AKSIOMA: Jurnal Program Studi Pendidikan Matematika
Volume 11, No. 3, 2022, 2248-2256

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i3.5440

ANALYSIS OF FACTORS THAT INFLUENCE STUDENTS' MATHEMATICAL CRITICAL THINKING SKILLS: INTRAPERSONAL INTELLIGENCE AND LEARNING MOTIVATION

Aswin[1*], Dadan Dasari[2], Dadang Juandi[3], Surya Kurniawan[4]

[1*,2,3,4]Universitas Pendidikan Indonesia, Jawa Barat, Indonesia
Email: aswin@upi.edu[1)]*
dadan.dasari@upi.edu[2)]
dadang.juandi@upi.edu[3)]
surya.k@upi.edu[4)]

Received 13 June 2022; Received in revised form 12 August 2022; Accepted 29 September 2022

Abstrak

Berpikir kritis matematis adalah kemampuan seseorang yang didalamnya memuat proses berpikir yang bertujuan untuk memperoleh sebuah pemikiran yang rasional untuk melakukan sesuatu atau meyakini apa yang akan dilakukan. Kemampuan berpikir kritis matematis siswa saat ini mengalami penurunan. Terdapat banyak faktor-faktor yang mempengaruhi kemampuan berpikir kritis matematis siswa diantaranya kecerdasan intrapersonal dan motivasi belajar siswa. Penelitian ini bertujuan untuk mengetahui pengaruh kecerdasan intrapersonal dan motivasi belajar terhadap kemampuan berpikir kritis matematis siswa. Penelitian ini adalah penelitian kuantitatif dengan pendekatan *ex-post facto*. Populasi dalam penelitian ini adalah salah satu sekolah SMA kelas XI di kabupaten Sidrap. Jumlah sampel dalam penelitian ini adalah 85 siswa yang dipilih dengan teknik *purposive sampling*. Teknik pengumpulan data dalam penelitian ini menggunakan instrumen yang terdiri dari: (1) angket motivasi belajar, (2) angket kecerdasan intrapersonal, dan (3) angket kemampuan berpikir kritis matematis. Analisis data yang digunakan adalah *Structural Equation Modeling* (SEM) dengan menggunakan program komputer Smart PLS 3.0. Hasil dari penelitian ini adalah terdapat pengaruh antara kecerdasan intrapersonal terhadap kemampuan berpikir kritis matematis siswa sebesar 0,284 (P values = 0,039) dan motivasi belajar berpengaruh terhadap kemampuan berpikir kiritis matematis siswa sebesar 0,579 (P values = 0,00). Dengan adanya penelitian ini diharapkan kepada guru untuk dapat meningkatkan kemampuan berpikir kritis siswa dengan memperhatikan motivasi dan kecerdasan intrapersonal siswa.

Kata kunci: Berpikir Kritis Matematis; Kecerdasan Intrapersonal; Motivasi Belajar.

Abstract

Mathematical critical thinking skills is a person's capacity that includes a thought process that aims to obtain a rational thought to do something or believe what will be done. Many factors influence students' mathematical critical thinking skills, including intrapersonal intelligence and learning motivation. This research points to control the stimulate of intrapersonal intelligence and learning motivation on students' mathematical critical thinking skills. This study is quantitative research through an ex-post-facto approach. The population in this research is a class XI high school in the Sidrap district. The quantity of samples in this research was 85 students who were selected by the purposive sampling technique. The data collection technique in this study used an instrument consisting of (1) an intrapersonal intelligence questionnaire, (2) a learning motivation questionnaire, and (3) a mathematical critical thinking ability questionnaire. Analysis of the data used is Structural Equation Modeling (SEM) using the PLS 3.0 smart computer program. The results of this study are that there is an influence between intrapersonal intelligence on students' mathematical critical thinking skills of 0.284 (P values = 0.039) and learning motivation affects students' mathematical critical thinking skills of 0,579 (P values = 0.00).

***Keywords**: Intrapersonal Intelligence; Learning Motivation; Students' Mathematical Thinking Skills.*

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i3.5440

INTRODUCTION

Mathematical thinking skills is one of the student abilities that really needs to be considered in the modern era. The ability to think is closely related to the behavior that will be caused by students in their daily lives. According to (Schafersman, 1991) "Critical thinking means correct thinking in the pursuit of relevant and reliable knowledge about the world". Meanwhile, according to (Sianturi et al., 2018), critical thinking skills are the investigations needed to explore situations, phenomena, questions, or problems to formulate hypotheses or conclusions, which combine all possible information and can be believed to be true. Then (Saputra & Salim, 2020) critical thinking skills are thoughts skills that include cognitive processes and encourage students to think brilliantly on trouble. So, students' mathematical critical thinking skills is the ability of a person which it contains a thought process that aims to obtain a rational thought to do something or believe what will be done.

