JURNAL
Pendidikan, Sains, Sosial dan Agama
SEKOLAH TINGGI AGAMA BUDDHA NEGERI RADEN WIJAYA WONOGIRI

# Learning With A Saintific Approach On Students' Interests And Learning Outcomes In The Quadragous Function Material In Class X

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**Article History:**
*Accepted: 14 November 2024* *Revised: 15 May 2025* *Published: 31 July 2025*

***Abstract***

This study aims to determine the learning with a scientific approach to students' interests and learning outcomes in the quadratic function material at SMK Negeri 5 Medan 2024/2025. The type of research used is quantitative descriptive. The research population was all class X, and the research sample consisted of 64 class The sampling technique was carried out using the purposive sampling technique. The instruments used were tests, questionnaires and observation sheets. Hypothesis testing in this study used the t-test and descriptive test. The results of the study showed that: (1) learning with a scientific approach has an effect on students' learning interests, (2) the magnitude of the influence of learning with a scientific approach on students' learning interests is 73.7%, (3) learning with a scientific approach has an effect on students' learning outcomes, (4) the magnitude of the influence of learning with a scientific approach on students' learning outcomes is 89.9%, (5) learning with a scientific approach to students' learning interests is effective, (6) learning with a scientific approach to students' learning outcomes is effective.

**Keywords** : Learning, scientific approach, interest in learning, learning outcomes

## INTRODUCTION

Mathematics is a subject studied by students from elementary school to university. It is crucial for the development of individual thinking skills, and it is a universal science that serves as the foundation for the development of other sciences (Pujiarti et al., 2022). The goal of learning mathematics as a science is to develop logical, critical, systematic, objective, disciplined, and honest thinking skills to solve problems in mathematics, science, and everyday life (Waluyati & Irfan, 2022).

However, in reality, until now many problems in mathematics education in Indonesia are still considered low. Where the results of the PISA survey show that Indonesia occupies a low position, namely 73rd out of 79 other countries (OECD, 2019: 1), and student semester

exam scores are very low, students have a negative view of mathematics learning, students have difficulty understanding the meaning of mathematics learning problems (Fitriani & Rohayati, 2022), students consider mathematics to be the most difficult subject and boring because it is full of formulas (Ikhlas, 2020).

There are many causal factors that can influence the low results of mathematics education in Indonesia, including an inadequate learning process.

well, teachers are less skilled in providing learning (Haryani, Nurkhoiroh, Suardika, Haryanto, & Pulungan, 2022), students are less interested because they think that mathematics is difficult to understand (Novitasari, Indrawati, & Risfianty, 2018), students are less motivated in learning mathematic, students lack concentration during mathematics learning, and there are still students whose learning responses are still lacking (siti Sundari, Handayani, & Mulyawati, 2019).

Quadratic functions are an important mathematical learning material because they are related to real life. Quadratic functions are one of the many mathematical materials that are relevant to everyday life. The purpose of learning quadratic functions is to analyze errors in working on quadratic function material problems. However, student learning outcomes in the mathematical quadratic function material obtained an average score of 78.50 . In reality, problems that occur in quadratic functions, such as students' low understanding of the concept in the quadratic function material, students have difficulty in understanding quadratic function problems (Yudha, 2019). The contributing factors are that students still make many mistakes in solving problems regarding quadratic functions, students do not understand the symbols in mathematics, students do not work enough on problems related to quadratic functions (Hanifah, 2016).

Interest in learning is a feeling of preferring something and having a fascination with a thing or activity based on self-awareness (Yanti, Laswadi, Ningsih, Putra, & Ulandari, 2019). Interest in learning is about accepting the relationship between oneself and something outside oneself. Student achievement in a subject depends on their interest in learning. Student interest greatly influences the learning process; the greater a student's interest in learning, the greater their motivation to learn, thus successfully mastering the learning material and achieving learning objectives (Tangkas, Japa, Japa, Rati, & Rati, 2020). In reality, the problem that occurs is that student interest in learning mathematics can be said to be low. The contributing factors are a lack of student interest in learning mathematics where teachers dominate learning activities and a lack of learning resources Learning is still centered on the teacher (teacher teacher), causing students to tend to be passive and lack student involvement in learning. Interest in learning contributes to improving a person's learning outcomes depending on their interests (Siahaan & Pane, 2021).

