

Using Somatic, Auditory, Visualization, Intellectually (SAVI) Learning Model on Primary School to Enhance Science Learning Outcomes

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Abstract: This research purposes to determine the influence of the Somatic Auditory Visualization Intellectually (SAVI) Learning Model on Science Learning Outcomes of 5th Grade Students on the Human Body Concept and to find out the results of students' Science learning on the Human Body Skeleton Material. The research design used was an experiment by means of a non-equivalent control group design and focusses in this examination were fifth grade primary school students. The investigation sample involved of two classes, to be exact the experimental class and the control group. In the experimental group there were 30 students, and in the control class there were 32 students. In obtaining the numbers, the researcher used the science learning achievement test method in the form of multiple-choice questions and documentation. The findings of the experiment indication that the SAVI learning model has an influence on the learning outcomes of natural science on the subject of the human body framework. The outcomes of analysis the assumption with the Mann Whitney test achieved from a posttest

value of $0.000 < 0.05$ funds that H_0 is rejected and H_a is accepted. The average of the experimental class that used the SAVI learning model was 79.7 better than the control class that was treated with Direct Instruction learning with an average of 62.4. The presentation of the SAVI learning model is expected to reassure students to be enthusiastically involved in solving problems and to consider analytically and critically.

INTRODUCTION

Learning is the process of transferring knowledge by instilling it in students (Nurkaeti et al, 2019). Education is expected to create a generation that has good morals and supports the achievement of national development goals (Anwar &

Awiria, 2022). In the process of realizing national education goals, especially at the primary level, there are several subject contents that must be given to students, and Natural Sciences is one of them. Science learning promises to be a consign for schoolchildren to study just about themselves and their natural environment, as well as further development processes to apply them in everyday life (Klippel et al., 2019). The process of effusively optimizing the function of the senses makes students more rapidly accept the transformation of information, specifically in learning at school. Through stimulation targeted at the intelligences used by students in learning, students are predictable to have good knowledge. In addition, at the period of primary school students, psychological and neuro-psychological development desires to be established so that students become faultless human beings. Consequently, a learning model is desirable that is able to optimize sensory, motor and all senses in students. Learning in primary school especially science is one of the subjects that must be instilled in students because through learning Science students are able to solve the problems they face scientifically (Widiana, 2016).

Model can be interpreted as interpretations of observations and measurements acquired commencing numerous systems, while learning models are patterns that be able to be treated as guidelines for planning lessons in classes and tutorials. Learning models are plans or patterns that preserve be managed to figure curriculum (continuing learning strategies), policy learning resources, direct classes or other learning tools (Khoerunnisa & Aqwal, 2020). Learning patterns play an significant part in increasing the effective learning process, fostering student motivation and interest. Many innovative learning models have emerged, which are attempts to improve the learning progression and make it better. The Unique of this is the model of Somatic, Auditory, Visualization, Intellectually (SAVI) (Amalia & Hastuti, 2020; Dewi & Negara, 2020; Iskandar et al, 2016).

The SAVI learning model is used because it is oriented towards student-centered learning (student center). The following is an overview of the terms Somatic, Auditory, Visualization, and Intellectually (SAVI). Somatic, namely knowledge orientation to physical activity (by doing and moving). Active students experience things and learning events for themselves and do various things that can facilitate their learning activities. Auditory, learning is oriented towards speaking and listening activities. Educators must involve students to be more active in it, for example through listening and listening to material, speaking and explaining, presenting and others. Visualization, learning activity-oriented students to observe and describe. Students must be given the opportunity to be able to take advantage of their sense of sight to carry out various activities, for example students observing an object, demonstrating, reading subject matter etc. Intellectually, namely learning activity-oriented students think to solve problems. Educators must give problems to students as challenges that must be solved by thinking of the right solutions to solve these problems

Founded on the fallouts of observations made by authors in 5th grade students, it was shown that there were still many students who had learning difficulties, one of which was that students had not been able to master the material being taught, especially the material of the human body framework. The use of learning simulations that are not properly utilized in the learning progression.

