THE EFFECT OF SOMATIC, AUDITORY, VISUAL AND INTELLECTUAL MODELS (SAVI) TOWARD CRITICAL THINKING ABILITY

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ABSTRACT

The problem in this research is motivated by students' low critical thinking skills due to different learning styles, passive and not conducive. The purpose of this study was to describe the differences in students' critical thinking skills and the differences in the improvement of students' critical thinking skills in social studies content using somatic, auditory, visual and intellectual (SAVI) models. The research approach used in this study is a quantitative approach using the experimental method, namely quasi-experimental with the research design, namely nonequivalent control group design with a pretest before treatment and posttest after treatment. It consists of two important variables, namely the dependent variable (Y) critical thinking skills and the independent variable (X) somatic, auditory, visual and intellectual models (SAVI). This research was conducted in class V in the even semester of SD Negeri 4 Kuningan for the 2022/2023 academic year, with 40 students as research subjects. Data collection techniques in this study used tests, namely descriptions based on indicators of critical thinking skills. As for the data analysis technique used in this study, namely the normality test, homogeneity test, N-gain test, t test or difference test between the critical thinking abilities of control and experimental class students as well as different tests increasing students' critical thinking skills in the control and experimental classes . The results showed that there were differences in ability and differences in the improvement of students' critical thinking skills between the experimental class which was given the somatic, auditory, visual and intellectual (SAVI) treatment model and the control class which used the discovery learning model.

Keywords: SAVI learning model; critical thinking; social sciences.

INTRODUCTION

Social studies education is one of the scientific disciplines taught to students in elementary schools and is integrated into one thematic unit in the 2013 curriculum and is a theme-based integrated program. Social Sciences is a science that combines branches including historical studies, sociological studies, anthropological studies, as well as geography which examines social problems (Jamaludin, 2017). Furthermore, it is anticipated that through this study, students will develop the ability to correlate diverse facts, thoughts, or ideas with real-world events, enabling them to derive conclusions from the knowledge they

acquire. Consequently, it necessitates the application of critical thinking skills both within the learning environment and in their daily lives.

Critical thinking skills include a person's ability to access something, analyze something, mix and match information received in learning so that they can practice their abilities and master them (Linda & Lestari, 2019). The importance of critical thinking skills will stimulate or stimulate cognitive reasoning because during the educational process students can create solutions to problems that occur in the educational process. In the sense that this ability can encourage students' curiosity, increase their creativity, encourage students' development in reasoning so they can think logically and decide what is best.

However, in reality in the field, critical thinking habits are difficult to implement because students tend to be more passive and rely more on teachers for learning. Where, students tend to find it more difficult to give correct answers, reveal logical concepts and even consider conclusions from learning outcomes. Based on the results of observations on PLP II activities carried out at SD Negeri 4 Kuningan through teaching practices from classes II, III, IV, V, VI. The researcher conducted and focused observations in class V which had two study groups, especially at SD Negeri 4 Kuningan classes VA and VB where in reality learning tended to be passive and not conducive. Apart from this, students find it difficult to respond to teachers' questions clearly, have difficulty drawing conclusions from learning outcomes so that teachers cannot analyze the extent of students' understanding and also have difficulty identifying students' learning styles. It can be concluded that the main problem is the ability to think critically. This ability is one of many problems that arise in a complex manner.

Looking at the problems presented above, researchers have a solution by using the SAVI model to overcome minimal critical thinking skills. The SAVI model is an acronym, namely S 1) somatic means students learn by moving or activities related to the student's own physical body, A 2) auditory is a learning activity by listening, listening and speaking, meaning students participate in learning by listening well in order to get information and understanding the material presented by the teacher, V 3) visualization learning by using the sense of sight to observe and describe an object presented in learning, I 4) intellectualy is practicing, thinking and solving problems. This means that students are required to learn by involving thinking skills and practicing using them so that students can unite their intelligence with all their senses through the learning presented (Shoimin, 2014).

This model and the ability to think critically are interrelated, where this ability can emerge when there is real stimulation in the learning process, because learning involving the five senses can help students become more involved and active in learning, creatively expressing ideas and conclusions and answering questions. served. By paying attention to the elements of the SAVI model, it can provide opportunities or space for students to hone and develop their critical thinking skills.

In line with the explanation above which is linked to previous research in the form of research journals regarding the SAVI model. In research by Ningsih, et al. (2022). The influence of somatic, auditory, visual and intellectual learning models on PKN learning outcomes for class IV students at SDN 14 Tanah Abang. The final results show a significant effect, namely from 45.72 to 71.00.

