

Volume 7 Nomor 1, Februari 2022, halaman 121-130

**THE EFFECT OF SAVI AND EXPOSITORY LEARNING MODEL
AND STUDENT'S MOTIVATION ON MATHEMATICS
COMMUNICATION ABILITY**

**PENGARUH MODEL PEMBELAJARAN SAVI DAN EKSPOSITORI
SERTA MOTIVASI SISWA TERHADAP KEMAMPUAN
KOMUNIKASI MATEMATIK**

Sodikin

Akademi Minyak dan Gas Balongan, Jl. Soekarno – Hatta Indramayu, Sodikinng@gmail.com

ABSTRAK

Model pembelajaran ekspositori siswa mengerjakan latihan soal sendiri, mungkin juga saling bertanya dan mengerjakan bersama dengan siswa lain, atau disuruh membuatnya di papan tulis. Model SAVI adalah belajar dengan memanfaatkan semua alat indra yang dimiliki siswa Model pembelajaran yang digunakan pada penelitian ini adalah model pembelajaran SAVI dan model pembelajaran ekspositori. Tujuan Penelitian adalah mencari pengaruh model pembelajaran dan motivasi siswa terhadap kemampuan komunikasi matematik pada siswa kelas XI SMAN di Indramayu. Metode penelitian yang digunakan adalah penelitian kuantitatif dengan metode penelitian eksperimen. Teknik analisis penelitian ini menggunakan ANAVA 2 jalur (Analisis Varian dua jalur). Populasi penelitian ini menggunakan semua siswa kelas XI SMAN di Indramayu. Sampel dalam penelitian adalah sebanyak 68 siswa, 35 siswa berasal dari kelas XI IPA I SMAN 1 Lohbener dan 33 siswa berasal dari kelas XI IPA II SMAN 1 Indramayu. Hasil penelitian membuktikan, bahwa: (1) ada pengaruh signifikan model pembelajaran terhadap kemampuan komunikasi matematika siswa SMAN di Indramayu. (2) ada pengaruh signifikan motivasi belajar terhadap kemampuan komunikasi matematika siswa SMAN di Indramayu. (3) terdapat pengaruh interaktif yang tidak signifikan model pembelajaran dan motivasi belajar terhadap kemampuan komunikasi matematika siswa SMAN di Indramayu. Hasil penelitian ini dapat memberikan masukan kepada guru tingkat SMA khususnya kepada guru matematika untuk meningkatkan pendidikan dengan digunakanya model pembelajaran yang baik dalam rangka menumbuhkan motivasi belajar siswa, sehingga dapat mengoptimalkan kemampuan komunikasi matematik siswa.

Kata kunci: Model Pembelajaran, Motivasi Belajar Siswa, Kemampuan Komunikasi

ABSTRACT

In the expository learning model, students do the exercises alone, maybe ask each other and work together with other students, or questions are made on the blackboard. The SAVI model is learning by utilizing all the senses owned by the students. The learning model used in this research is the SAVI learning model and the expository learning model. The purpose of this research is to find out the effect of learning model and motivation on mathematical communication skills in class XI SMAN students in Indramayu. The research method used is quantitative research with experimental research methods. The analysis technique of this study uses 2-way ANOVA (two-way analysis of variance). The population of this study used all students of class XI SMAN in Indramayu. The sample in this study was 68 students, 35 students came from class XI IPA I SMAN 1 Lohbener and 33 students came from class XI IPA II SMAN 1 Indramayu. The results of the study prove that: (1) there is a significant effect of the learning model on the mathematical communication skills of SMAN students in Indramayu. (2) there is a significant effect of learning motivation on the mathematical communication ability of SMAN students in Indramayu. (3) there

is an insignificant interaction effect of the learning model and learning motivation on the ability. Communication, mathematics of SMAN students in Indramayu. The results of this study can provide input to high school teachers, especially mathematics teachers, to improve education with a good learning model in order to foster student learning motivation, so as to optimize students' mathematical, communication skills.

Keywords: *Learning Model, Student Learning Motivation, Mathematical Communication Ability*

How to Cite: Sodikin. (2022). **The Effect of SAVI And Expository Learning Model And Student's Motivation On Mathematics Communication Ability.** *Mathline: Jurnal Matematika dan Pendidikan Matematika*, Vol. 7 No. 1, 121-130.

