2023). However, research that specifically examines the application of the SAVI model in the context of scientific literacy at the elementary education level is still limited.

The novelty of this study lies in its focus on integrating the SAVI model into science teaching and analyzing its impact on students' scientific literacy. This study is expected to provide new contributions to the educational literature by providing practical guidance for teachers to design more effective learning strategies, while also answering the need for innovative approaches in science learning that are relevant to future global challenges.

METHOD

Study This use design experiment quasi with approach post test For evaluate the effectiveness of the SAVI learning model on students' scientific literacy skills at science subjects. Quasi-experimental designs, including techniques such as regression discontinuity and propensity score matching, are increasingly being applied in educational research, providing a valuable alternative when randomization is not possible (Goplan et al., 2020). The study population was students in grades IV A, IV B, and IV C of SDN Purwodadi Simpang, South Lampung. The research sample will be taken purposively from two classes. there is, with one class as the experimental group and one class as the control group. Class B as the experimental class will consist of 29 students while class C as the control class will consist of of 27 students, so the total research sample was 56 students. In this study, the instrument used used is a test instrument. Science Literacy Test: This test consists of 20 multiple choice questions which designed For measure ability literacy science student after implementation model SAVI. The post-test data will be analyzed using a paired sample t-test to determine significant differences in science literacy skills between the experimental and control groups (Naqvi et al., 2023).

The research instrument will be tested for validity through consultation with science material experts and tested for reliability using the Cronbach alpha coefficient, in accordance with the procedures applied in previous studies. Instrument trial on small samples will be conducted to ensure accuracy and consistency results. In this study, to testing quantitative data in the form of tests, several

tests were carried out. The prerequisite tests carried out in This research is a normality test and a homogeneity test. After the prerequisite test, the hypothesis test can be done, namely the T test.

RESULTS AND DISCUSSION

Based on the analysis of data obtained from grade IV students of SDN Purwodadi Simpang, South Lampung with the variables studied, namely scientific literacy skills, interpretation results is as follows:

Test Normality

The normality test is a test that is useful for determining whether the data is has been collected is normally distributed or not. The data requirements are said to be distributed in a way normal If mark sig. > 0.05. Description results test abilityThe scientific literacy of fourth grade students at SDN Purwodadi Simpang, South Lampung is displayed in Table 1.

Table 1. Description of the results of the normality test on students' scientific literacy ability of class IV at Purwodadi Simpang Elementary School, South Lampung.

Tests of Normality

	Kelompok	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Data	1.00	.148	29	.106	.950	29	.179
	2.00	.140	27	.184	.954	27	.270

a. Lilliefors Significance Correction

Based on the results of the table above, the Sig. values obtained are 0.179 and 0.270. so it can be concluded that the data is normally distributed. Normality test obtained from test Shapiro-Wilk, with significance value Which more big from 0.05.

Test Homogeneity

Homogeneity Test is a test used to determine whether the variance from the same (homogeneous) or different (non-homogeneous) data distribution. Condition data said to be homogeneous If sig. value > 0.05.

Table 2. Description of the results of the Homogeneity test of students' scientific literacy ability of class IV at Purwodadi Simpang Elementary School, South Lampung.

Test of Homogeneity of Variances

Data

Levene Statistic	df1	df2	Sig.
3.304	1	54	.075

Description of the results of the Homogeneity test of the science literacy abilities of school students Basic. Based on the table, the results of the homogeneity test were obtained with a significance value >0.05, so it can be concluded that the data scientific literacy skills class students IV SDN Purwodadi Simpang, South Lampung is homogeneous. It is proven that results sig value (2-tailed) which is 0.075 so it is more than 0.05.

Test Hypothesis

In test hypothesis This, test Which done is test T. Test T aiming for determine whether variable independent own influence to variable dependent. Description of the T-test results of elementary school students' scientific literacy skills displayed in Table 3.

Table 3. T-test for the scientific literacy skills of grade IV at Purwodadi Simpang Elementary School, South Lampung

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Data	Equal variances assumed	3.304	.075	5.297	54	.000	15.55939	2.93766	9.66973	21.44904
	Equal variances not assumed			5.214	43.219	.000	15.55939	2.98437	9.54172	21.57706

Based on Table 3, the results of the t-test using SPSS, the calculated t value is Sig. 0.000, Which means that mark Sig. (2-tailed) as big as 0.000 < 0.05. Matter This shows the effectiveness of the SAVI (Somatic, Auditory, Visualization, Intellectual) on the scientific literacy skills of grade IV SDN students Purwodadi Simpang, South Lampung.