In line with the explanation above, there are three things that are important for every person to have, namely (somatic, auditory, visual), so they can have an effect on improving the ability to ask questions and express opinions as well as improving students' critical

thinking skills because they involve intellectually or the intelligence of the students themselves (Porter, 2015) . So the researcher formulated the problem regarding differences in abilities and differences in increasing critical thinking abilities of students in the experimental class with the SAVI model and the control class which was not useful.

RESEARCH METHOD

This research approach is a quantitative approach with the research method used in the research, namely the quasi-experimental method (Quasi Experiment). The quasi-experimental method is a research method used to find the effect of certain treatments, comparing the differences between two classes given different treatments, namely the experimental class and the control class. (Sugiyono, 2016)

The research design used in this research is a nonequivalent control group design. The design is as follows:

Table 1. Nonequivalent Control Grup Design

Class	Pre-test	Treatment	Post-test
Experiment (E)	0^1	X	0^2
Control (C)	0^3	-	0^4

Information :

E   : Experimental Class
K   : Control Class
0^1 : Pretest Control Class
0^2 : Posttest Control Class
0^3 : Pretest Experimental Class
0^4 : Posttest Experimental Class
X   : Treatment

Meanwhile, the subjects in this research were class V students at SD Negeri 4 Kuningan which consisted of two classes, namely classes VA and VB with a total of 40 students. VA class students were used as an experimental class, namely learning was carried out using the somatic, auditory, visual and intellectual (SAVI) model and the control class did not use this model. There are two important things in research, namely the quality of the research instruments and the quality of data collection (Sugiyono, 2016: 193).

The data **collection** technique used in this research is using tests as a research instrument. The test used is a description test adapted to indicators of critical thinking abilities. The number of test questions is 20 questions with a division of 10 pretest questions and 10 posttest questions in the experimental and control classes with the same number and questions, aimed at finding out differences and changes after being given treatment.

The data analysis technique uses instrument analysis consisting of validity, reliability, level of difficulty and distinguishing power. Meanwhile, analysis of the results used normality, homogeneity, t test, and N-Gain tests.

RESULTS AND DISCUSSION

In the research process, the researcher previously carried out several preparations, including initial research observations, then prepared instrument test questions which were carried out by testing them, namely validity, reliability, level of difficulty and distinguishing power. By testing the validity of the questions which consist of 20 valid questions with the

conditions being 20% medium, 80% high and 20% very high. By testing reliability using the r_{11} calculation, the reliability value was 0.93, which is included in the very high criteria. Next, we tested the difficulty level of the questions to determine the number of students who answered the questions correctly. The calculation resulted in a difficult interpretation of 4 questions (20%), while there were 12 questions (60%), while the easy interpretation was 4 questions (20%). Meanwhile, the results of the differentiating power test with adequate interpretation were 8 questions (40%) and good interpretation were 12 questions (60%). So with these results the researcher can continue to the research stage.

This research urges educators to improve higher order thinking skills or HOTS. "HOTS (High Order Thinking Skills) or better known as high order thinking skills has four important parts in it, one of which is critical thinking skills" (Sutarna, 2018).

The research was carried out in the VA class as the experimental class and VB as the control class. Next, the research process was carried out starting with pretest testing carried out in the two classes so that results could be obtained before the treatment was carried out. The learning process is carried out in experimental classes using the somatic, auditory, visual and intellectual (SAVI) model and in classes without using this model. The SAVI model is learning that involves students in learning, where in the process it is necessary to involve all the five senses they have, be it hearing, sight, doing something or thinking well and precisely (Anas et.al,. 2019).

The treatment was carried out for 3x learning in the experimental class, and learning without the SAVI model was also carried out for 3x in the control class. Then, experimental class and control class students were given posttest questions to see differences in critical thinking abilities and differences in improvement in critical thinking abilities between the experimental class and the control class. Critical thinking ability is something that involves a person's knowledge and intelligence, including identification, analysis, evaluation, finding problems and solving them, providing evidence for conclusions, thereby giving rise to the intelligent part to create logical and trustworthy things (Crespo, 2018).

Therefore, the pretest and posttest scores for the two classes in the research were obtained as follows:

Table 2. Pretest and Posttest Score Data for Experimental Class and Control Class

Statistic	Experiment		Control	
	Pretest	Posttest	Pretest	posttest
Amount	997	1707	993	1415
mean	49,85	85,35	49,65	70,75
standard deviation	8,14	4,68	8,11	7,59
Minimum	38	78	35	55
Maxsimum	65	93	53	93

The results of the analysis show in table 2 that the average pretest score for the experimental class is 49.85 and the control class is 49.65. With each posttest score for the experimental class being 85.35 and the control class being 70.75. The pretest standard deviation obtained for the experimental class was 8.14 and for the control class was 8.11. The posttest standard deviation obtained for the experimental class was 4.68 and for the control class was 7.59. With the minimum score obtained in the pretest for the experimental class being 38 and the control class being 35. And the maximum score obtained in the pretest for the experimental class being 93 and the control class being 93.