DOI: <https://doi.org/10.31943/mathline.v7i1.263>

PRELIMINARY

Education is a basic need at this time, many people realize the importance of education in managing the best life. Therefore, every country tries to advance the field of education to prepare quality and competitive Human Resources so that education is an inseparable factor in determining the quality of Human Resources (Yusuf, 2019).

One of the educations in schools is mathematics education. This can be seen from human activities every day with problems related to mathematics, ranging from simple problems to complex problems. One of the means in the process of forming quality human beings is to carry out mathematics learning in schools. Daryanto (2013) suggests that mathematics taught in schools is to improve students' thinking skills. In addition, increasing students' creativity can be trained by learning mathematics systematically and according to learning patterns.

The explanation shows that it is important to learn mathematics. However, in reality, mathematics is still a subject that is less liked by students because they consider mathematics to be a difficult subject. This is reflected in the results of the mathematics test results of SMAN students in Indramayu having an average score that is still low due to several factors, namely factors originating from the child (internal) and in the child (external). Abin Syamsuddin, quoting Loree (2007), suggests the factors obtained from students, including the level of intelligence insight possessed by students, the age factor, and the level of maturity of the child, gender or gender, readiness, and learning maturity. While the factors located outside the students include facilities and infrastructure for teaching and learning activities, strategies and learning models used by teachers, and motivation from teachers. In this study, the authors focus on two factors to be studied, namely the motivational factors of students (internal factors) and the learning model factors used by teachers (external factors).

The way to create active learning activities between students and teachers is to apply the SAVI or Somatic, Auditory, Visualization, and Intellectually model. According to Herdian (2009), one of the lessons that can involve active students is to involve emotions, the whole body, all the senses, and all the depth and breadth of the person. According to Sohimin (2014) that the Somatic, Auditory, Visualization, and Intellectually learning model is learning by utilizing all the senses that students have. SAVI stands for Somatic Auditory Visualization Intellectually which can be described in general as follows:

- a. Somatic: Learning by doing and moving.
- b. Auditory: Learn by communication and listening.
- c. Visualization: Learning through observing and describing.
- d. Intellectually: Learn by solving problems and thinking.

The learning model used in addition to the SAVI model is an expository learning model. The expository model is a learning activity that focuses on the process of delivering teaching materials verbally from teaching staff to groups of students with the aim of students being able to master the subject matter to the fullest. In the expository learning model, the teacher is more active than the students. The expository learning model allows students to solve practice questions on their own, it is also possible to ask questions and solve problems together with other students, or ask students to make them on the blackboard (Suherman et al., 2001).

According to Hamzah B. Uno (2006) that motivation is strength or power, originating from within or from outside that makes a person able to achieve certain predetermined goals. Meanwhile, according to Oemar Hamalik (2014: 158) that motivation is a change in the energy that exists in a person's personality which is marked by the emergence of feelings and reactions in achieving goals. This is in line with Sadirman (2011: 75) who states, "Motivation will cause changes in the energy contained in the human person, causing it to cling to feelings and emotions after acting or doing something".

The indicators in this study are in line with Hamzah B. Uno quoted by Suprijono (2013), classified as follows: There is a desire and desire to succeed, there is encouragement and need in learning activities, there are expectations and needs in learning activities, there is appreciation. or rewards in learning, interested in doing learning activities, the existence of a conducive learning environment that allows students to learn well. By giving good motivation to students before learning and using appropriate learning

models, it is hoped that students can learn mathematics more actively, fun, creatively, and innovatively and students can work on math problems well. So that students' mathematical abilities will be good.

Mathematical communication skills can be interpreted as a student's ability to convey something he knows through dialogue events or mutual relationships that occur in the classroom environment, where message transfer occurs. The message that is transferred contains the mathematical material that students learn, for example in the form of concepts, formulas, or strategies for solving a problem. The parties involved in communication events in the classroom are teachers and students. How to transfer the message can be orally or in writing. Mathematical communication ability in this study is the result of learning mathematics.

The purpose of this study was to determine the effect of the learning model on the mathematical ability of State Senior High School students in Indramayu, the effect of student motivation on the mathematical communication skills of State Senior High School students in Indramayu and to determine the interactive effect of the learning model and student motivation on the mathematical communication skills of State Senior High School students in Indramayu. From several descriptions of the research above, the author wishes to carry out research on the Effect of the SAVI Learning Model and Expository Learning Model and Student Motivation on Mathematical Communication Ability.

METHOD

The approach used is quantitative research with experimental research methods. A research method is a way or a way to get back the solution to all the problems posed. Meanwhile, according to Priyono (2016) Research Method is a way of doing something by using the mind carefully to achieve a goal. This research method uses the experimental method.