Students do not participate actively in the learning process, and students do not pay much attention to the material explained by the teacher. Therefore, when the teacher does exercises or tests, students cannot answer the test correctly. This can be seen from the results of the 5th grade Mid Semester Examinations obtained; it can be concluded that they are still unsatisfactory. The learning results obtained were 37% of students who passed the 2021/2022 Mid Semester Examination, who scored below the Minimum Completeness Criteria was 62%. Based on data on student science learning outcomes which are generally still low, while the Minimum Completeness Criteria that has been set to be achieved is 75. So that learning outcomes in the ability to build knowledge to develop the skills and creativity of the students themselves are very lacking.

Learning outcomes are obtained from students' interactions with the environment (Gumala et al, 2020), which are deliberately planned by the teacher in their teaching activities (Fitrianti, 2018). Learning outcomes include understanding concepts (cognitive aspects), process skills (psychomotor aspects), and student attitudes (affective aspects) (Alannasir, 2020). Learning results will remain optimal if the lessons and studying process is carried out intentionally and well organized in accordance with the learning syntax used because it is in accordance with students' thinking levels (Afifah et al., 2019; Y Gumala et al., 2019; Ningsih et al., 2019).

The human skeleton is made up of single or composite bones (such as the skull) that are supported by other structures such as ligaments, tendons, muscles, and other organs. The skeleton is a sequence of bones that supports and protects several soft organs, especially in the skull and pelvis. The main functions of the skeleton are to support, protect, give shape to the body, and to leverage movement and provide surfaces for the attachment of the skeletal muscles. The human skeleton is composed of three types of bones, namely cartilage, hard bones, and joints (Hakim et al., 2022).

METHOD

This research is a quantitative research. This type of research is quasi-experimental research. Sampling in this study used the research design pattern Nonequivalent Control Group Design. In this study, researchers used a purposive sampling technique.

Tabel 1. Research Design

Group	Pre-Test	Treatment	Post-Test
Eksperiment	O ₁	X ₁	O ₂
Control	O ₃	X ₂	O ₄

Description:

O₁ : Prettes Eksperiment

O₂ : Posttes Eksperiment

O₃ : Prettes Control

O₄ : Posttes Control

X₁ : Using Somatic, Auditory, Visual, Intellectual (SAVI)

X₂ : Using Direct Instruction

The population in this study were all 5th grade students at a private school in Bekasi Regency. The research subjects used in this study were 30 students in 5th grade as the experimental class and 32 students in 5th grade as the control class. The research instrument includes pre-test and post-test test sheets based on the syllabus referring to the 2013 curriculum. The syllabus contains core competencies, basic competencies, and indicators. The learning implementation plan which contains learning using the somatic, auditory, visualization, intellectually (SAVI) learning model. Thematic Package Books As a guide and also make it easier for students to do learning using the somatic, auditory, visuallization, intellectually (SAVI) learning model.

Data collection techniques in this study were observation, tests to measure the achievement of using the Somatic, Auditory, Visualizationl, Intellectually (SAVI) learning model and documentation to see the implementation of the use of the Somatic, Auditory, Visualizationl, Intellectually (SAVI) learning model. The data analysis technique used is inferential analysis. Inferential analysis is a data analysis technique that can be used to determine whether the hypothesis in the study is accepted or rejected. There are several stages of analysis which are prerequisites for carrying out a hypothesis test analysis, namely analysis of data normality tests and analysis of data homogeneity tests (Sinha, Hartung, & Knapp, 2011).

To answer the research question, namely knowing how the influence of the Somatic, Auditory, Visual, Intellectual (SAVI) learning model on the science learning outcomes of fifth grade students on the human body framework was analyzed using statistical t-tests for normal data and Mann Whitney tests for abnormal data. Before conducting the research, the research instruments used were validated first by two validator lecturers. Results of testing the validity of the research instrument test questions. Validity is a condition that describes the extent to which a relevant instrument can measure what needs to be measured (Bautista et.al., 2016). The researcher designed 20 test questions in the form of multiple-choice questions. Then the researchers conducted reliability tests, difficulty levels and discriminatory power. In this reliability test the researcher used the kuder-richardson formula (KR-20) using SPSS version 24.0. As for the level of difficulty, the researcher uses the formula proposed by Du Bois.