In the world of education, learning outcomes are a benchmark for success during learning. Learning outcomes are the skills acquired by students after a learning activity. Learning outcomes can be interpreted as the degree of student success in learning mathematics at school, expressed in scores obtained from test results. Learning outcomes include cognitive skills. According to Nuriati et al. (Agustin, 2019) students' cognitive mathematics learning outcomes are the results obtained through tests that measure the skills, understanding, and mastery of the material possessed by students after participating

in mathematics learning. However, to date, student learning outcomes are faced with the problem of low student learning outcomes. The contributing factors are low student learning outcomes due to lack of mastery of the material, low student learning outcomes when teachers give daily tests where students get scores below the Minimum Competency (KKM).

Based on information obtained from interviews with mathematics teachers at SMK Negeri 5 Medan, it was found that the interest and learning outcomes of 10th grade students in mathematics are still low in working on quadratic function problems. Most students understand when the teacher explains the material and provides examples of problems. However, students have difficulty answering problems with different cases. For example, there are students who understand the problems in quadratic function problems and are able to complete arithmetic operations well, but are confused about relating their work to the initial problem of quadratic functions. On the other hand, there are students with good arithmetic operations, but fail to understand the meaning of the problem, so they use inaccurate formulas for their calculations. The main cause is a lack of understanding of how to solve problems in mathematics and a lack of interest in learning to work on problems related to quadratic functions (Putriadi, 2020).

To overcome the various problems of low student interest and learning outcomes, an approach that can make students more active can be applied, namely learning using a scientific approach. The scientific approach is a learning that can guide students to acquire knowledge with their own abilities through several stages or certain steps . The scientific approach is a learning process designed in such a way that students actively construct learning concepts through the stages of observing (identifying problems), formulating problems, collecting data, analyzing data, drawing conclusions, and communicating concepts. In scientific learning, students are required to play an active role in the learning process so that learning can be utilized by teachers and students in studying the material on quadratic functions. Through the application of learning with a scientific approach, it is hoped that student interest and learning outcomes will be better than before (Bagaskara, 2025).

Based on the description above, the researcher will conduct a study entitled Learning with a Scientific Approach to Interest and Learning Outcomes in Quadratic Function Material in Class X of SMK Negeri 5 Medan.

## RESEARCH METHODS

This research was conducted in class X of SMK Negeri 5 Medan, located at Jl. Timor No. 36, Gaharu, Medan Tim. District, Medan City, North Sumatra. The time of this research was in the 2024/2025 academic year, even semester.

A population is a group of objects and subjects with certain qualities and characteristics, selected by researchers to be studied and conclusions drawn. In this study, the population studied included 10th-grade students of SMK Negeri 5 Medan, which consists of 10 classes.

A sample is a subset that represents the size and characteristics of a population (Supriyanto, 2019). The sampling technique used in this study was Cluster Random

Sampling. Therefore, the sample size was two 10th grade classes, each with 64 students, who were assumed to have similar initial abilities.

The type of research used by researchers is descriptive quantitative. According to Sugiyono (2017:9) that "The quantitative method is a way of collecting data with research instruments and data analysis based on quantitative descriptive statistics with the aim of testing the formulated hypothesis". According to Creswell (Raini, 2021)that "Quantitative research is a method for testing certain theories by examining the relationship between variables measured with descriptive quantitative data analysis research instruments that aim to propose established hypotheses". According to Creswell and Clark (Hapsari, Sumantri, & Astra, 2019) that "Descriptive research aims to describe the phenomena that exist in a population. This research involves collecting detailed data on certain variables or characteristics without conducting experiments (Partayasa, Suharta, & Suparta, 2020).

The research design in learning uses a scientific approach to interest and learning outcomes, using a randomly selected One-Shot Case Study design (Safitri & Sukma, 2020). This design can be used if the research is on a group that is given treatment, and then the results are observed (Asma, Sesmiarni, Iswantir, & Aprison, 2022).

