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How to Manage Numerical Abilities in Algebra Material?

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Abstract

Numerical ability is very help students understand the material, analyze any problems, and apply math concepts in daily life so that numerical abilities of students is a factor that can affect learning outcomes. Determine the effect of learning model Scramble and learning model with SAVI (Somatic, Auditory, Visual, and Intellegence) on the ability of numerical be the purpose of this article. The design of the research used Quasy Experimental Design, with the instrument used for the study in the form of test numerical ability. Data analysis used the T-test. Based on the results of the research concluded that the learning model Scrambler and learning model SAVI has a significant influence on numerical ability. And both of them is a model of learning which is equally effective against numerical abilities in order to improve learning outcomes is more optimal. But model pembelajaran SAVI is more effective than learning models scramble.
Keywords: Scramble Learning Model; SAVI Learning Model; Numerical Ability;

INTRODUCTION

In general, the results of students' mathematics learning in Indonesia are still far from expectations, although for some students the learning achievements are able to achieve maximum results. Factors that influence the success of students in mastering mathematics include numerical ability (Indrawati, 2015). Mathematics learning in schools should be able to equip students with the ability to calculate math problems quickly, think logically, and like to ask questions that are analytical (Irawan & Kencanawaty, 2016). Because mathematics will be easier to learn by people who have numerical abilities. Numerical ability is a special ability in the science of arithmetic (Haliana, Kadir, Kodirun, & Saleh, 2018), resulting in the ability to calculate quickly accompanied by managing numbers by thinking logically it can easily understand the lesson, so that with understanding and mastery of the material possessed, students are able to get optimal results (Jayantika, Ardana, & Sudiarta, 2013).

The learning model should be able to provide the widest possible space for students in building knowledge. A suitable model used in the learning process to improve the ability to calculate fast and think logically is the Scramble learning model. (Manalu & Siregar, 2019). Scramble learning model is widely used in various studies (Diani, Yuberti, & Syafitri, 2016; Fitrianti, Abidin, & Alifiani, 2019; Jannah, Lisnawati, & Sutisna, 2019; Malasari, Rasiman, & Sutrisno, 2018; Manalu & Siregar, 2019; Oktavia, Fadhilaturrahmi, & Marleni, 2019; Shintia, Bahar, & Elvia, 2019). Scramble learning model is a learning model by distributing question cards and answer cards accompanied by alternative answers available but with a random arrangement and students are tasked with correcting the answers so that they become the right answers (Diani et al., 2016). Learning models that can also improve student learning activities

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and outcomes through numerical ability by being able to work on solving problems, finding things for themselves and discussing problems with one another, namely the SAVI learning model (Somatic, Auditory, Visual, and Intellectual) (Saraswati & Maulana, 2019). The SAVI learning model is a way of learning that involves all the senses, learning by moving physically active, by utilizing as many senses as possible, and getting the whole body or mind involved in the learning process (Sundari, 2016). The SAVI learning model is widely used in various studies (Anas & Syafitri, 2019; Milawati, 2011; Rahmadian, Mulyono, & Isnarto, 2019; Sugesti, Simamora, & Yarmayani, 2018; Ulvah & Afriansyah, 2016; Yulianti, Haris, & Chandra, 2018). SAVI learning is learning by combining physical movements and intellectual activities and involving all the senses that have a great influence in learning. This learning is designed naturally to harmonize the learning atmosphere with special instructions based on the needs of the learning process without compromising aspects of student privacy (Kusumaningsih, Sutrisno, & Hidayah, 2019).

In previous studies conducted by several previous studies they used a lot of SAVI learning models to improve description writing skills (Rakhmawati, Koeshandayanto, & Gipayana, 2019). While SAVI learning models are still rarely used to improve student learning outcomes with their students' numerical abilities. The main objective of the SAVI learning model is students who are active in physical activities and intellectual activities in the learning process. Meire (Khusna & Heryaningsih, 2018) states that students can improve their ability to express their ideas (Intellectual) if they move something (Somatic) to produce images, diagrams, graphs etc. (Visual) while discussing what they are doing (Auditory) (Rahmadian et al., 2019). This requires students to develop numerical abilities so that it is easy to find solutions to mathematical problems.