RESULT AND DISCUSSION

This study aims to determine the effect of the Somatic, Auditory, Visualization, and Intellectually (SAVI) learning model on science learning outcomes on the subject of the human body framework. The research data was obtained from the scores of students in the experimental class and control class. The experimental class was given the learning treatment using the Somatic, Auditory, Visualization, and Intellectually (SAVI) learning model, while the control class was given the Direct Instruction learning treatment. Before getting treatment, each class was given pretest questions and after getting the learning treatment each class was given posttest questions, so that pretest and posttest values were obtained for each class, namely the experimental class and the control class.

1. Student Learning Outcome

Student learning outcomes in the experimental class are in the form of pretest-posttest scores. In this study, the pretest-posttest values were calculated on a scale of 100. Data from descriptive statistical test results for student learning outcomes in the experimental class and control class in the form of pretest and posttest values can be seen in Table 2.

Tabel 2. Student Learning Outcome

Learning Outcome	Eksperimen		Control	
	Pretest	Posttest	Pretest	Posttest
1. Total Student	30	30	32	32
2. The Highest Score	64	100	64	71
3. The Lowest Score	42	71	35	50
4. Average	55	79,7	47,9	62,4
5. Standard Deviation	6,24	8,76	8,01	6,94

The results of the average pretest and posttest analysis between the experimental class and the control class are presented in Figure 1.

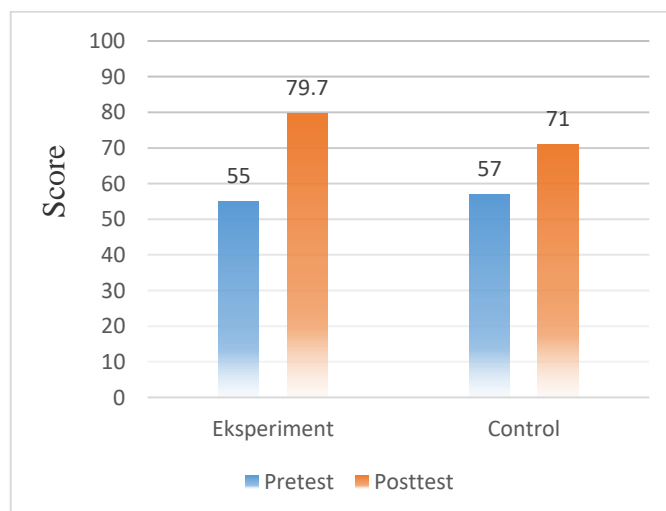


Figure 1. The Average Eksperimen and Control Group

Based on Table 4 and Figure 1 it is known that both classes have an increase in learning outcomes, which can be interpreted that the learning model is able to improve science learning outcomes. The comparison of increased learning outcomes can also be compared to that classes using the SAVI learning model have better final learning outcomes compared to classes using direct instruction learning. This shows that the SAVI learning model can improve science learning outcomes which are more optimal in learning that occurs in the control class. The use of the appropriate SAVI Model provides good science learning outcomes (Cantona & Sudarma, 2020; Indriani, Giri, & Ardiawan, 2022)).

2. Sample Normality Test Results

The results of the normality test are carried out to see whether the class used as a sample is normally distributed or not. A summary of the results of the sample normality test can be seen in Table 3.

Tabel 3. Normality Test Result

Shapiro-Wilk					
Data	Group	Statistik	Df	Sig.	Information
Pretest	Eksperiment	0,838	30	.000	Not Normal Distribution
Posttest		0,898	30	.007	Normal
Pretest	Control	0,888	32	.003	Not Normal Distribution
Posttest		0,856	32	.001	Not Normal Distribution

The normality test used in this study is the Shapiri-Wilk test. This is because the sample used is less than 50. Based on table 3 it can be concluded that the pretest posttest data in the control and experimental classes are not normally distributed. So, this decision is based on the value of Sig. > 0.05 with a significance level of 5%.

3. Homogeinity Test

Homogeneity test was carried out to find out whether the sample used came from a homogeneous population or not. The homogeneity test in this study used the Levene test with the SPSS version 24 application. With the Levene test statistical criteria for decision making for homogeneity tests, namely: If the significance value (Sig.) > 0.05 , the variance of the data is homogeneous. If the significance value (Sig.) < 0.05 then the variance of the data is not homogeneous. The results of the homogeneity test analysis can be seen in Table 4.