Critical thinking skills are very useful in learning, especially in learning mathematics, because in learning mathematics, critical thinking skills are needed. Students' mathematical critical thinking skills are different because many factors affect the level of students' mathematical critical thinking skills. One of the factors that influence students' mathematical critical thinking skills is students' intrapersonal intelligence.

According to (Lazear, 2004:17), intrapersonal intelligence is a person's ability to introspect and reflect on oneself who can step back and look at ourselves. Then (Paradita et al., 2019) explain that intrapersonal intelligence is an ability related to a person's internal state, which is related to the ability of self-reflection, thinking meta-cognition, and being aware of spiritual reality. Based on this definition, it can be concluded that intrapersonal intelligence is the ability of a person to reflect on himself and the ability to understand himself so that he acts according to his understanding. Research on the influence of intrapersonal intelligence on mathematical abilities has been carried out by several researchers, for example that intrapersonal intelligence affects mathematical communication skills (Anawati, 2021; Putri et al., 2022), intrapersonal intelligence does not significantly affect achievement or learning outcomes in mathematics (Mahmud & Amaliyah AR, 2017) and there is an influence of intrapersonal intelligence on mathematical creative thinking ability (Maratusyolihat et al., 2021), but a deeper investigation is still needed regarding its effect on one of the mathematical abilities, namely mathematical critical thinking.

A student's intrapersonal intelligence has a relationship with students' critical thinking skills, students' who have good intrapersonal intelligence will have good critical thinking skills as well. This is in line with what (Rejeki & Isharyanti, 2020) stated there is a significant relationship between intrapersonal intelligence and elementary students' critical thinking skills. The limitations of this research make researchers interested in investigating the influence of intrapersonal intelligence at the high school level. Therefore, it is very important to pay attention to students' intrapersonal intelligence so that students' critical thinking skills can be improved.

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i3.5440

In addition to intrapersonal intelligence, research about learning motivation was done using simple regression and found that there is influence to students' mathematical critical thinking skills (Marina et al., 2020). Motivation comes from the word motive which means an effort that will encourage someone to do an activity. According to (Asrori, 2020), learning motivation is an encouragement or a person's desire to do something that is his desire or effort to achieve the goals to be achieved. Then (Nur'Azizah et al., 2021) stated that motivation is like the fuel of a vehicle which means it can provide strength or energy. So, learning motivation is a condition that exists within a person that encourages him to carry out activities in the form of learning.

Motivation to learn in students can be observed in everyday life. For example, students who have high learning motivation can be seen from their learning capacity, and willingness to participate in learning and answer questions with full responsibility. The higher elementary student's learning motivation, the better the critical thinking ability (Fajari et al., 2020). This is in line with the research conducted by (Sulistianingsih, 2026) which states that the higher the motivation to learn in oneself, the higher the critical thinking ability possessed by that person, this is evidenced by the results of research obtained that motivation and critical thinking skills has a significant effect.

The explanation shows that there is still a need for a study to investigate the effect of learning motivation and intrapersonal intelligence on students' mathematical critical thinking skills, the limited research on this matter at the high school level makes researchers interested in taking a high school as a sample and using data analysis techniques, different from the existing ones which will be explained in the methods section. With this research, it is hoped that teachers can improve students' critical thinking skills by paying attention to students' motivation and intrapersonal intelligence. Therefore, This research points to control the stimulate of intrapersonal intelligence and learning motivation on students' mathematical critical thinking skills.

METHOD

This research is a quantitative research with an ex post facto approach. As for the research stages, in this study, namely, conducting a literature study to compile a questionnaire on critical thinking skills, intrapersonal intelligence and learning motivation, validation with supervisors, revising the validation results, conducting research by distributing forms to students, analyzing data and making conclusions. This study consisted of one endogenous latent variable and two exogenous latent variables. where, critical thinking skills are endogenous latent variables and intrapersonal intelligence and learning motivation are exogenous latent variables.

