THE EFFECT OF DISCOVERY LEARNING MODEL AND KINESTHETIC LEARNING STYLE ON THE LEARNING OUTCOMES OF GRADE IV STUDENTS OF GMIM WIAU LAPI ELEMENTARY SCHOOL

Debora Tampi [1]
Email:tampidebora@gmail.com
Universitas Negeri Manado
Harol Reflie Lumapow[2]
Email:Haroldlumapow@unima.ac.id
Universitas Negeri Manado
Jeanne M. Mangangantung[3]
Email:mangangantungj@gmail.com
Universitas Negeri Manado

ABSTRACT

This research aims to analyze the influence of the Discovery Learning Model and Kinesthetic Learning Style on IPAS (natural and social sciences)learning outcomes of grade IV students at GMIM Wiau Lapi Elementary School. This type of research is experimental research using a non-random pretest posttest control group design (nonequivalent group pretest-posttest design). This design compares two groups, namely the experimental class and the control class. The subjects of this research were grade IVstudents at GMIM Wiau Lapi Elementary School. The samples in this research were 15 class IVA students as the experimental class and 15 class IVB students as the control class. Kinesthetic Learning Style data is collected using a questionnaire, while learning outcomes data is collected using objective tests. The data obtained were analyzed using Hypothesis I and Hypothesis II using the t test and Hypothesis III using the F test. The results of this research show that first, there is a significant difference in influence between the learning outcomes of students who use the Discovery Learning Model and the Conventional Learning Model. So there is an influence of the Discovery Learning Model on learning outcomes. Second, there is a significant difference between Kinesthetic Learning Styles on learning outcomes. Third, learning using the Discovery Learning Model and Kinesthetic Learning Style has more influence on student learning outcomes.

Keywords: Discovery Learning, Kinesthetic Learning Style, Learning Outcomes

INTRODUCTION

The curriculum is an important part of the educational process, and education cannot be carried out without a curriculum that functions as an outline in learning to achieve national education goals (Indarta et al., 2022). Education is a basic need for every human being who wants a change in life for the better (Mangangantung et al., 2023).

In the 21st century, a teacher in carrying out the teaching and learning process is expected to be able to innovate learning, have teaching skills that are able to balance with current conditions, be able to design learning that is interesting, fun and meaningful and others. The 21st century learning is different from the previous century which is still conventional, traditional and classical. The learning process in the 21st century emphasizes meaningful and student-centered learning, (Alimuddin, 2023).Students use technology to learn actively and independently. The 21st century era is characterized by rapid transformation in various aspects of life, especially in education. As curriculum implementers, teachers have the responsibility to realize this noble goal during the learning process. To facilitate the recovery of learning in a better direction, the new curriculum

requires optimal training through self-alignment with the 21st century learning concept in the Merdeka Curriculum (Zakso, 2022).

In combining the dynamic spirit of the 21st century with the principles of the Merdeka Curriculum, Indonesia seeks to create an education system that is more responsive to change, supports students' comprehensive development, and prepares them to be competent individuals in an ever-evolving era. The development of 21st century skills can be applied in learning activities at school. By conducting learning activities that see from active students in learning activities such as using the Discovery Learning Model. According to Fajri (2019)Discovery Learning is a process in learning in which a concept is not presented in a finished (final) form, where students are required to organize their own learning methods in finding concepts. This Discovery Learning Model focuses on the mental and physical abilities of students who will strengthen their enthusiasm and concentration in carrying out learning activities (Rosarina et al., 2016). Furthermore, according to Hosnan (2014) revealed that Discovery Learning is a model to develop an active way of learning by finding yourself, investigating yourself, then the results obtained will be loyal and long-lasting in memory.

Teachers are required to use various types of learning models that are in accordance with the characteristics of the material to be taught. Learning must be directed towards student centered, where it is no longer the center of information in learning. Students must be more active in discovering their own knowledge and of course remain under the guidance of the teacher. The Discovery Learning model provides opportunities for students to develop according to their abilities and appreciate various aspects of life in the surrounding environment. This is what makes this model able to improve student learning outcomes at school.