Research on ability analysis and numerical ability improvement is mostly done by previous studies (Achdiyat & Utomo, 2018; Ayu & Lestari, 2019; Darmawan, Candiasa, & Widiartini, 2018; Gunarti, 2017; Indrawati, 2015; Irawan & Kencanawaty, 2016; Malenda, Kadir, & Suhar, 2018; Melani, Candiasa, & Hartawan, 2019) But research on numerical abilities of students using the Scramble learning model and the SAVI learning model (Somatic, Auditory, Visual, and Intellectual) has never been done. Based on previous research, this research is updated in terms of looking at the effect of the Scramble learning model and the SAVI learning model (Somatic, Auditory, Visual, and Intellectual) on the numerical abilities of students. So this study aims to determine the effect of the Scramble learning model and the SAVI learning model (Somatic, Auditory, Visual, and Intellectual) on the numerical abilities of students.

THE RESEARCH METHODS

This research uses the Quasi Experiment method. This study compares the experimental class with the scramble model and the experimental class with the SAVI model. The independent variable in this study is the application of the model, the Scramble Model and the SAVI Model. Valiabel bound in this study is Numerical ability. The data collection technique is to use observation, tests and documentation. While the data analysis technique used is the T

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test. The following table lists the interpretation of the effectiveness of the N-gain to measure the effectiveness of the learning model on numerical ability.

Table 1. Category of interpretation of the effectiveness of the N-gain score

Limitation	Category
g>0.7	High
0.3≤g≤0.7	Medium
g>0.3	Low

(Meltzer, 2002)

To measure the effectiveness of learning models using the effect size formula (Hake) (Becker, 2000). Effect size is a scale of the magnitude of the effect or effect of a variable to another variable, the magnitude of the difference or relationship, which is free from the influence of the sample size of a population. The formula for calculating the effect size test is:

$$d = \frac{\overline{X_1} - \overline{X_2}}{S_{gab}}$$

$$S_{gab} = \sqrt{\frac{(N1-1)S1^2 + (N2-2)S2^2}{N1+N2-2}}$$

Informations:
$\overline{X_1}$: Average Scramble experimental group
$\overline{X_2}$: Average of the SAVI experimental group
N1 : Number of Scramble experimental group samples
N2 : The number of SAVI experimental group samples
S1 : Variant of the Scramble experimental group
S2 : SAVI experimental group variant

Table 2. (Interpretation of effect size)

Effect Size	Percentage of control group who would be below average person in experimental group	Rank of person in a control group of 25 who would be equivalent to the average person in experimental group	Probability that you could guess which group a person was in from knowledge of their 'score'.	Equivalent correlation, *r* (=Difference in percentage 'successful' in each of the two groups, BESD)	Probability that person from experimental group will be higher than person from control, if both chosen at random (=CLES)
0.0	50%	13th	0.50	0.00	0.50
0.1	54%	12th	0.52	0.05	0.53
0.2	58%	11th	0.54	0.10	0.56
0.3	62%	10th	0.56	0.15	0.58
0.4	66%	9th	0.58	0.20	0.61
0.5	69%	8 th	0.60	0.24	0.64
0.6	73%	7 th	0.62	0.29	0.66
0.7	76%	6 th	0.64	0.33	0.69
0.8	79%	6 th	0.66	0.37	0.71
0.9	82%	5 th	0.67	0.41	0.74

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Effect Size	Percentage of control group who would be below average person in experimental group	Rank of person in a control group of 25 who would be equivalent to the average person in experimental group	Probability that you could guess which group a person was in from knowledge of their 'score'.	Equivalent correlation, *r* (=Difference in percentage 'successful' in each of the two groups, BESD)	Probability that person from experimental group will be higher than person from control, if both chosen at random (=CLES)
1.0	84%	4 th	0.69	0.45	0.76
1.2	88%	3rd	0.73	0.51	0.80
1.4	92%	2nd	0.76	0.57	0.84
1.6	95%	1st	0.79	0.62	0.87
1.8	96%	1st	0.82	0.67	0.90
2.0	98%	1st (or 1st out of 44)	0.84	0.71	0.92
2.5	99%	1st (or 1st out of 160)	0.89	0.78	0.96
3.0	99.9%	1st (or 1st out of 740)	0.93	0.83	0.98