Once the research data has been collected, data analysis is performed. Data analysis is a series of activities that group, systematize, interpret, and verify data to ensure a phenomenon has a scientific basis. There are two types of data analysis used in this study: inferential statistical analysis and descriptive analysis (Dipayana, Gading, & Japa, 2019).

## RESULTS AND DISCUSSION

### Time and Place of Research

This research was conducted in the odd semester from February 13 to March 13, 2025 in class X TKRO-4 and X TKRO-5 of SMK Negeri 5 Medan, Jl. Timor No. 36, Gaharu, Medan Tim. District, Medan City, North Sumatra.

### Research Instrument Trial Results

This study used research instruments to measure student learning outcomes. Prior to data collection, the items were tested for item validity, reliability, difficulty, and discriminatory power. Based on the results of the trial, the validity, reliability, difficulty, and discriminatory power of the test were calculated using the following analysis:

### Learning outcomes

### Test Validity Trial Results

The validity test was conducted by counting all 41 respondents. The validity test used was a descriptive essay using the Product Moment Correlation formula. The essay test consisted of 6 questions tested on 41 students (n) with an r_table of 0.308. An item is considered valid if the calculated r_table is greater than the r_table at a significance level of 0.05%. Based on the results of the trial using SPSS 25 for Windows, which can be seen in Appendix 11, page 126 (Ani, Winata, & Friantini, 2019).

**Research Data Analysis**

The data analysis used was inferential analysis and descriptive data analysis. Inferential analysis was used to test the hypothesis formulated in chapter 2. Descriptive analysis was used to determine the learning categories using a scientific approach to student interests and learning outcomes.

**Inferential Analysis**

The analysis was carried out to test hypotheses 1 and 2 in chapter 2 using a simple linear regression test, while the coefficient of determination test ($r^2$) was used to test the formulation. problem numbers 3 and 4. Before conducting a hypothesis test, a test is first carried out following:

**Normality Test**

**Table 1. Results of Data Normality Test**

**One-Sample Kolmogorov-Smirnov Test**

| | | Unstandardized Residual |
|---|---|---|
| N | | 64 |
| Normal Parameters[a,b] | Mean | .0000000 |
| | Std. Deviation | 7.92324511 |
| Most Extreme Differences | Absolute | .098 |
| | Positive | .086 |
| | Negative | -.098 |
| Test Statistic | | .098 |
| Asymp. Sig. (2-tailed) | | .200[c,d] |

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Based on the table of results of the normality test calculation, *the Kolmogorov-Smirnov* significance value obtained for *the Post-test* is 0,200 > 0,005and it can be concluded that the *Post-test data* is normally distributed (Kusuma & Hamidah, 2019).

Learning outcomes

*The Kolmogorov-Smirnov* test was used to examine the normality of the data to determine whether the test instrument data were normally distributed. The results of the normality test, calculated using *SPSS 25.0 for Windows* using the *Kolmogorov-Smirnov test* , are shown in Table 4.14 below:

**Table 2. Results of Data Normality Test**

**One-Sample Kolmogorov-Smirnov Test**

| | | Unstandardized Residual |
|---|---|---|
| N | | 64 |
| Normal Parameters[a,b] | Mean | .0000000 |
| | Std. Deviation | 9.21321935 |
| Most Extreme Differences | Absolute | .087 |
| | Positive | .087 |
| | Negative | -.062 |
| Test Statistic | | .087 |
| Asymp. Sig. (2-tailed) | | .200[c,d] |

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Based on table 4.14, the results of the normality test calculation show that *the Kolmogorov-Smirnov* significance value for *the Post-test* is 0.00 0,200 > 0,005and it can be concluded that the *Post-test data* is normally distributed.