Learning is not only about transferring experiences to students but also training students to think or play an active role in learning. This is referred to as learning style or learning modality. According to DePorter & Hernacki (2007), people with a Kinesthetic Learning Style are closer to characteristics such as thinking better when moving or walking, moving their limbs more when talking and finding it difficult to sit still. Just by holding it, students who have this learning style are able to absorb information without having to read (Syati, 2022). Furthermore, learning style is the way a person feels easy, comfortable, and safe when learning, both in terms of time and senses. The most popular and recognized learning modality until now is the VAK learning modality or style, namely the Visual, Auditory, and Kinesthetic learning style(Fleming, 2001)

Researchers took one of the learning styles, namely Kinesthetic Learning Style. Kinesthetic Learning Style is a way of learning that a person does to obtain information by doing experience, movement, and touch. In addition, Kinesthetic Learning is related to practice or direct learning experiences. The characteristics of someone who uses Kinesthetic Learning include: When expressing an opinion is usually accompanied by hand movements or body language involving other limbs such as the face, eyes, and so on, when feeling bored will go or move places, like learning material that is practicing, like to touch everything he encounters, like to use real objects as learning aids, speak slowly, learn through practice, use a lot of body signals, possibly poor writing, like sports games (Anas & Munir, 2016).

Students' ability to understand and absorb information certainly varies in level (Sugiarto et al., 2020). There are fast, medium, and slow, which is why students often have to take different ways to understand each information(Rahman & Yanti, 2016). When students already understand their own learning style, then they can process the subject matter or information well and enter into long-term memory.

Each student is a different individual, they have their own uniqueness and characteristics that are not the same as one another. Therefore, in the learning process, teachers should pay attention to the individual differences of these students, the learning process carried out verbally causes many failures experienced by students in learning, so that it affects students' personalities

and we can feel, namely a sense of reluctance to learn, hatred of lessons, feeling forced at school, a sense of inferiority in class and various other negative influences.Learning style is one of the important factors in improving learning achievement and the quality of education. The learning style of each student is certainly different depending on the characteristics of the student (Makalalag et al., 2023). One of the benchmarks to determine the success rate of a learning process is by looking at the learning outcomes obtained by students. According to Hutauruk & Simbolon (2018) concluded that "Learning outcomes are the achievement of a form of behavior change that tends to remain from the cognitive, affective, and psychomotor domains of the learning process carried out within a certain time". The teaching and learning process in the classroom will be more innovative if the teacher is more creative in the learning process (Sulastri et al., 2023).

Based on the results of observations made by researchers at GMIM Wiau Lapi Elementary School, researchers found several problems related to learning in IPAS(natural and social sciences) subjects. This can be seen from the lack of student motivation to learn, which has an impact on low learning outcomes. Based on preliminary observations, the cause of the learning outcomes of some students is still below the KKTP (Criteria for Achieving Learning Objectives) value, it is suspected that the causal factor is because the teacher in the teaching and learning process still uses conventional learning methods and learning styles that are lacking so that the subject matter is not delivered chronologically which results in monotonous learning and students cannot explore or explore their own knowledge based on instructions from the teacher. It is important for a teacher to know the character or learning style preferred by students, so that the teacher will be more effective in choosing a learning strategy or method that will be used to convey material, so that the material will be conveyed well to students who have different learning styles and students will be able to obtain more optimal learning outcomes. The use of the Discovery Learning Model is very necessary for elementary school students because it makes learning more effective and varied.

In this study, the researcher discusses "the effect of the discovery learning model and kinesthetic learning style on students' IPAS(natural and social sciences) learning outcomes" in contrast to Rosmawati (2019)research discussing "the Effect of the Application of the Discovery Learning Model and Problem Based Learning on the Science Learning Outcomes of Grade V Students of SD Inpres Bontomanai Makassar City ". Furthermore,Primantiko et al. (2021) discusses "the Effect of the Discovery Learning Model on Student Motivation and Learning Outcomes in Elementary Schools".