Tabel 4. Homogeinity Test

Levene						
Data		Statistic	df1	df2	Sig.	Information
<i>Based on</i>	<i>Pretest</i>	1,294	1	60	0,260	Homogen
<i>Mean</i>	<i>Posttest</i>	1,430	1	60	0,362	Homogen

Based on the results of the homogeneity test with the Levene statistical test on the pretest value, the Sig. $0.260 > 0.05$. While the posttest scores obtained results with Sig. $0.362 > 0.05$ with a significance level of 5%. Based on the results of these data it can be concluded that the variance of the pretest and posttest groups in the experimental and control classes is homogeneous, which means that there is no difference in variance between the two data.

4. Hypothesis Test

The difference test of the two means is used to determine the difference in the average science learning outcomes between two classes, namely the experimental class and the control class. The difference test for these two means

uses the Mann Whitney test assisted by the SPSS application version 24. The results of the difference test for these two means are presented in Table 5.

Tabel 5. Hypothesis Test

Nilai	N	Mann-Whitney U	Z	Asymp.Sig.(2- tailed)
Pretest	24	241,000	-3,478	0,008
Posttest	20	40,000	-6,335	0,000

Determination of the basis of the Mann Whitney test is based on a significance value (2-tailed) which measures whether there is a difference in the mean of the subjects tested. Based on table 5, using the Mann Whitney test shows that the pretest value obtains a Sig (2-tailed) value of 0.008 > 0.05 with a significance level of 5%. It can be concluded that the significance value (2-tailed) <0.05 indicates that there is an average difference between research subjects in the posttest value. This shows that the SAVI Learning Model has an effect on Science Learning Outcomes. The SAVI model can be used and has an influence on Science Learning (Sadjirah, et.al., 2022; Tiyas & Fatimah, 2019; Wijaya, Bayu, & Sumantri, 2021).

CONCLUSION

There is an influence of the Somatic, Auditory, Visualization, and Intellectually (SAVI) Learning Model on Natural Science Learning Outcomes on the Material of the Human Body Framework. This can be seen from the results of an increase in the average learning outcomes of experimental class students who before being given treatment obtained an average value of 55 and after being given learning treatment using the Somatic, Auditory, Visualization, and Intellectually (SAVI) learning model obtained an average value average of 79.7. While the increase in the average control class students before being given treatment obtained an average value of 47.9 and after being given learning treatment using conventional learning models obtained an average value of 64.4.

SUGGESTION

Based on the results of the research conclusions, learning with the Somatic, Auditory, Visualization and Intellectually (SAVI) learning model for science learning outcomes in the Human Body Framework material can be a solution for teachers to be able to apply this learning model using relevant themes or material. Because the Somatic, Auditory, Visualization, and Intellectually (SAVI) learning model really attracts students' attention and uses all members of the body so as to make the learning atmosphere more interesting and students more active in the teaching and learning process

REFERENCES

- Afifah, R. N., Syaodih, E., Suhandi, A., Maftuh, B., Hermita, N., Handayani, H., ... Samsudin, A. (2019). Develop children's science process skills through building activities in center of beam: optical geometry on focus. In *Journal of Physics: Conference Series* (Vol. 1280, p. 52016). IOP Publishing.
- Alannasir, W. (2020). Characteristic-based development students aspect.