**Simple Linear Regression Equation**

Interest in Learning

Simple regression aims to determine whether learning with a scientific approach has an influence on students' learning interest with the equation $\hat{Y} = a + bX$. The regression equation of learning with a scientific approach on students' learning interest in appendix 20 page 139 obtained a value $a$of 8,985and $b$of 0,906, so that the regression equation on the influence $X$on $Y_1$ : $\hat{Y} = 8{,}985 + 0{,}906X$. The value $a$of 8,985is a constant which means that if there is no learning with a scientific approach ($X = 0$), students' learning interest is still at the number 8,985 (Fatimah, Asmara, Mauliya, & Puspaningtyas, 2021). The coefficient $b$is the regression direction coefficient and states the average change in the variable $Y$, for each change in the variable $X$by one unit in learning with a scientific approach will have an impact on increasing students' learning interest by 0,906one unit. Thus, the regression equation shows that there is a positive influence of learning with a scientific approach on students' learning interest.

Learning outcomes

Simple regression aims to determine whether learning with a scientific approach has an influence on student learning outcomes with the equation $\hat{Y} = a + bX$. The regression equation of learning with a scientific approach on student learning outcomes in appendix

21 page 140 obtained a value $a$of 19,605and $b$of 0,893, so that a regression equation was obtained on the influence $X$on $Y_1$ : $\hat{Y} = 19{,}605 + 0{,}893X$. The value $a$of 19,605is a constant which means that if there is no learning with a scientific approach ($X = 0$), student learning outcomes are still at the number 19,605 . The coefficient $b$ is the regression direction coefficient and states the average change in the variable $Y$, for each change in the variable $X$by one unit in learning with a scientific approach will have an impact on increasing student learning outcomes by 0,893one unit. Thus, the regression equation shows that there is a positive influence of learning with a scientific approach on student learning outcomes (Fimansyah, 2015).

**Regression Linearity Test**

Interest in Learning

The linearity test was used to determine the relationship between learning and the scientific approach to learning interest. The linearity test was calculated using *SPSS 25 for Windows,* as shown in Appendix 19, page 138, by examining *the Deviation From Linearity* . The results of the linearity test can be seen in Table 4.15 below:

**Table 3. Results of the Linearity Test of Learning Interest**

**ANOVA Table**

| | | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|---|
| Minat Belajar * X | Between Groups | (Combined) | 2369.776 | 36 | 65.827 | .899 | .622 |
| | | Linearity | 31.478 | 1 | 31.478 | .430 | .518 |
| | | Deviation from Linearity | 2338.298 | 35 | 66.809 | .912 | .605 |
| | Within Groups | | 1976.833 | 27 | 73.216 | | |
| | Total | | 4346.609 | 63 | | | |

Based on the calculation results, it can be obtained $F_{hitung}$ that 0,912compared to $F_{tabel}$appendix 19 page 138, it is 4.00 if $F_{hitung} < F_{tabel}$or $0{,}912 < 4{,}00$then $H_0$it is rejected and $H_a$accepted and if $F_{hitung} < F_{tabel}$, then $H_0$it is accepted and $H_a$rejected. Thus, it can be concluded that $H_a$it is accepted with the testing criteria $F_{hitung} < F_{tabel}$or $0{,}912 < 4{,}00$that there is a linear relationship between learning with a scientific approach to student learning interest (Sihombing, Silalahi, Sitinjak, & Tambunan, 2021).

Learning outcomes

The linearity test was used to determine the relationship between learning and the scientific approach to learning outcomes. The linearity test was calculated using *SPSS 25 for Windows,* as shown in Appendix 19, page 138, by examining *the Deviation From Linearity* . The results of the linearity test can be seen in Table below:

**Table 4. Results of the Linearity Test of Learning Outcomes**

**ANOVA Table**

| | | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|---|
| Hasil Belajar * X | Between Groups | (Combined) | 2778.401 | 36 | 77.178 | .773 | .768 |
| | | Linearity | 108.594 | 1 | 108.594 | 1.087 | .306 |
| | | Deviation from Linearity | 2669.807 | 35 | 76.280 | .764 | .776 |
| | Within Groups | | 2697.333 | 27 | 99.901 | | |
| | Total | | 5475.734 | 63 | | | |