The results of this study indicate that the application of the SAVI (Somatic, Auditory, Visualization, Intellectual) in a way significant influence ability literacy science of grade IV students of SDN Purwodadi Simpang, South Lampung. This finding is based on comparison results pre-test And post test ability literacy science between group experiments that apply the SAVI model and control groups that use the method learning conventional.

Data shows a significant increase in scientific literacy skills. students in the experimental group after the application of the SAVI model. The results of the post-test of the experimental group experiment show average score Which more tall compared to with group control. This improvement shows that the SAVI model, which integrates the approaches somatic, auditory, visualization, And intellectual, succeed repair understanding And application of science concepts by students (Hamsiah et al., 2023; Urip & Edy Mulyono, 2020; Juliana et al., 2021).

Model SAVI allow involvement physique through activity somatic, Which help students understand science concepts practically and contextually (Ahmad, 2021; Laili et al., 2023). Observations show that activities such as simple experiments and Manipulating science objects increases student engagement and facilitates deeper understanding. better. Auditory aspects, such as the use of audio media and discussions, also contribute on improvement understanding student with give explanation Which more clear And to hook information with everyday context.

Implementation technique visualization, like use picture, diagram, And model, help students in visualizing abstract science concepts (Ahmad, 2021; Laili et al., 2023). This allows students to understand the material in a way that more concrete and easier to understand. The results of the observation showed that students who were involved in visualization activities demonstrate a better understanding of the concepts science compared with method learning conventional which are more verbal.

The intellectual approach in the SAVI model encourages students to think critically and analytical about science concepts. Through group discussions, problem solving, and activities project-based, students can develop deeper thinking skills and applicable. Results questionnaire show that student feel more believe self in apply knowledge science they after involved in activity Which stimulate thinking critical.

Findings This show that model learning SAVI can become alternative which effective For increase ability literacy science student in level SD. With accommodate various learning styles and provide interactive learning experiences And multisensory, model SAVI can help student understand And apply draft science in a way more Good. By Because That, implementation model SAVI in class can recommended as strategy Which effective in overcome challenge in learning Science and improve

student learning outcomes.

Model learning very important in support ability literacy science student SD for several fundamental reasons that support an effective learning process and comprehensive. A good learning model, such as SAVI (Somatic, Auditory, Visualization, Intellectual), designed For accommodate various style Study student. Every student have different ways of processing information, and this model allows students to learning through physical activity (somatic), listening to explanations (auditory), seeing visuals (visualization), and critical thinking (intellectual) (Ahmad, 2021; Hafiz et al., 2020; Yuliana et al., 2021). With thus, model This help ensure that all student can access and understand science material with method Which most suitable for they.

Model varied and adaptive learning can creating a learning environment positive and inclusive. When students feel that the learning method is appropriate to their their needs, they tend to feel more comfortable and confident in learning. This create an atmosphere that supports effective learning and helps students feel more involved in the learning process. Overall, the application of the learning model appropriate approaches such as SAVI can significantly improve students' scientific literacy skills. SD by making the learning process more relevant, interesting, and effective (Urip & Edy Mulyono, 2020). A good learning model not only improves academic understanding but also prepares students to become independent and critical learners in the future. (Awaluddin et al., 2024; Saleh et al., 2022).

CONCLUSION

The results of the study indicate that the SAVI (Somatic, Auditory, Visualization, Intellectual) learning model is effective in improving the science literacy skills of fourth grade elementary school students. This approach supports various learning styles of students, allowing them to understand the material more thoroughly. With a Sig. value of 0.000 <0.05, this model is proven to be significant in improving science literacy skills. This study was limited to the scope of fourth grade students in one school, so the results may not be generalized to a wider population. In addition, testing the reliability and validity of the instrument can be improved by involving more experts and trials. Further research is recommended to expand the scope of schools and grade levels, and integrate the SAVI model with digital technology for learning. Future researchers can also explore the long-term impact of this model on science literacy and other skill.

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