- International Journal of Asian Education*, 1(1), 29–36.
- Amalia, M., & Hastuti, S. (2020). Pengaruh Model Pembelajaran SAVI Terhadap Hasil Belajar IPA Siswa Kelas V. *Jurnal Pendidikan Fisika Dan Sains (JPFS)*, 3(1), 1–5.
- Anwar, C., & Awiria, Y. G. (2022). The Role of The Teacher In Implementing The Attitude Of Religious Tolerance In Class Iv Elementary School. *Jurnal Pendidikan Dan Pengajaran Guru Sekolah Dasar (JPPGuseda)*, 5(2), 73–78.
- Bautista, M. A. C., Nurjono, M., Lim, Y. W., Dessers, E., & Vrijhoef, H. J. M. (2016). Instruments measuring integrated care: a systematic review of measurement properties. *The Milbank Quarterly*, 94(4), 862–917.
- Cantona, I. G. E., & Sudarma, I. K. (2020). Model Pembelajaran SAVI Berbantuan Media Mind Mapping Meningkatkan Hasil Belajar IPA Siswa Kelas V. *Jurnal Pedagogi Dan Pembelajaran*, 3(2), 269–279.
- Dewi, A. T. Y. R., & Negara, I. G. A. O. (2020). Pengaruh Model Pembelajaran (SAVI) Berbantuan Multimedia Terhadap Kompetensi Pengetahuan IPA. *Mimbar PGSD Undiksha*, 8(1), 40–49.
- Fitrianti, L. (2018). Prinsip kontinuitas dalam evaluasi proses pembelajaran. *Al-Ishlah: Jurnal Pendidikan*, 10(1), 89–102.
- Gumala, Y., Nurkaeti, N., Aryanto, S., Syaodih, E., & Samsudin, A. (2020). The Influence Of Using Kit Of Science For Kids To Elementary School Students' concept Mastery. *PrimaryEdu: Journal of Primary Education*, 4(1), 74–82.
- Gumala, Y., Suhandi, A., Syaodih, E., Maftuh, B., Hermita, N., & Samsudin, A. (2019). Facilitating of fourth grade students problem solving skills on gravity. In *Journal of Physics: Conference Series* (Vol. 1157, p. 32041). IOP Publishing.
- Hakim, A. R., Hudha, M. N., & Kumala, F. N. (2022). *Konsep Dasar IPA* (Vol. 1). Kanjuruhan Press.
- Indriani, S. P., Giri, I. M. A., & Ardiawan, I. K. N. (2022). Pengaruh Model Pembelajaran SAVI Berbantuan Media Praktikum Sederhana Terhadap Hasil Belajar IPA. *Indonesian Journal of Learning Education and Counseling*, 5(1), 44–52.
- Iskandar, D., Hamdani, A., & Suhartini, T. (2016). Implemetation of model savi (somatic, auditory, visualization, intellectual) to increase critical thinking ability in class IV of social science learning on social issues in the local environment. *Journal of Education, Teaching and Learning*, 1(1), 45–50.
- Khoerunnisa, P., & Aqwal, S. M. (2020). Analisis Model-Model Pembelajaran. *Fondatia*, 4(1), 1–27.
- Klippel, A., Zhao, J., Jackson, K. Lou, La Femina, P., Stubbs, C., Wetzal, R., ... Oprean, D. (2019). Transforming earth science education through immersive experiences: Delivering on a long held promise. *Journal of Educational Computing Research*, 57(7), 1745–1771.
- Ningsih, A. R., Afifah, R. N., Gumala, Y., Handayani, H., Suhandi, A., Syaodih, E., ... Samsudin, A. (2019). A preliminary study: how is extent the fourth-grade students understanding of the magnetic force? In *Journal of Physics: Conference Series* (Vol. 1280, p. 52048). IOP Publishing.
- Nurkaeti, N., Aryanto, S., & Gumala, Y. (2019). Read Aloud: a Literacy Activity

- in Elementary School. *PrimaryEdu-Journal of Primary Education*, 3(2), 55–61.
- Sadjirah, N. H., Nurhaedah, N., & Pagarra, H. (2022). The Effect of Application SAVI Model on The High Order Thinking Skills 5th Grade Student In Thematic Learning. *Excellent Education, Science and Engineering Advances Journal*, 1(2), 1–12.
- Sinha, B. K., Hartung, J., & Knapp, G. (2011). *Statistical meta-analysis with applications*. John Wiley & Sons.
- Tiyas, D., & Fatimah, M. (2019). Keefektifan Model SAVI Terhadap Minat dan Hasil Belajar IPA SDN Lawatan 01 Kabupaten Tegal. *Indonesian Journal of Conservation*, 8(1).
- Widiana, I. W. (2016). Pengembangan asesmen proyek dalam pembelajaran ipa di sekolah dasar. *JPI (Jurnal Pendidikan Indonesia)*, 5(2), 147–157.
- Wijaya, I. K. P., Bayu, G. W., & Sumantri, M. (2021). Model Pembelajaran Somatic, Auditory, Visualization, Intellectually (SAVI) Berbantuan Icebreaker Terhadap Hasil Belajar IPA Siswa. *Jurnal Ilmiah Pendidikan Profesi Guru*, 4(1), 54–60.