Based on the calculation results, it can be obtained $F_{hitung}$ that 0,764 compared to $F_{tabel}$ appendix 19 page 138, it is 4.00 if $F_{hitung} < F_{tabel}$ or $0{,}764 < 4{,}00$ then $H_0$ it is rejected and $H_a$ accepted and if $F_{hitung} < F_{tabel}$, then $H_0$ it is accepted and $H_a$ rejected. Thus, it can be concluded that $H_a$ it is accepted with the testing criteria $F_{hitung} < F_{tabel}$ or $0{,}764 < 4{,}00$ that there is a linear relationship between learning with a scientific approach to student learning interest (Rani Shyntia Paulina Sitorus, 2021).

**Discussion of Research Results**

Based on the results of the inferential analysis on the first hypothesis, this study shows that learning with a scientific approach has an effect on students' learning interest. And the magnitude of the influence of learning with a scientific approach on students' learning interest is 85.8%. The results of this study are in accordance with Wibowo (2017) who stated that there is an influence of realistic and scientific mathematics learning approaches on learning achievement, mathematical reasoning abilities and learning interest. The results of the inferential analysis on the second hypothesis, this study shows that learning with a scientific approach has an effect on students' learning outcomes. And the magnitude of the influence of learning with a scientific approach on students' learning outcomes is 94.8%. In addition, the results of this study show that learning with a scientific approach has an effect on students' learning outcomes. Research by Sari et al. (2023) also states that the influence of the problem-based learning model through a scientific approach on flat shape material can improve learning outcomes (GUSTINA, 2020).

Furthermore, based on the results of data analysis, the second hypothesis shows that learning with a scientific approach to

Based on the descriptive analysis, it was concluded that the effectiveness of learning with a scientific approach on students' interest and learning outcomes in quadratic functions in grade X of SMK Negeri 5 Medan is categorized as moderate. This research aligns with Yulminia's (Heriyati & Munasiah, 2022) research, which states that the application of a scientific learning model is effective in increasing motivation and achievement in mathematics learning. Similarly, the results of research by Bahri, Hajar, and Mulyadi

(Wadud & Lailiyah, 2024) confirmed the effectiveness of a scientific approach in increasing junior high school students' activeness in mathematics learning. Furthermore, research by Rismawati et al. (Samosir, Nursahara, & Pohan, 2020) also showed that a scientific approach facilitates student learning outcomes in mathematics learning.

## CONCLUSION

Based on the results of research that has been carried out in class X of SMK Negeri 5 Medan on the quadratic function material for the 2024/2025 academic year, the following conclusions are drawn;

1. Learning with a scientific approach influences students' interest in learning.
2. The influence of learning with a scientific approach on students' learning interest is 73.7%.
3. Learning with a scientific approach has an impact on student learning outcomes
4. The influence of learning with a scientific approach on student learning outcomes is 88.9%.
5. Learning with a scientific approach is effective in increasing students' learning interests.
6. Learning with a scientific approach is effective for student learning outcomes.

### Suggestion

Based on the conclusions, the researcher provides the following suggestions:

1. To maximize the positive impact of the scientific approach on higher-order thinking skills, teachers should actively integrate activities that stimulate critical and analytical thinking into learning sessions. For example, using case studies, research projects, and group discussions can deepen conceptual understanding and encourage students to apply knowledge creatively.
2. Given the 85.8% impact of the scientific approach, which demonstrates room for improvement in teaching methods in schools, it is recommended that schools consider integrating a scientific approach into the learning process. This approach is expected to reduce reliance on conventional methods, which often do not encourage students' higher-order thinking skills.
3. To improve the effectiveness of learning using a scientific approach, teachers should incorporate a variety of evaluation techniques that reflect students' higher-order thinking skills. The use of authentic assessments, such as portfolios and project presentations, can provide a clearer picture of student achievement and areas for improvement.
4. To maintain and even improve the already high effectiveness, it is recommended that schools and curriculum managers consider implementing the scientific approach more broadly in other subjects. Furthermore, teachers can be provided with additional training to improve their skills in applying this method more effectively across various learning contexts.