This research is useful as an input to add insight in carrying out the learning process at school, especially skilled in applying the Discovery Learning Model, to improve student learning outcomes through the Discovery Learning Model, school quality will be better if teachers are proficient in applying the Discovery Learning Model, as a good learning experience in enriching knowledge about various learning models that are in accordance with IPAS(natural and social sciences) Material in SD.

This study aims to determine the effect of using the Discovery Learning Model on student IPAS(natural and social sciences) learning outcomes, to determine the effect of using Kinesthetic Learning Styles on student IPAS(natural and social sciences) learning outcomes, to determine the difference in the use of Discovery Learning Models and Kinesthetic Learning Styles on student learning outcomes in IPAS(natural and social sciences) learning.

METHOD

This study uses a quantitative method of experimental type. Experimental research can be interpreted as a research method used to seek the effect of certain treatments on others under controlled conditionsSugiyono (2019). The research design used in this study is a nonequivalent group pretest-posttest design. This design compares two groups, namely the experimental class and the control class.

The variable X_1 (Discovery Learning Model) and Variable X_2(Kinesthetic Learning Style) on variable Y (science learning outcomes). This research was conducted at GMIM Wiau Lapi Elementary School, Tareran District, South Minahasa Regency. The research subjects were all grade IV students of GMIM Wiau Lapi Elementary School consisting of two classes, namely class A with 15 students and B with 15 students. Where class IV A became the experimental class and class IV B became the control class.

The instruments used in this study include: written tests of learning outcomes and questionnaires. Instrument Trials include: (1) Instrument validity is something that becomes a measure in showing the levels of validity of an instrument. (2) Instrument Reliability where the instrument in addition to calculating its validity is also calculated reliability. The Analysis Prerequisite Test used in this study is Normality Test, Homogeneity Test, Hypothesis Test.

RESULT AND DISCUSSION

The results of the Analysis Prerequisite Test have been carried out using the results of the normality test, homogeneity test, hypothesis testing. The results of the data normality test were carried out using the SPSS application with the *Kolmogorov-Smirnov* method. The results of normality testing using SPSS on the X_1Y data group showed a significant number of 0.817>0.05. This indicates that the data is normally distributed. While in the X_2Y data group the normality test results showed a significant number of 0.674> 0.05. Thus, the data is normally distributed.

After the data is declared normally distributed, the testing of requirements continues with homogeneity testing. Based on the test results, the significance value for the X_1Y data group is 0.083 > 0.05, and for the X_2Y data group is 0.166 > 0.05. This shows that both data groups are homogeneous. After the prerequisite tests (normality test and homogeneity test) are met, the next step is hypothesis testing. Hypothesis I in this study is the Effect of Discovery Learning Model on IPAS(natural and social sciences) Learning Outcomes.

H_0 :There is no effect of the application of the Discovery Learning Model on IPAS(natural and social sciences) learning outcomes in Grade IVGMIM Wiau Lapi Elementary School

H_a :There is an effect of the application of the Discovery Learning Model on IPAS (natural and social sciences) learning outcomes in Grade IVGMIM Wiau Lapi Elementary School

Data analysis used t test to test hypothesis I about the effect of discovery learning model variables on students' IPAS(natural and social sciences) learning outcomes. The results of the t test analysis are as follows.