(Diani et al., 2016)

The steps of the model applied are:

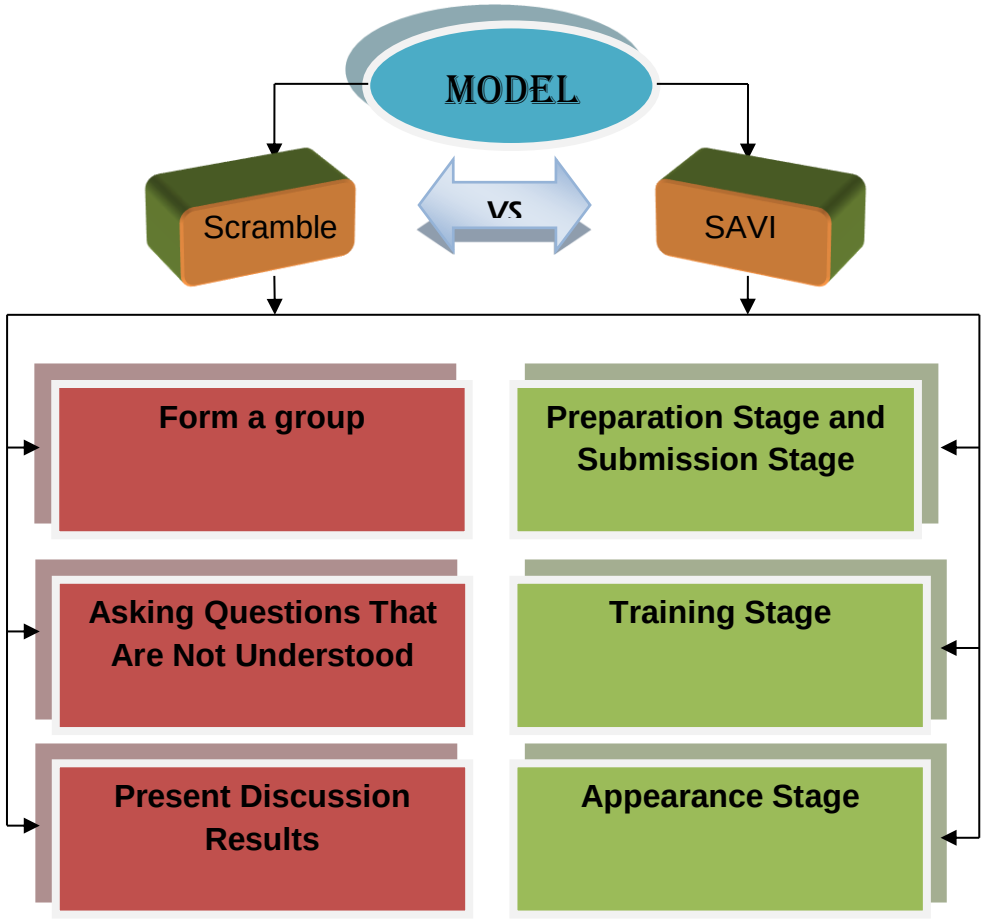

Figure 1 Steps for the Scramble Model and the SAVI Model

Figure 1 to the left is the steps of the Scramble learning model. With the first step, the teacher forms students into several groups, after the group has been formed, given a question

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card and answer card along with the answer sheet to each group, then students pair the saol card with an answer card that has been randomized, at the time of installation of the card then students must can analyze the answers requested from the problem and solve problems related to the answer sheets that have been given. The second step is that other group members check the answer card while pairing the saol card and the answer card. If there are questions that they do not understand then the other members ask the teacher the question. The final step is that the teacher asks each group to appoint one of their members to present the results of their discussion. After completing the presentation the time is given to ask questions and be given the opportunity to give a response.