## BIBLIOGRAPHY

Agustin, N. (2019). Pengaruh Pendekatan Saintifik Terhadap Keterampilan Berpikir Kritis Siswa Subtema Keberagaman Makhluk Hidup Di Lingkunganku Kelas Iv Sekolah Dasar. *Child Education Journal*, *1*(1), 36–43. Https://Doi.Org/10.33086/Cej.V1i1.912

Ani, L., Winata, R., & Friantini, R. N. (2019). Perbedaan Pemahaman Konsep Matematika Menggunakan Metode Tai Dan Pair Checks Ditinjau Dari Minat Belajar. *Jurnal Karya Pendidikan Matematika*, *6*(1), 15. Https://Doi.Org/10.26714/Jkpm.6.1.2019.15-21

Asma, A., Sesmiarni, Z., Iswantir, I., & Aprison, W. (2022). Desain Media Pembelajaran Interaktif Mata Pelajaran Matematika Berbasis Animasi Di Smk N1 Panyabungan Menggunakan Adobe Flash Cs3 Professional. *Intellect : Indonesian Journal Of Learning And Technological Innovation*, *1*(2), 268–282. Https://Doi.Org/10.57255/Intellect.V1i2.220

Bagaskara, F. (2025). Pengembangan Modul Pembelajaran Berbasis Pendekatan Saintifik Menggunakan Aplikasi Heyzine Flipbook Pada Materi Energi Dan Perubahannya. *Jurnal Pendidikan Impola*, *2*(1), 8–15. Https://Doi.Org/Https://Doi.Org/10.70047/Jpi.V2i1.150

Dipayana, I. K. M., Gading, I. K., & Japa, I. G. N. (2019). Pengaruh Pendekatan Pembelajaran Matematika Realistik Indonesia Terhadap Hasil Belajar Matematika Ditinjau Dari Minat Komputasi. *Mimbar Pgsd Undiksha*, *7*(3). Https://Doi.Org/Https://Doi.Org/10.23887/Jjpgsd.V7i3.19466

Fatimah, C., Asmara, P. M., Mauliya, I., & Puspaningtyas, N. D. (2021). Peningkatan Minat Belajar Siswa Melalui Pendekatan Matematika Realistik Pada Pembelajaran Berbasis Daring. *Mathema: Jurnal Pendidikan Matematika*, *3*(2), 117–126. Https://Doi.Org/Https://Doi.Org/10.33365/Jm.V3i2.1310

Fimansyah, D. (2015). Pengaruh Strategi Pembelajaran Dan Minat Belajar Terhadap Hasil Belajar Matematika. *Judika (Jurnal Pendidikan Unsika)*, *3*(1). Https://Doi.Org/Https://Doi.Org/10.35706/Judika.V3i1.199

Fitriani, I., & Rohayati, S. (2022). Pengembangan E-Book Berbasis Android Dengan Pendekatan Saintifik Pada Mata Pelajaran Administrasi Pajak Kelas Xii Akuntansi Di Smk Negeri 2 Buduran. *Jurnal Pendidikan Akuntansi (Jpak)*, *7*(1). Opgehaal Van Http://Digilib.Unimed.Ac.Id/Id/Eprint/42213

Gustina, H. (2020). *Pengaruh Minat Belajar Siswa Terhadap Hasil Belajar Siswa Kelas V Pada Mata Pelajaran Matematika Di Sdn 68 Kota Bengkulu*. Iain Bengkulu. Opgehaal Van Http://Repository.Iainbengkulu.Ac.Id/Id/Eprint/5511

Hanifah, H. (2016). Penerapan Pembelajaran Model Eliciting Activities (Mea) Dengan Pendekatan Saintifik Untuk Meningkatkan Kemampuan Representasi Matematis Siswa. *Kreano, Jurnal Matematika Kreatif-Inovatif*, *6*(2), 191–198. Https://Doi.Org/Https://Doi.Org/10.15294/Kreano.V6i2.4694