Table 1 Data analysis of hypothesis I

Coefficientsa						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	192.415	15.196		12.662	.000
	X2ModelDiscoveryLearning	-1.228	.162	-.903	-7.589	.000
a. Dependent Variable: Hasil Belajar						

Based on table 1, the regression equation is obtained as follows:$\hat{Y}$ = a + bX= 192.415 + 1.228X
The results of testing hypothesis I in table 1 obtained a significant value of 0.000 <0.05, this means that H_0 is rejected or the Discovery Learning Model variable (X_1) has an effect on the student IPAS(natural and social sciences) learning outcomes variable (Y), so it can be concluded that there

is an effect of the Discovery Learning Model on IPAS(natural and social sciences) learning outcomes in grade IVstudents of GMIM Wiau Lapi Elementary School.

Hypothesis II in this study is the Effect of Kinesthetic Learning Style on IPAS(natural and social sciences) Learning Outcomes

H_0 :There is no effect of the application of Kinesthetic Learning Style on IPAS(natural and social sciences) learning outcomes in Grade IV GMIM Wiau Lapi Elementary School

H_a :There is an effect of the application of Kinesthetic Learning Style on IPAS(natural and social sciences) learning outcomes in Grade IV GMIM Wiau Lapi Elementary School

Data analysis using the t test to test hypothesis II about the effect of student interestvariables on student science learning outcomes. The results of the t test analysis are as follows.

Table 2 Data analysis of hypothesis II

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	132.524	23.627		5.609	.000
	X2GayaBelajarKinestetik	-.710	.304	-.544	-2.337	.036

a. Dependent Variable: Hasil Belajar

Based on table 2, the regression equation is obtained as follows:$Y = a + bX = 132.524 + 0.710X$

The results of hypothesis II testing in table 2 obtained a significant value of 0.036 <0.05, so it can be concluded that the Kinesthetic Learning Style variable (X_2) has an effect on the student IPAS(natural and social sciences) learning outcomes variable (Y). Then H_0 is rejected, so it can be concluded that the Kinesthetic Learning Style variable has an effect on the student IPAS(natural and social sciences) learning outcomes variable. Thus, accept Ha which states that there is an effect of kinesthetic learning style on IPAS(natural and social sciences) learning outcomes in grade IVstudents of GMIM Wiau Lapi Elementary School.

The data is in line with research,Hutahaean et al. (2023) which shows significant differences in the influence of student learning styles on the cognitive learning outcomes of Class V SD Negeri 098166 Perumnas Batu Vi Simalungun Regency.

Hypothesis III in this study is the Difference in the Effect of Discovery Learning Model and Kinesthetic Learning Style compared to conventional on IPAS(natural and social sciences) Learning Outcomes.

H_0 :There is no effect of the application of Discovery Learning Model and Kinesthetic Learning Style towards IPAS(natural and social sciences) learning outcomes in Grade IV GMIM Wiau Lapi Elementary School

H_a :There is aneffect of the application of Discovery Learning Model and Kinesthetic Learning Style towards IPAS(natural and social sciences) learning outcomes in Grade IV GMIM Wiau Lapi Elementary School

Data analysis using the F test to test hypothesis III about the effect of the application of Discovery Learning Model variables and Kinesthetic Learning Style on students IPAS(natural and social sciences) learning outcomes. The results of the F test analysis are as follows.

Table 3. Data analysis of hypothesis III

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2801.732	1	2801.732	34.745	.000^b
	Residual	1048.268	13	80.636		
	Total	3850.000	14			

a. Dependent Variable: Hasil Belajar

b. Predictors: (Constant), X1danX2

The results of testing hypothesis III in table 3 using SPSS with a significance level of F_{table} value with the formula F (k – 1 ; n - k) F = (3 – 1 ; 30 - 1) F = (1 ; 29) = 4.18. So obtained F_{table} = 4.18. It is known that the F_{count} value is 34.745> 4.18 F_{table} with a significance level of 0.000 <0.05, so from the results of this data analysis it can be concluded that the regression model has a significant effect together between the Discovery Learning Model variables and Kinesthetic Learning Styles on student IPAS(natural and social sciences) learning outcomes. Thus accepting H_a in this study which states that there is an influence between the Discovery Learning Model variables and Kinesthetic Learning Styles on IPAS(natural and social sciences) learning outcomes in grade IVstudents of GMIM Wiau Lapi Elementary School.