Figure 1 to the right is the steps of the SAVI learning model. With the first step, preparation. The purpose of this preparation stage is to arouse the interests of the learners. At this stage what is done is to explain the learning objectives (auditory), divide the class into several groups (somatic), build interest, motivation and curiosity of students to learn (auditory). Furthermore, the delivery phase aims to help students find good material to learn in an interesting and fun way. At this stage what is done is delivering the material by giving a real example (auditory). From this example the teacher explains in detail (auditory). The second step is the training phase, to help students integrate new knowledge or skills by getting students to think. The steps taken are given a question sheet then discussed according to each group (visual and intellectual), asking students to present the results of the discussion and giving responses (somatic, auditory, visual, intellectual), assessing the results of student work (auditory). The final step is the performance stage, the purpose of which is to help students apply and develop knowledge so that learning achievement continues to increase. The stage taken is giving an evaluation in the form of a question sheet to find out students' understanding of the learning that has been done (somatic and intellectual), then reaffirming the material that has been taught and concluding then giving the assignment.

Knowing Scramble learning and SAVI learning models on numerical ability according to the numerical ability hypothesis test reference that can be seen that sig $\leq \alpha$ this means to a significant degree $\alpha = 0.05$ H_0 rejected. It can be concluded that there is a significant difference between the Scramble learning model and the SAVI learning model, and both are equally effective.

THE RESULTS OF THE RESEARCH AND THE DISCUSSION

Based on the results of research on the numerical abilities of students obtained from the pre-test and post-test given to the Scramble model experimental group and the SAVI model experiment can be seen in the following data convergence table:

Table 3. Description of the data

		N	Mean	Median	Std. deviation	Varian
pre test	Scramble	30	34.27	32.00	12.326	151.926
	SAVI	30	52.53	56.00	11.685	136.533
post test	Scramble	30	82.33	80.00	8.104	65.678
	SAVI	30	86.53	88.00	7.006	49.085

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Based on Table 3 it is known that the amount of pre-test and post-test data for the Scramble model and SAVI model is 30 students. The mean scores of students 'pre-test and post-test or mean for scramble are 34.27 and 82.33, while for SAVI the mean scores of students' pre-test and post-test or mean are 52.53 and 86.53. thus statistically descriptive it can be concluded that there are differences in the average pre-test and post-test of students between the Scramble learning model and the SAVI learning model. After the data description is obtained, the data is strengthened by the statistical inference (T-Test) in table 4.

Table 4. T 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
Pre	Equal variances assumed	.000	.996	-5.891	58	.000	-18.267	3.101	-24.474	-12.060
	Equal variances not assumed			-5.891	57.835	.000	-18.267	3.101	-24.474	-12.059
post	Equal variances assumed	.270	.605	-2.147	58	.036	-4.200	1.956	-8.115	-.285
	Equal variances not assumed			-2.147	56.812	.036	-4.200	1.956	-8.117	-.283

Based on Table 4 it is known the value of Sig. Levene's Test for Equality of Variance pre-test and post-test is 0.996> 0.05 and 0.605> 0.05, it can be interpreted that the data variance between Scramble and SAVI is homogeneous or the same. In the Equal variances assumed pre-test and post-test are 0,000 <0.05 and 0.036 <0.05, so as a basis for decision making in the Independent Sample Test, it can be concluded that H_0 is rejected and Ha is accepted. Thus it can be concluded that there are significant (real) differences between the average pre-test and post-test of students in the Scramble learning model and the SAVI learning model. Furthermore, from table 3 above, the known "Mean Differenc" pre-test and post-test values are -18,267 and -4,200. This value shows the difference between the average pre-test and post-test of students on Scramble and SAVI is 34.27 - 82.33 = -18.267 and 52.53 - 86.53 = -4.200. the difference between the differences is -24,474 to -12,060 and -8,115 to -0,285. to see the effectiveness of the learning model is strengthened by interpreting the N-gain score table below.

Table 5. N-gain Score

N-gain Score Test Calculation Results				
Model Scramble			Model SAVI	
Average	0.7118		Average	0.7074
Minimum	0.13		Minimum	0.40
Maximum	1.00		Maximum	0.94

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Based on the results of the N-gain score test in Table 5, it shows that the average N-gain score for the Scramble model is 0.7118 included in the high category seen in Table 1. With a minimum N-gain score of 0.13 and a maximum of 1.00. While the average N-gain score for the SAVI model is 0.7074 included in the high category seen in Table 1. With a minimum N-gain value of 0.40 and a maximum of 0.94. Then it can be seen from table 5 that it can be concluded that the use of the scramble model and the SAVI model are effective enough to improve students' numerical abilities.