Before analyzing the data on the effect of the data variables, then the data analysis technique was using inferential statistics, two-way analysis of variance (2-way ANOVA). In this study, the independent variable is Learning Model (X1), Student Motivation (X2) and the dependent variable is Mathematical Communication Ability (Y).

In this case, the target population is all research objects with certain characteristics contained in the research area. According to Martono (2017), the population is the entire object or subject that is in an area and fulfills certain conditions related to the research problem. The population for this study is the mathematical communication ability of all XI

SMAN students in the Indramayu Regency for the 2019/2020 Academic Year. Which is limited to two schools with an amount of $N \geq 500$

The samples used in this study were 68 students, 35 students came from class XI IPA 1 SMAN 1 Lohbener, and 33 students came from class XI IPA II SMAN 1 Indramayu. Class XI MIPA I as the experimental class, the experimental class with the treatment using the somatic auditory visualization intellectually learning model and class XI MIPA 2 as the control class, the control class with the treatment using the expository learning model. The research design is as shown in table 1.

Table 1. Analysis Design

		A	
		A₁	A₂
B	B ₁	A_1B_1	A_2B_1
	B ₂	A_1B_2	A_2B_2
	B ₃	A_1B_3	A_2B_3

Description:

A : Learning Model

A₁ : SAVI Learning Model

A₂ : Expository Learning Model

B : The Level of Student Motivation

B₁ : The Level of Student Motivation is High Category

B₂ : The Level of Student Motivation is Medium Category

B₃ : The Level of Student Motivation is Low Category

The sampling method used is the "Multi-Stage Random Sampling" sampling technique. Multi-Stage Random Sampling is a sampling technique that requires a minimum of 2 stages of sampling. To determine the class of the research sample, the researcher first wrote down the number of classes on the paper, then two papers were taken at random, the experimental group and the control group were obtained.

The data collection technique consisted of 2 instruments in the form of a questionnaire and a test, namely to collect data about student motivation and a test for mathematical communication skills. The data source is the source of the data referred to in the study is the subject from which the data can be obtained (Suharsimi Arikunto, 2013). In this study, to obtain data about the level of motivation to learn by making instruments or questionnaires made by the author himself based on references from various valid sources and will be distributed to students before treatment is carried out or before learning activities begin. While the data on mathematical communication skills from the

mathematical communication skills test in the form of description questions given after the learning activities are completed. After testing the respondents, then analyzing the validity of all variables, the results of the instrument test are as follows.

Table 2. Validity of Test Result of Mathematical Communication Ability Instrumen

No. Soal	r_{xy}	t_{hitung}	t_{tabel}	Keterangan	
				Valid/Tidak	Interpretasir _{xy}
1	0,585	3,605		Valid	Sedang
2	0,337	1,791		Valid	Rendah
3	0,578	3,533		Valid	Sedang
4	0,538	3,191		Valid	Sedang
5	0,502	2,900		Valid	Sedang
6	0,803	6,739		Valid	Sangat Tinggi

From the test results of the instrument, it can be seen from the six questions, the questions are valid. Therefore, the researcher can use the six questions.

The reliability test for the instrument of the mathematical communication ability variable used the Cronbach Alpha formulation. reliability test is the extent to which the measurement results using the same object will produce data that is (Sugiyono, 2017: 130). The formula used to calculate reliability is the alpha formula, this is because the questions used in the study are in the form of a description test/interval data type. , so it can be used to collect data. The instrument used is instrument numbers 1,2,3,4,5 and 6.

The following instruments for students' mathematical communication skills are as shown in Table 3.