Furthermore, table 4 shows the comparison of the standard deviation and mean between the control class and the experimental class on the discovery learning model variable and kinesthetic learning style on IPAS(natural and social sciences) learning outcomes.

Tabel 4

Statistics

		Hasil Belajar Eksperimen	Hasil Belajar Kontrol
N	Valid	15	15
	Missing	0	0
Mean		78.00	74.53
Std. Error of Mean		4.282	1.407
Median		80.00	75.00
Mode		50	78
Std. Deviation		16.583	5.449
Variance		275.000	29.695
Range		50	20
Minimum		50	63
Maximum		100	83
Sum		1170	1118

a. Multiple modes exist. The smallest value is shown

In table 4 it can be seen that, standard deviation is a statistical value that is used to determine how the data is distributed in the sample, as well as how close individual data points are to the mean or average sample value. From processing the data on student learning outcomes in the control class and experimental class, the standard deviation value in the control class is 5.449 with an average value of 74.53. Meanwhile, the experimental class obtained a standard deviation value of 16.583 with an average value of 78.00. The average value of IPAS(natural and social sciences) learning outcomes of experimental class students using the Discovery Learning Model and Kinesthetic Learning Style is higher than the average value of learning outcomes of control classes using conventional learning models. This means that the learning outcomes of the experimental class

applied the the Discovery Learning Model are higher than the learning outcomes in the control class using the conventional learning model.

The findings in Hypothesis I research show that there is an effect of the the Discovery Learning Model on the learning outcomes of IPAS(natural and social sciences) in grade IVstudents of GMIM Wiau Lapi Elementary School. The data is in line with research, (Meliansari et al., 2023) which shows a significant difference in the effect of the Discovery Learning Model to improve learning outcomes in science material for class V students of SDN 090 Pekanbaru. Thus, the Discovery Learning Model has the potential to be an effective method in improving learning outcomes in science materials at the elementary school level.

In Hypothesis II research shows that there is an effect of kKinestheticLearning Style on IPAS(natural and social sciences) learning outcomes in grade IVstudents of GMIM Wiau Lapi Elementary School. The data is in line with research, (Hutahaean et al., 2023) which shows a significant difference in the effect of student learning styles on the cognitive learning outcomes of SD Negeri 098166 Perumnas Batu Vi Simalungun Regency. ThusKinesthetic Learning Styles in students can be an important factor in improving learning achievement and Kinesthetic Learning Styles can also be an effective strategy in improving student learning outcomes in elementary schools.

In Hypothesis III research shows that there is an influence between the Discovery Learning Model and Kinesthetic Learning Style on IPAS(natural and social sciences) learning outcomes in grade IV students of GMIM Wiau Lapi Elementary School. The data is in line with research, (Herawati et al., 2022) which shows significant differences in the effect of learning models on learning outcomes, there is an effect of learning styles on learning outcomes and there is an interaction effect of learning models and learning styles on the learning outcomes of students in class XI MIPA SMAN 1 Kalukku study on the subject matter of colloidal systems. Thusthe Discovery Learning Model and Kinesthetic Learning Style can have a positive impact on the achievement of student learning outcomes in IPAS(natural and social sciences) subjects and the learning process can be more effective and can improve student IPAS(natural and social sciences) learning outcomes.

CONCLUSION

Based on the result anddiscussion, it can be concluded: first, there is a significant difference in influence between the Learning Outcomes of students who use the Discovery Learning Model and the Conventional Learning Model. So there is an effect of the Discovery Learning Model on learning outcomes. Second, there is a significant difference between Kinesthetic Learning Styles on learning outcomes. Third, learning by using the Discovery Learning Model and Kinesthetic Learning Style has more effect on student learning outcomes.