Based on the N-gain test results obtained. Then the effect size test is done. The results obtained are d = 0.011. These results are then interpreted by using table 1 found that the Scrambel model and the SAVI model affect the numerical ability to improve student learning outcomes by 50%. The following calculation of the effect size test.

$$d = \frac{\bar{X}_1 - \bar{X}_2}{S_{gab}} = \frac{(0.7118 - 0.7074)}{0.402} = 0.011$$

Based on the results obtained that the SAVI learning model is more effective than the Scramble learning model. this is reinforced by seeing the steps of the SAVI learning model more systematic and complete than the Scramble learning model. One of the advantages of the SAVI model is that the steps of this model are divided into three stages so that each stage can be used more efficiently than the Scramble learning model. Another advantage of the SAVI model is that it emphasizes that learning utilizes all the sensory tools possessed by students, namely Somatic, Auditory, Visual, and Intellectual.

Based on previous research on Scramble learning models, the model has been effective against cognitive learning outcomes and cognitive skills (Zainuddin & Wilujeng, 2018) and increase the interest in learning of elementary school students (Oktavia et al., 2019). In this study, it turns out Scramble learning model also has a significant effect on numerical ability. The previous SAVI learning model was also effective on learning outcomes (Anas & Syafitri, 2019) and to problem solving abilities (Ulvah & Afriansyah, 2016). In this study, it turns out the SAVI learning model has a significant effect on numerical ability. But in this study, the two models are compared to numerical ability, both of which support the effectiveness of learning to obtain optimal learning outcomes. However, SAVI learning models are more effective on numerical abilities than Scramble learning models.

CONCLUSION AND SUGGESTION

Based on the results of research that has been carried out, it can be concluded that there is a significant influence between the Scramble learning model and the SAVI learning model on numerical ability. There is a significant influence between the Scramble learning model on numerical ability, on the significant effect between SAVI learning models on numerical ability. So it is hoped that educators and students can know that the Scramble learning model and the SAVI learning model can both support the improvement of numerical abilities. Both are effective learning models for use in the learning process. But SAVI learning models are more effective than Scramble learning models in order to improve learning outcomes that are more optimal on numerical abilities.

Researcher's suggestion is that educators and students are expected to be able to work together to be able to know numerical abilities and to know and explore the factors that can influence to improve it, it is necessary to know Scramble learning models and SAVI learning models, both of which are effective learning models of numerical abilities. Therefore, there is a need for good communication between the school and educative parents. Parents are expected to further increase higher awareness of the importance of children's education. And students are expected to be more active in learning and have a high curiosity about learning.

REFERENCES

Achdiyat, M., & Utomo, R. (2018). Kecerdasan Visual-Spasial, Kemampuan Numerik, dan Prestasi Belajar Matematika. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, *7*(3), 234–245. https://doi.org/10.30998/formatif.v7i3.2234

Anas, N., & Syafitri, K. (2019). Pengaruh Model SAVI (Somatic, Auditory, Visual Intellectual) Terhadap Hasil Belajar. *Nizhamiyah*, *IX*(1), 37–47.

Ayu, N., & Lestari, P. (2019). *Kovariabel Kemampuan Numerik Dan the Effect of Contextual Learning Implementation on Mathematical Learning Results With Numerical*. *5*, 72–87.

Darmawan, M. D., Candiasa, I. M., & Widiartini, N. K. (2018). Belajar Dasar dan Pengukuran Listrik Siswa Kelas X di SMK Negeri 1 Denpasar dengan Kovariabel Kemampuan Numerik. *Journal of Mathematics Education IKIP Veteran Semarang Volume*, *8*(2), 79–88.

Diani, R., Yuberti, Y., & Syafitri, S. (2016). Uji Effect Size Model Pembelajaran Scramble dengan Media Video Terhadap Hasil Belajar Fisika Peserta Didik Kelas X MAN 1 Pesisir Barat. *Jurnal Ilmiah Pendidikan Fisika Al-Biruni*, *5*(2), 265. https://doi.org/10.24042/jpifalbiruni.v5i2.126

Fitrianti, A., Abidin, Z., & Alifiani. (2019). Penerapan Model Pembelajaran Kooperatif Tipe Scramble dengan Media Question Card untuk Meningkatkan Kemampuan Pemecahan Masalah Siswa pada Materi Statistika Kelas VIII-A SMP Wahid Hasyim Malang. *JP3*, *14*(6), 78–92.