In line with previous research that the SAVI model can improve student learning outcomes, this was proven in research by Ningsih, et.al (2022) that the research results showed an increase between classes that received SAVI model treatment and classes that did not receive treatment, indicated by an initial score of 45 .72 to 70.00.

Apart from calculating the test results, data processing in this research used parametric statistical tests. Parametric statistical testing requires that the data tested be normally distributed (Sugiyono, 2018). To determine whether the data is normally distributed, the researcher conducted a normality test first. Data is normally distributed if X^2count < X^2table. The following are the results of pretest and posttest normality calculations in the experimental class and control class using Chi-Square:

Table 3. Pretest and Posttest Normality Test Data for Experimental Class and Control Class

Statistic	Experiment		Control	
	Pretest	Posttest	Pretest	posttest
mean	49,85	85,35	49,65	70,75
Stadard Deviation	8,14	4,68	8,11	7,59
X^2count	5,17	5,33	5,02	3,34
X^2table	7,81	7,81	7,81	7,81
Information	Normal	Normal	Normal	Normal

The results of the normality test are shown in table 3 above, showing statistical calculation results X^2Count < X^2table The results of the pretest and posttest show the same thing X^2Count $5,17 < X^2$table $7,81$, X^2Count $5,02 < X^2$table $7,81$, X^2Count $5,33 < X^2$table $7,81$, and X^2Count $3,34 < X^2$table $7,81$ therefore the data has a normal distribution.

The next test was to determine whether the results of the pretest and posttest for both classes were homogeneous or the same and comparable, a homogeneity test was carried out using the Fisher test (uij F). The data is homogeneous if F_Count< F_table. The following are the results of calculating pretest and posttest homogeneity in the experimental class and control class using the F test:

Table 4. Pretest and Posttest Homogenity Test Data for Control Class and Experimental Class

Statistic	Experiment and Control	
	Pretest	Posttest
F_{Count}	1,01	2,63
F_{table}	4,10	4,10
N_1	20	20
N_2	20	20
Information	Homogenity	Homogenity

The results of the homogeneity test are shown in table 4 above, which shows the statistical calculation results $F_{count} < F_{table}$ From the results of the pretest for the experimental and control classes as well as the results of the posttest for the experimental and control classes, it shows that the pretest data is homogeneous F_{count} $1,01 < F_{table}$ $4,10$ and posttest data is homogeneous F_{count} $2,63 < F_{table}$ $4,10$.

The data above can be used as a basis for hypothesis testing or t test. Hypothesis testing is carried out to answer a question in the problem formulation in research. Following are the results of the t test:

Table 5. Posttest Hypothesis Test Results in the Experimental Class and Control Class

Statistic	Mean	Varians	N	t_{count}	t_{table}
Experiment	70,75	21,9	20	7,336	2,024
Control	85,35	57,6	20		

Based on the results of the t test calculation, the t_{count} result was 7.336 with a confidence level of 95% with namely 2.024. So the result obtained is that t_{count} 7.336 > t_{table} 2.024. So H_0 is rejected and H_1 is accepted "there is a difference in the critical thinking abilities of experimental class students who use the somatic, auditory, visual and intellectual (SAVI) model and the control class who do not use the somatic, auditory, visual and intellectual (SAVI) model". With quite significant differences, it can be seen in the following graph:
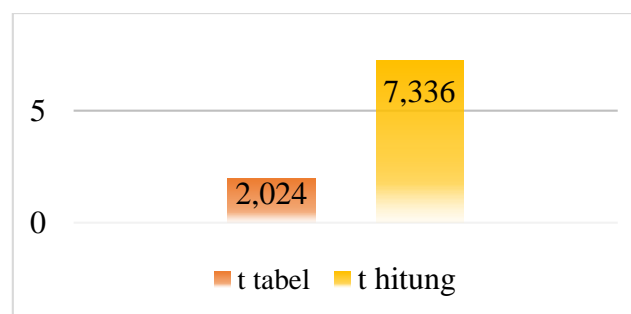

Figure 1. Graph of the t test or different test of critical thinking abilities.