REFERENCES

Alimuddin, J. (2023). Implementasikurikulummerdeka di sekolahdasar. *JurnalIlmiah KONTEKSTUAL*, *4*(2), 67–75. https://doi.org/https://doi.org/10.46772/kontekstual.v4i02.995

Anas, A., & Munir, N. P. (2016). PENGARUH GAYA BELAJAR VAK TERHADAP HASIL BELAJAR MATEMATIKA SISWA. *Prosiding Seminar Nasional*, *2*(1). https://journal.uncp.ac.id/index.php/proceding/article/view/392

DePorter, B., &Hernacki, M. (2007). *QUANTUM LEARNING (MEMBIASAKAN BELAJAR NYAMAN DAN MENYENANGKAN)* (S. Meutia& A. Abdurrahman, Eds.; Cetakan ke-25). Penerbit Kaifa. https://books.google.co.id/books?id=6_Nx2_6T2cAC&printsec=frontcover&hl=id#v=onepage&q&f=false

Fajri, Z. (2019). Model pembelajaran discovery learning dalammeningkatkanprestasibelajarsiswa SD. *Jurnal Ika Pgsd (Ikatan Alumni Pgsd) Unars*, *7*(2), 64–73. https://doi.org/https://doi.org/10.36841/pgsdunars.v7i2.478

Fleming, N. D. (2001). *Teaching and learning styles: VARK*. USA: http: www. Amazon. com.

Herawati, N., Syarifuddin, U., & Husain, H. (2022). Pengaruh Model Pembelajaran dan Gaya Belajarterhadap Hasil BelajarPeserta Didik. *Chemistry Education Review*, *5*(2), 170–178. https://doi.org/https://doi.org/10.26858/cer.v5i2.13315

Hosnan, M. (2014). *Pendekatansaintifik dan kontekstualdalampembelajaranabad 21: Kuncisuksesimplementasikurikulum 2013*. Ghalia Indonesia. http://kin.perpusnas.go.id/DisplayData.aspx?pId=75464&pRegionCode=UN11MAR&pClientId=112

Hutahaean, Y., Sijabat, O. P., &Sijabat, D. (2023). PENGARUH GAYA BELAJAR SISWA TERHADAP HASIL BELAJAR KOGNITIF IPS SISWA KELAS V SD NEGERI 098166 PERUMNAS BATU VI KABUPATEN SIMALUNGUN. *Pande Nami Jurnal (PNJ)*, *1*(2), 14–21. https://jurnal.migascentral.com/index.php/pnj/article/view/72/82

Hutauruk, P., &Simbolon, R. (2018). Meningkatkan Hasil BelajarSiswaDengan Alat Peraga Pada Mata Pelajaran IPA Kelas IV SDN Nomor 14 SimbolonPurba. *SEJ (School Education Journal)*, *8*(2), 121–129. https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://jurnal.unimed.ac.id/2012/index.php/school/article/download/9770/9295&ved=2ahUKEwj6gOyt8YKGAxVX1TgGHcCADzcQFnoECBEQAQ&usg=AOvVaw1YZu48IvCeakiBLrnhx1fO

Indarta, Y., Jalinus, N., Waskito, Samala, A. D., Riyanda, A. R., & Adi, N. H. (2022). Relevansikurikulummerdekabelajardengan model pembelajaranabad 21 dalamperkembangan era society 5.0. *Edukatif: JurnalIlmu Pendidikan*, *4*(2), 3011–3024. https://doi.org/https://doi.org/10.31004/edukatif.v4i2.2589

Makalalag, F. F., Wullur, M. M., Siwi, K., &Pangkey, R. D. H. (2023). HUBUNGAN ANTARA GAYA BELAJAR DENGAN HASIL BELAJAR IPS SISWA KELAS V SD NEGERI DI KECAMATAN KOTAMOBAGU BARAT. *EDU PRIMARY JOURNAL*, *4*(2), 151–166. http://ejurnal.unima.ac.id/index.php/eduprimary/article/view/8782/4659