Gunarti, E. (2017). Hubungan Antara Kreativitas, Kemampuan Numerik dan Sikap Siswa Terhadap Pelajaran Matematika dengan Prestasi Belajar Matematika Siswa Kelas VIII SMP Negeri Se-Kecamatan Pundong. *UNION: Jurnal Ilmiah Pendidikan Matematika*, *5*(1), 1. https://doi.org/10.30738/.v5i1.934

Haliana, W. O., Kadir, Kodirun, & Saleh. (2018). Kemampuan Numerik Siswa Kelas VIII SMP Negeri 6 Kendari Ditinjau dari Perbedaan Jenis Kelamin dan Disposisi Matematika. *Pendidikan Matematika*, *9*(2), 218–228.

Indrawati, F. (2015). Pengaruh Kemampuan Numerik dan Cara Belajar terhadap Prestasi Belajar Matematika. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, *3*(3), 215–223. https://doi.org/10.30998/formatif.v3i3.126

Irawan, A., & Kencanawaty, G. (2016). Peranan Kemampuan Verbal dan Kemampuan Numerik terhadap Kemampuan Berpikir Kritis Matematika. *Jurnal Pendidikan*

Matematika FKIP Univ. Muhammadiyah Metro, *5*(2), 110–119.

Jannah, H. R., Lisnawati, S., & Sutisna, H. (2019). Pengaruh Model Pembelajaran Scramble Terhadap Motivasi Belajar Siswa pada Mata Pelajaran PKn di Kelas III SDIT Al-Madinah Cibinong Bogor. *Juara Akbar*, *4*(3), 189–195.

Jayantika, I. T., Ardana, I. M., & Sudiarta, I. G. P. (2013). Kontribusi Bakat Numerik, Kecerdasan Spasial, dan Kecerdasan Logis Matematis Terhadap Prestasi Belajar Matematika Siswa SD Negeri di Kabupaten Buleleng. *Jurnal Pendidikan Matematika*, *2*(2). https://doi.org/10.23887/jppm.v2i2.981

Khusna, H., & Heryaningsih, N. Y. (2018). The influence of mathematics learning using SAVI approach on junior high school students' mathematical modelling ability. *Journal of Physics: Conference Series*, *948*(1). https://doi.org/10.1088/1742-6596/948/1/012009

Kusumaningsih, W., Sutrisno, & Hidayah, F. (2019). Efektivitas Model Pembelajaran SAVI dan REACT Berbantuan LKS terhadap Kemampuan Komunikasi Matematis Siswa SMP Beberapa model pembelajaran yang diharapkan dapat meningkatkan alamiah untuk menyelaraskan suasana belajar yang baru dengan cara memperluas peng. *Journal of Mathematics Education IKIP Veteran Semarang Volume*, *3*(2), 197–206.

Malasari, E. Y. U., Rasiman, & Sutrisno. (2018). Efektivitas Model Pembelajaran Problem Based Learning dan Scramble terhadap Kemampuan Berpikir Kreatif Siswa. *Media Penelitian Pendidikan*, *12*(2), 169–176.

Malenda, T. O., Kadir, & Suhar. (2018). Kemampuan Numerik Siswa SMP Pesisir Ditinjau dari Perbedaan Jenis Kelamin dan Kemandirian Belajar Siswa SMP Negeri 14 Kendari. *Penelitian Pendidikan Matematika Volume*, *6*(3), 71–84.

Manalu, W., & Siregar, E. Y. (2019). Efektivitas Model Pembelajaran Scramble Terhadap Kemampuan Berpikir Kritis Matematis Siswa Di Smp Negeri 2 Pandan. *JURNAL MathEdu (Mathematic Education Journal)*, *2*(2), 93–98. Retrieved from http://journal.ipts.ac.id/index.php/MathEdu/article/view/1086

Melani, A. E. T., Candiasa, I. M., & Hartawan, I. G. N. Y. (2019). Pengaruh Penerapan Model Pembelajaran Pair Check Terhadap Kemampuan Numerik Siswa Kelas Vii Smp Negeri 3Gianyar. *Jurnal Pendidikan Matematika Undiksha*, *10*(1), 1. https://doi.org/10.23887/jjpm.v10i1.19900