Hapsari, E. E., Sumantri, M. S., & Astra, I. M. (2019). Strategi Guru Meningkatkan Hasil Belajar Menggunakan Pendekatan Saintifik Di Sekolah Dasar. *Jurnal Basicedu*, *3*(3), 850–

860. Https://Doi.Org/Https://Doi.Org/10.31004/Basicedu.V4i1.171

Haryani, M., Nurkhoiroh, N., Suardika, I. K., Haryanto, A. I., & Pulungan, K. A. (2022). Peningkatan Hasil Belajar Pjok Materi Pergaulan Sehat Menggunakan Metode Pembelajaran Pendekatan Saintifik. *Riyadhoh: Jurnal Pendidikan Olahraga*, *5*(2), 71–77. Https://Doi.Org/10.31602/Rjpo.V5i2.8798

Heriyati, H., & Munasiah, M. (2022). Upaya Meningkatkan Kemampuan Berhitung Dan Minat Matematika Siswa Dengan Metode Hitung Trachternberg. *Sap (Susunan Artikel Pendidikan)*, *6*(3). Https://Doi.Org/10.30998/Sap.V6i3.10603

Ikhlas, A. (2020). Pengaruh Penerapan Pendekatan Saintifik Terhadap Hasil Belajar Matematika Siswa Kelas Viii Smp Pada Materi Teorema Phygoras. *Jurnal Inovasi Penelitian*, *1*(7), 1395–1406. Https://Doi.Org/Https://Doi.Org/10.47492/Jip.V1i7.259

Kusuma, J. W., & Hamidah, H. (2019). Pengaruh Model Pembelajaran Arias Dan Cooperative Script Terhadap Minat Dan Hasil Belajar Matematika. *Anargya: Jurnal Ilmiah Pendidikan Matematika*, *2*(1), 62–67. Https://Doi.Org/10.24176/Anargya.V2i1.3460

Novitasari, D., Indrawati, I., & Risfianty, D. K. (2018). Pengembangan Perangkat Pembelajaran Matematika Dengan Pendekatan Saintifik Berbasis Geogebra Untuk Sma Di Mataram. *Jurnal Math Educator Nusantara: Wahana Publikasi Karya Tulis Ilmiah Di Bidang Pendidikan Matematika*, *4*(2), 186. Https://Doi.Org/10.29407/Jmen.V4i2.12526

Partayasa, W., Suharta, I. G. P., & Suparta, I. N. (2020). Pengaruh Model Creative Problem Solving (Cps) Berbantuan Video Pembelajaran Terhadap Kemampuan Pemecahan Masalah Ditinjau Dari Minat. *Jnpm (Jurnal Nasional Pendidikan Matematika)*, *4*(1), 168. Https://Doi.Org/10.33603/Jnpm.V4i1.2644

Putriadi, D. N. (2020). Pengembangan Asesmen Kinerja Pada Praktikum Ipa Berbasis Pendekatan Saintifik Dalam Meningkatkan Kemampuan Berpikir Kritis Siswa Kelas Vii Smp. *Wahana Matematika Dan Sains: Jurnal Matematika, Sains, Dan Pembelajarannya*, *14*(2), 125–143. Https://Doi.Org/Https://Doi.Org/10.23887/Wms.V14i2.16120

Raini, G. K. (2021). Pendekatan Saintifik Dengan Model Pembelajaran Berbasis Proyek (Pjbl) Untuk Meningkatkan Hasil Belajar Matematika Siswa Kelas V Sd. *Journal Of Education Action Research*, *6*(1), 58. Https://Doi.Org/10.23887/Jear.V6i1.42944

Rani Shyntia Paulina Sitorus, R. S. P. S. (2021). *Pengaruh Minat Belajar Siswa Terhadap Hasil Belajar Matematika Siswa Selama Proses Pembelajaran Online Kelas Xi Ips Di Sma Negeri 8 Kota Jambi*. Universitas Batanghari.