Table 3. Mathematical Communication Ability Instrumen

No.	Instrumen																		
1	<p>Diketahui data nilai ulangan harian matematika siswa kelas XI IPA 1 sebagai berikut: 64, 75, 50, 70, 60, 80, 55, 78, 85, 50, 90, 75, 60, 85, 78, 75, 85, 98, 75, 78, 98, 50, 90, 70, 78, 60, 80, 85, 75, 50.</p> <p>Gambarlah data tersebut dalam bentuk tabel!</p>																		
2	<p>Diketahui data jumlah korban kecelakaan di Kabupaten Indramayu selama 5 tahun terakhir sebagai berikut:</p> <table border="1"> <thead> <tr> <th>Tahun</th> <th>Jumlah</th> </tr> </thead> <tbody> <tr> <td>2010</td> <td>10</td> </tr> <tr> <td>2011</td> <td>20</td> </tr> <tr> <td>2012</td> <td>15</td> </tr> <tr> <td>2013</td> <td>28</td> </tr> <tr> <td>2014</td> <td>25</td> </tr> </tbody> </table> <p>Gambarlah data jumlah korban kecelakaan tersebut dalam bentuk diagram batang!</p>	Tahun	Jumlah	2010	10	2011	20	2012	15	2013	28	2014	25						
Tahun	Jumlah																		
2010	10																		
2011	20																		
2012	15																		
2013	28																		
2014	25																		
3	<p>Berikut ini adalah data banyaknya siswa kelas XI IPA yang menyukai jenis mata pelajaran:</p> <table border="1"> <thead> <tr> <th rowspan="2">Mata Pelajaran</th> <th colspan="2">Jenis Kelamin</th> <th rowspan="2">Jumlah</th> </tr> <tr> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>Matematika</td> <td>62</td> <td>88</td> <td>150</td> </tr> <tr> <td>Kimia</td> <td>46</td> <td>52</td> <td>98</td> </tr> <tr> <td>Fisika</td> <td>87</td> <td>53</td> <td>140</td> </tr> </tbody> </table> <p>Gambarlah data tersebut dalam diagram batang!</p>	Mata Pelajaran	Jenis Kelamin		Jumlah			Matematika	62	88	150	Kimia	46	52	98	Fisika	87	53	140
Mata Pelajaran	Jenis Kelamin		Jumlah																
Matematika	62	88	150																
Kimia	46	52	98																
Fisika	87	53	140																
4	<p>Berikut ini adalah data hasil penjualan beras oleh agen beras pada kurun waktu Januari-Juli 2014 :</p> <table border="1"> <thead> <tr> <th>Bulan</th> <th>Jumlah(ton)</th> </tr> </thead> <tbody> <tr> <td>Januari</td> <td>3,5</td> </tr> <tr> <td>Februari</td> <td>5,6</td> </tr> <tr> <td>Maret</td> <td>2,4</td> </tr> <tr> <td>April</td> <td>6,8</td> </tr> <tr> <td>Mei</td> <td>7</td> </tr> <tr> <td>Juni</td> <td>8,4</td> </tr> <tr> <td>Juli</td> <td>8,8</td> </tr> </tbody> </table> <p>Gambarlah data tersebut dalam diagram garis!</p>	Bulan	Jumlah(ton)	Januari	3,5	Februari	5,6	Maret	2,4	April	6,8	Mei	7	Juni	8,4	Juli	8,8		
Bulan	Jumlah(ton)																		
Januari	3,5																		
Februari	5,6																		
Maret	2,4																		
April	6,8																		
Mei	7																		
Juni	8,4																		
Juli	8,8																		
5	<p>Berikut ini adalah tabel anggota ekskul olahraga SMAN 1 Lohbener:</p> <table border="1"> <thead> <tr> <th>Jenis Olahraga</th> <th>Jumlah Anggota</th> </tr> </thead> <tbody> <tr> <td>Sepakbola</td> <td>55</td> </tr> <tr> <td>Basket</td> <td>50</td> </tr> <tr> <td>Voli</td> <td>45</td> </tr> <tr> <td>Bulu tangkis</td> <td>25</td> </tr> <tr> <td>Tenis meja</td> <td>20</td> </tr> <tr> <td>Lain-lain</td> <td>5</td> </tr> </tbody> </table> <p>Gambarlah data tersebut menggunakan diagram lingkaran!</p>	Jenis Olahraga	Jumlah Anggota	Sepakbola	55	Basket	50	Voli	45	Bulu tangkis	25	Tenis meja	20	Lain-lain	5				
Jenis Olahraga	Jumlah Anggota																		
Sepakbola	55																		
Basket	50																		
Voli	45																		
Bulu tangkis	25																		
Tenis meja	20																		
Lain-lain	5																		

- 6 Berikut ini tabel tinggi badan pemain sepakbola (dalam cm) di SMAN 1 Lohbener Football Club:

Interval	frekuensi
160-164	2
165-169	7
170-174	10
175-179	8
180-184	3

Gambarlah data tersebut dalam *ogive* positif!

Before analyzing the data, first test the analysis requirements. This study uses normality, data, and homogeneity tests. The results of the normality and homogeneity tests above stated that the sample was obtained from a normally distributed population and the variance was homogeneous. Because the prerequisites for the analysis were met, a two-way ANOVA test was carried out.