To see the difference in increasing critical thinking skills, a t gain test was carried out, namely getting the following results:

Table 6. Gain t test

Statistic	Mean	Varians	N	t Count	t table
Experiment	0,71	0,012	20	7,416	2,024
Control	0,41	0,020	20		

Based on the results of the t gain test calculation, the t_{count} result was 7.336 with a confidence level of 95% with t_{table} namely 2.024. So the result obtained is that t_{count} 7.416 > t_{table} 2.024. So H_0 is rejected and H_1 is accepted "there is a difference in the increase in critical thinking skills of experimental class students who use the somatic, auditory, visual and intellectual (SAVI) model and the control class who do not use the somatic, auditory, visual and intellectual (SAVI) model".

In line with the explanation above, there are three things that are important for every person to have, namely (somatic, auditory, visual), so they can have an effect on improving the ability to ask questions and express opinions as well as improving students' critical thinking skills because they involve intellectually or the intelligence of the students themselves (Porter, 2015) .

CONCLUSION AND RECOMMENDATION

Based on the problem formulation and calculations from the data analysis described above, it can be concluded that there are differences in students' critical thinking abilities in the experimental class which uses the somatic, auditory, visual and intellectual (SAVI) model and the control class which does not use the somatic, auditory, model. visual and intellectual (SAVI). This means that the results of the tests carried out show that the experimental class has higher results than the control class. Apart from this, there is a difference in the increase in students' critical thinking abilities in the experimental class which uses the somatic, auditory, visual and intellectual (SAVI) model and the control class which does not use the somatic, auditory, visual and intellectual (SAVI) model. If we look at the average and the results of the gain calculations, it shows the difference in increase between the experimental class which has a higher increase compared to the control which has a moderate increase. From this discussion, it can be concluded that the somatic, auditory, visual and intellectual (SAVI) model has a significant effect on students' critical thinking abilities.

REFERENCES

Arifin, Z. (2016). Evaluasi Pembelajaran. Jakarta : Direktoral Jendral Pendidikan Islam, Kementrian Agama RI

Arikunto, S. (2015). Dasar-dasar Evaluasi Pendidikan. Jakarta : PT Rineka Cipta.

Arikunto, S. (2017). Prosedur Penelitian: Suatu Pendekatan Praktik. Jakarta

Anastasia Lia Taradipa, S. S. H. (2016). Penerapan Model Pembelajaran Somatic, Auditory, Visualization, and Intellectualy (Savi) Untuk Meningkatkan Pemahaman Konsep Proklamasi Kemerdekaan Indonesia. *Jurnal Didaktika Dwija Indria (SOLO)*, *4*(7).

Ansel, M. F., & Arafat, S. (2021). Jurnal PGSD. *Jurnal PGSD*, *11*(2), 128–134.

Armawati, A., Samad, A., & Azis, A. (2015). Penerapan Model Pembelajaran SAVI (Somatic, Auditori, Visual Dan Intelektual) Dapat Meningkatkan Hasil Belajar Fisika Pada Peserta Didik Kelas VII. A SMP Aisyiyah Sungguminasa. *Jurnal Pendidikan Fisika*, *3*(2), 116-122.

Dewi, M. R. S., Murda, I. N., & Pudjawan, K. (2019). Pengaruh Model Pembelajaran SAVI (Somatic , Auditori , Visual dan Intektual) Terhadap Keterampilan Berpikir Kritis IPS Siswa Sekolah Dasar. *Mimbar PGSD Undiksha*, *7*(1), 22–28.

Emily R. Lai. Critical Thinking: A Literature Review. Research Report. Always Learning. Pearson. 2011.

Ennis, R.H. 1985. A *logical Bassic for measuringCritical Thinking Skill. Educational Leadership.*

Fajriah, L., Nurfitriani, M., & Permana, R. (2020). Somatic, Auditory, Visual and Intellectual (SAVI) Learning Models Affect Students' Mathematics Learning Achievement. *International Journal of Elementary Education*, *4*(3), 376-383

Huda., & Miftahul. (2014). Model-model Pengajaran dan Pembelajaran. Yogyakarta: Pustaka Belajar.