Meltzer, D. E. (2002). The relationship between mathematics preparation and conceptual learning gains in physics: A possible "hidden variable" in diagnostic pretest scores. *American Journal of Physics*, *70*(12), 1259–1268. https://doi.org/10.1119/1.1514215

Milawati, T. (2011). peningkatan kemampuan anak drama dan menulis teks drama melalui model pembelajaran somatis auidtiri visual intelektual (SAVI). *Jurnal Penelitian Pendidikan*, *14*(2), 70–78.

Oktavia, S., Fadhilaturrahmi, & Marleni, L. (2019). Penerapan Model Pembelajaran Kooperatif Tipe Scramble untuk Meningkatkan Minat Belajar Siswa Sekolah Dasar. *Jurnal Ilmu Pendidikan*, *1*(3), 127–137. Retrieved from https://edukatif.org/index.php/edukatif/index

Rahmadian, N., Mulyono, & Isnarto. (2019). Kemampuan Representasi Matematis dalam Model Pembelajaran Somatic , Auditory , Visualization , Intellectually (SAVI). *Prosiding Seminar Nasional Matematika*, *2*, 287–292.

Rakhmawati, A. V., Koeshandayanto, S., & Gipayana, M. (2019). Peningkatan Keterampilan Menulis Narasi melalui Model Pembelajaran SAVI Berbantuan Media CD Interaktif. *Teori, Penelitian, Dan Pengembangan*, *4*(1), 40–45.

Saraswati, & Maulana, N. (2019). Pengaruh Model Pembelajaran SAVI (Somantik, Auditori, Visual Dan Intelektual) Terhadap Kemampuan Menulis Karangan Argumentasi Siswa SMA. *Jurnal Kajian Pendidikan Dan Pengajaran*, *5*(1), 62–70.

Shintia, W., Bahar, A., & Elvia, R. (2019). Perbandingan Hasil Belajar Kimia Siswa Menggunakan Model Pembelajaran Word Square dan Model Pembelajaran Scramble di MAN 2 Kota Bengkulu. *Jurnal Pendidikan Dan Ilmu Kimia*, *3*(1), 41–47.

Sugesti, I. J., Simamora, R., & Yarmayani, A. (2018). Perbandingan Kemampuan Pemecahan Masalah Matematis Menggunakan Model Pembelajaran SAVI dan Model Pembelajaran Langsung Siswa Kelas VIII SMPN 2 Kuala Tungkal. *Journal of Chemical Information and Modeling*, *53*(9), 1689–1699. https://doi.org/10.1017/CBO9781107415324.004

Sundari. (2016). Meningkatkan Hasil Belajar Siswa dalam Pembelajaran Matematika Melalui Pendekatan SAVI pada Siswa Kelas VB. *Qalam:Jurnal Ilmu Kependidikan*, *5*(2), 44–51.

Ulvah, S., & Afriansyah, E. A. (2016). Kemampuan Pemecahan Masalah Matematis Siswa ditinjau melalui Model Pembelajaran SAVI dan Konvensional. *Jurnal Riset Pendidikan*, *2*(2), 142–153. Retrieved from http://hikmahuniversity.ac.id/lppm/jurnal/2016/text07.pdf

Yulianti, S., Haris, V., & Chandra, A. N. (2018). Penerapan Media Video dalam Model Pembelajaran SAVI (Somatic , Audio , Visual and Intellectual) terhadap Hasil Belajar Siswa Pada Mata Pelajaran Fisika Kelas X1 IPA Di SMA N 1 Rambatan. *Tadris Fisika Fakultas Tarbiyah Dan Ilmu Keguruan IAIN Batusangkar*, 70–75.

Zainuddin, M., & Wilujeng, I. (2018). Pengaruh Pembelajaran IPA Model Cooperative Learning Tipe Scramble terhadap Hasil Belajar Kognitif Dan Keterampilan Kooperatif Peserta Didik Kelas VII SMP Negeri 1 Turi Materi Tata Surya The Effect Of Science Learning Based On Cooperative Learning Type SC. *Pendidikan IPA*, *7*(7), 361–367.