Mangangantung, J. M., Penteno, M. I., &Komedien, B. E. J. (2023). Penerapan Model Pembelajaran Discovery Learning UntukMeningkatkan Hasil BelajarSiswa Pada Mata Pelajaran IPA Dikelas IV SD GMIM V Tomohon. *JurnalIlmiah Wahana Pendidikan*, *9*(3), 727–735. https://doi.org/https://doi.org/10.5281/zenodo.7802176

Meliansari, V., Alpusari, M., & Alim, J. A. (2023). Pengaruh model pembelajaran discovery learning untukmeningkatkanberpikirkreatif pada materiipasiswakelas V sdn 090 pekanbaru. *JurnalKiprah Pendidikan*, *2*(1), 74–80. https://doi.org/https://doi.org/10.33578/kpd.v2i1.138

Primantiko, R., Asrul, & Tiro, A. R. (2021). Pengaruh Model Discovery Learning terhadapMotivasi dan Hasil BelajarSiswa di Sekolah Dasar. *Jurnal Papeda: JurnalPublikasi Pendidikan Dasar*, *3*(2), 96–102. https://doi.org/https://doi.org/10.36232/jurnalpendidikandasar.v3i2.1134

Rahman, A. A., & Yanti, S. (2016). Pengaruhgayabelajarterhadaphasilbelajarsiswa pada matapelajaranipsterpadu di kelas VII SMP negeri 1 peudada. *Jurnal Pendidikan Almuslim*, *4*(2). http://jfkip.umuslim.ac.id/index.php/jupa/article/view/183

Rosarina, G., Sudin, A., & Sujana, A. (2016). Penerapan model discovery learning untukmeningkatkanhasilbelajarsiswa pada materiperubahanwujudbenda. *Jurnal Pena Ilmiah*, *1*(1). https://doi.org/https://doi.org/10.17509/jpi.v1i1.3043

Rosmawati. (2019). *PengaruhPenerapan Model Discovery Learning dan Problem Based Learning Terhadap Hasil Belajar IPA Peserta Didik Kelas V SD InpresBontomanai Kota Makassar* [UIN ALAUDDIN MAKASSAR]. http://repositori.uin-alauddin.ac.id/16161/1/Rosmawati.pdf

Sugiarto, E., Hartono, &Subandowo. (2020). PengaruhPenggunaan Model PembelajaranPratikumMelaluiPendekatan Discovery BerbasisInkuiri dan Gaya KognitifTerhadap Hasil BelajarSiswa. *JurnalPijarMipa*, *15*(2), 182–187. https://doi.org/10.29303/jpm.v15i2.1357

Sugiyono. (2019). *Metode Penelitian Pendidikan (Kuantitatif, Kualitatif, Kombinasi, R&D dan Penelitian Pendidikan)* (A. Nuryanto, Ed.; Ed. 3. Cet. 1.). Alfabeta.

Sulastri, Rorimpandey, W., &Sumampow, Z. F. (2023). Pengaruh Peran Orang Tua Dan Minat BelajarTerhadap Hasil BelajarSiswaKelas VI SD Negeri 1 Airmadidi. *JurnalElementariaEdukasia*, *6*(2), 314–327. https://doi.org/https://doi.org/10.31949/jee.v6i2.5377

Syati, L. M. I. A. (2022). *ANALISIS KEMAMPUAN PEMECAHAN MASALAH MATEMATIS DITINJAU DARI GAYA BELAJAR DAN KEMANDIRIAN BELAJAR SISWA SMP* [UNIVERSITAS PENDIDIKAN INDONESIA]. http://repository.upi.edu/id/eprint/71192

Zakso, A. (2022). ImplementasiKurikulum Merdeka Belajar di Indonesia. *Jurnal Pendidikan Sosiologi Dan Humaniora*, *13*(2), 916–922. https://doi.org/http://dx.doi.org/10.26418/j-psh.v13i2.65142