Irwanto, M. Z., Rohman, P., Mahfuzh, M., Rozikin, A., & Sriyakul, T. (2020). Comparison of Somatic, Auditory, Visual, and Intellectual Learning Models and Snowballing Against Numerical Ability of Students. *Desimal: Jurnal Matematika*, *3*(1), 45-52

Kurnianingsih, Q. (2020). Penerapan Pendekatan Pembelajaran SAVI terhadap Kemampuan Berpikir Kritis Siswa pada Materi IPS di Kelas V SD. *Jurnal PGSD. Jurnal Pendidikan Guru Sekolah Dasar.*

Kusumawati, S. W. (2014). Penerapan Model Pembelajaran SAVI untuk Meningkatkan Keterampilan Pemecahan Masalah di Sekolah Dasar. *Jurnal Penelitian Pendidikan Guru Sekolah Dasar*, *1*(2), 2. http://herdy07.wordpress.com

Linda, Z., & Lestari, I. (2019). Berpikir Kritis Dalam Konteks Pembelajaran. In *Erzatama Karya Abadi* (Issue August).

Meier, D. (2003). The Accelerated Learning Handbook: Panduan Kreatif dan Efektif Program Pendidikan dan Penelitian. Terj Rahmani Astuti. Bandung: Kaifa.

Milton Keynes (2008). Thinking Critically. United Kingdom: Thanet Press. ISBN 978-0-7492-2920-7.

Mulyanto, H., Gunarhadi, G., & Indriayu, M. (2018). The effect of problem based learning model on student mathematics learning outcomes viewed from critical thinking skills. *International Journal of Educational Research Review*, *3*(2), 37-45.

Nahdi, D. S. (2017). Peningkatan Kemampuan Komunikasi Matematis Siswa Melalui Model Pembelajaran SAVI. Jurnal Cakrawala Pendas, 3(2).

Ngalimun, Muhammad Fauzani, Dan Ahmad Salabi. 2017. Strategi Dan Model Pembelajaran. Banjarmasin: Aswaja Pressindo

Redecker, C., et al. (2011). The Future of Learning: Preparing for Change.Luxembourg: Publications Office of the European Union,

Riduwan. (2018). *Metode dan Teknik Menyusun Tesis,* Bandung: Alfabeta

Siagian, M. D., Suwanto, S., & Sulastri, R. (2020). The Effectiveness of SAVI Approach-based Teaching Materials Oriented to Mathematical Connection Ability. *Jurnal Didaktik Matematika*, *7*(2), 105-120.

Simbolon, M. E., & Fitriyani, Y. (2021). Pengaruh Penerapan Media Pembelajaran Pop-Up Book Terhadap Hasil Belajar Siswa Sekolah Dasar. *Adi Widya: Jurnal Pendidikan Dasar*, *6*(1), 34-45.

Shoimin, A. (2014). 68 Model Pembelajaran Inovatif dalam Kurikulum 2013. Yogyakarta: Ar-Ruzz Media

Sulaksana, Y. T., Margunayasa, I. G., & Wibawa, I. M. (2019). Pengaruh model pembelajaran SAVI (Somatic Auditory Visualization Intellectualy) berbantuan LKS terhadap hasil belajar IPA. *Jurnal Pedagogi dan Pembelajaran*, *1*(3), 180-188.

Somantri, A. dan Muhiddin, S.A 2006. Statistika dalam penelitian. Bandung: Pustaka Setia

Sugiyono. (2016). *Metode Penelitian Pendidikan (pendekatan kuantitatif, kualitatif, dan R&D)* (cetakan 26). Alfabeta Bandung.

Susilowati, Y., & Sumaji, S. (2021). Interseksi Berpikir Kritis Dengan High Order Thinking Skill (Hots) Berdasarkan Taksonomi Bloom. *JURNAL SILOGISME: Kajian Ilmu Matematika dan Pembelajarannya*, *5*(2), 62-71.

Sutarna, N. (2018). Pengaruh Model Pembelajaran Savi (Somatic Auditory Visual Intellectualy) Terhadap Hasil Belajar Siswa Kelas Iv Sekolah Dasar. *Profesi Pendidikan Dasar*, *1*(2), 119. https://doi.org/10.23917/ppd.v1i2.6068

Yohani, D. F., Rakhmat, C., & Mulyana, E. H. (2014). Pengaruh pendekatan pembelajaran SAVI terhadap hasil belajar pada pembelajaran tematik di sekolah dasar. *PEDADIDAKTIKA: Jurnal Ilmiah Pendidikan Guru Sekolah Dasar*, *1*(2), 113-120.

Yuwono, M. R., Udiyono, U., Maarif, D. H., & Sulistiana, S. (2019). Students' Critical Thinking Profile To Solve The Problem Of Analytical Geometry Viewed From Gender. *Al-Jabar: Jurnal Pendidikan Matematika*, *10*(1), 37-46.

Zakiah, L dan Lestari, I. (2019). Berpikir Kritis dalam konteks pembelajaran. Bogor: Erzatama Karya Abadi