RESULT AND DISCUSSION

In this study, hypotheses were tested by statistical methods through two-way analysis of variance (2-way ANOVA). The results of data calculations, the authors use the SPSS 23 software program are as follows.

Based on the analysis of two-way variance (2-way ANOVA) on the variable learning model (A)

Table 4. SPSS Output ANOVA Result 2 Path
Test of Between Subject Effects
Dependent Variable: Mathematical Communication Skill

Source	Type III Sum of Square	df	Mean Square	F	Sig.
^A Corrected Model	176,938 ^a	5	35,388	8,584	,000
Intercept	22070,748	1	22070,748	5353,797	,000
A	76,757	1	76,757	18,619	,000
B	55,667	2	27,833	6,752	,002
A * B	2,759	2	1,379	,335	,717
Error	255,592	62	4,122		
Total	30842,000	68			
Corrected Total	432,529	67			

R Squared = ,409 (Adjusted R Squared = ,361)

As shown in Table 4, sig. 0.000 < 0.05 with FH value = 18.619. then H1 is accepted and it is concluded that there is a significant effect of the Learning Model on Mathematical Communication Ability. In the Student Motivation variable (B) obtained sig. 0.002 < 0.05 with FH value = 6.752. then H1 is accepted and it is concluded that there is a significant effect of Student Motivation on Mathematical Communication Ability. While the interactive variable between the Learning Model and Student Motivation (A*B) obtained sig. 0.717 > 0.05 with FH value = 0.335. then H1 is rejected and it is concluded that there is an interactive effect that is not significant. Learning Model and Student Motivation on Mathematical Communication Ability. The results of the research are that there is a significant influence of the learning model on the mathematical communication skills of SMAN students in Indramayu, there is a significant influence of learning motivation on the mathematical communication skills of SMAN students in Indramayu, there is an interactive influence that is not significant on the learning model and learning motivation on the mathematical communication skills of SMAN students. in Indramayu, obtained significantly.

CONCLUSION

From the results of the research and discussion that the authors have described in previous chapters, the following conclusions can be drawn:

1. There is a significant influence of the learning model on the mathematical communication skills of SMAN students in Indramayu, obtained a significant 0.000 < 0.05 with FH = 18.619.
2. There is a significant influence on learning motivation on the mathematical communication skills of SMAN students in Indramayu, obtained a significant 0.002 < 0.05 with FH = 6.752.
3. There is an interactive influence that is not significant learning model and learning motivation on the mathematical communication skills of SMAN students in Indramayu, obtained significant 0.717 > 0.05 with FH = 0.335.

REFERENCES

Suprijono. A. (2013). *PAIKEM Cooperative Learning Theory & Applications*. Yogyakarta: Learning Library.

- Shoimin, A. (2014). *68 Innovative Learning Models in the 2013 Curriculum*. Yogyakarta: AR-Ruzz Media.
- Daryanto. (2013). *Competency Standards and Professional Teacher Performance Assessment*. Yogyakarta: Gava Media.
- Hidayat, D.R. (2011). *Personality Psychology in Counseling*. Bogor: Ghalia Indonesia.
- Huda, M. (2013). *Teaching and Learning Models*. Yogyakarta: Learning Library.
- Yusuf, M. (2019). Humans as Pedagogical Beings. *Journal of Education*, 8(1), 9-16.
- Nurhasim. (2013). The Influence of Somatic, Auditory, Visual, Intellectual Learning Models on the Mathematical Reasoning Ability of Class VII Students at MTs Negeri Jatibarang, Indramayu Regency. Thesis (unpublished). *Mathematics Education Unwir, Indramayu*.
- Priyono. (2016). *Quantitative Research Methods*. Sidoarjo: Zifatama.
- Riduwan. (2012). *Basic Statistics*. Bandung: Alfabeta.
- Isnaeni, R. Ngadino Y., Daryanto, J. 2012. The use of the Somatic, Auditory, Visualization, And Intellectually (SAVI) Learning Model to improve the style concept of the fifth-grade students of MI Nurul Islam Kawedusan Kebumen. *Journal of PGSD Education*, 1(8), 20 – 29.
- Sugiyono. (2012). *Qualitative Quantitative Research Methods and R&D*. Bandung: Alfabeta.
- Sugiyono. (2013). *Statistics for Research*. Bandung: Alfabeta.
- Suharsimi Arikunto. (2013). *Research Procedure: A Practical Approach*. Jakarta: PT. Rineka Cipta.
-