Safitri, A., & Sukma, E. (2020). Peningkatan Hasil Belajar Siswa Pada Tema 3 Menggunakan Pendekatan Saintifik Di Sekolah Dasar. *Jurnal Pendidikan Tambusai*, *4*(3), 3132–3144. Https://Doi.Org/Https://Doi.Org/10.31004/Jptam.V4i3.820

Samosir, B. S., Nursahara, N., & Pohan, A. F. (2020). Upaya Meningkatkan Minat Belajar Matematika Menggunakan Model Pembelajaran (Pakem) Di Sma Negeri 2 Siabu. *Jurnal*

*Karya Pendidikan Matematika*, *7*(1), 14–21. Https://Doi.Org/Https://Doi.Org/10.26714/Jkpm.7.1.2020.14-21

Siahaan, F. E., & Pane, E. P. (2021). Penerapan Pendekatan Saintifik Berbasis Model Pembelajaran Guided Inquiry Untuk Meningkatkan Soft Skills Mahasiswa Pendidikan Fisika. *Jurnal Basicedu*, *5*(6), 5877–5884. Https://Doi.Org/Https://Doi.Org/10.31004/Basicedu.V5i6.1521

Sihombing, S., Silalahi, H. R., Sitinjak, J. R., & Tambunan, H. (2021). Analisis Minat Dan Motivasi Belajar, Pemahaman Konsep Dan Kreativitas Siswa Terhadap Hasil Belajar Selama Pembelajaran Dalam Jaringan. *Jurnal Pendidikan Matematika (Judika Education)*, *4*(1), 41–55. Https://Doi.Org/10.31539/Judika.V4i1.2061

Siti Sundari, F., Handayani, R., & Mulyawati, Y. (2019). Implementasi Pendekatan Saintifik Berbasis Lesson Study Terhadap Pengembangan Berpikir Kritis Mahasiswa Calon Guru Sekolah Dasar. *Journal Of Science Education And Practice*, *1*(1), 32–40.

Supriyanto, D. (2019). Pengaruh Pendekatan Saintifik Pada Pembelajaran Seni Budaya Dan Prakarya Terhadap Capaian Akademis Siswa Kelas Iv Di Mi Salafiyah Syafi'iyah Ii Klinterejo Sooko Mojokerto. *Nazhruna: Jurnal Pendidikan Islam*, *2*(2), 266–278. Https://Doi.Org/10.31538/Nzh.V2i2.346

Tangkas, W. E. A., Japa, I. G. N., Japa, I. G. N., Rati, N. W., & Rati, N. W. (2020). Pengaruh Pendekatan Saintifik Menggunakan Media Konkret Terhadap Hasil Belajar Belajar Ipa Siswa Kelas V. *Jurnal Adat Dan Budaya Indonesia*, *1*(2), 63–71. Https://Doi.Org/10.23887/Jabi.V1i2.28910

Wadud, A. J., & Lailiyah, S. (2024). Pengaruh Media Ular Tangga Berbasis Genially Terhadap Minat Dan Hasil Belajar Matematika. *Kognitif: Jurnal Riset Hots Pendidikan Matematika*, *4*(1), 500–512. Https://Doi.Org/10.51574/Kognitif.V4i1.1579

Waluyati, I., & Irfan, I. (2022). Penerapan Metode Pembelajaran Ips Berbasis Pendekatan Saintifik Dalam Mengintegrasikan Karakter Bangsa Di Smpn Kecamatan Sape. *Edu Sociata ( Jurnal Pendidikan Sosiologi )*, *3*(1), 1–8. Https://Doi.Org/10.33627/Es.V3i1.294

Yanti, R., Laswadi, L., Ningsih, F., Putra, A., & Ulandari, N. (2019). Penerapan Pendekatan Saintifik Berbantuan Geogebra Dalam Upaya Meningkatkan Pemahaman Konsep Matematis Siswa. *Aksioma : Jurnal Matematika Dan Pendidikan Matematika*, *10*(2), 180–194. Https://Doi.Org/10.26877/Aks.V10i2.4399

Yudha, C. B. (2019). Pengaruh Pendekatan Saintifik Terhadap Kemampuan Berpikir Kritis Mahasiswa. *Buana Matematika: Jurnal Ilmiah Matematika Dan Pendidikan Matematika*, *9*(1), 31–36.