For the critical thinking variable, the researcher used a questionnaire compiled based on the indicators proposed by Facione (2011) namely interpreting, analyzing, evaluating, and inferring about 10 questions. As for the intrapersonal intelligence variable, there are 20 questions, which the researcher developed on the aspects of recognizing yourself, knowing what you want, and knowing what is important (Abdi et al., 2020). In addition, indicators to measure learning motivation are 1)

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i3.5440

responsibility for doing tasks, 2) carrying out tasks with clear targets, 3) having clear and challenging goals, 4) always trying to outperform others, 5) prioritizing the results of what is expected, 6) always remembering one's abilities, 7) happy to get praise of what is done, and 8) work with the hope of getting a good score, with a total of 20 questions including negative and positive questions. The research procedures used were: Performing instrument preparation, Validation and then Dissemination through the help of google forms.

This research was conducted in a class XI high school in the Sidrap district, Sidenreng Rappang Regency, South Sulawesi Province, Indonesia. This study uses primary data collected by using the purposive sampling technique. The number of samples in this study was 85 students. In this study, 3 instruments were used, namely intrapersonal intelligence instruments, learning motivation, and students' mathematical critical thinking skills.

The data collection technique uses questionnaire of critical thinking, motivation and intra-personal instruments which are packaged in a google form and then shared with students with the help of the teacher.

Data analysis in this study used the Structural Equation Modeling (SEM) analysis which was used to analyze the model in the form of a path equation (Hamid & Anwar, 2019). The series of data processing processes include testing the measurement model, including validity and reliability, while the structural model testing includes testing the significance of the effect of exogenous latent variables on endogenous latent variables.

RESULTS AND DISCUSSION

1. Structural Model Design

Regarding the explanation of latent variables and their manifest variables, they are as follows:

a. The exogenous latent variable Intrapersonal Intelligence has 20 manifest variables (indicators) which are stated as X1n. n=1,2,3…20.
b. The exogenous latent variable of Learning Motivation has 20 manifest variables (indicators) which are stated as X2n. n=1,2,3…20.
c. Endogenous latent variables mathematical critical thinking skills has 10 manifest variables (indicators) which are stated by Yn. n=1,2,3…10.

The structural model is showed in Figure 1.

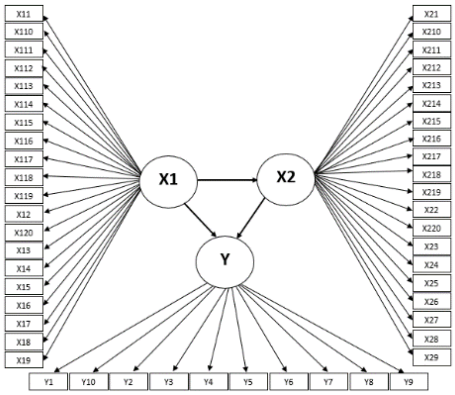

Figure 1. Structural model

Figure 1 shows the structural model in this study. There are 50 questions that will be tested for validity and reliability using the Smart PLS application, consisting of 20 questions for exogenous variables and 10 questions for endogenous variables.

2. Evaluation of Outer Model

The assessment of the model in this investigate employments three stages, that is the convergent, discriminant and the composite reliability test.

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i3.5440

a. Convergent Validity Test

The convergent validity test is showed in Table 1.

Table 1. *Outer loading factor*

	X1	X2	Y
X110	0.774		
X112	0.779		
X120	0.808		
X17	0.841		
X21		0.775	
X210		0.713	
X22		0.789	
X24		0.776	
X26		0.722	
X28		0.745	
Y4			0.900
Y6			0.820

To test the convergent validity, it is determined whether it is valid or not based on the outer loading factor value. If the outer loading factor value is > 0.7 then the indicator is valid (Hair et al., 2021) Based on table 1, of the 20 questions for the intrapersonal intelligence variable there are four valid questions, as well as from the 20 motivational variable questions there are six valid questions, and two valid questions to measure critical thinking variables. the indicators are declared valid because the loading factor value is > 0.7. This is also reinforced by the value of Average Variance Extracted (AVE) and the result of this test is showed in Table 2.

Table 2. *Value of average variance extracted*

	Average Variance Extracted
X1	0.642
X2	0.568
Y	0.741

To test the convergent validity of a variable based on the AVE value to be valid, the AVE value is> 0.5 (Hair et al., 2021), so based on the table above, each variable is valid because the AVE value is > 0.5. which implies that each variable can be used with valid questions and can measure what it is supposed to measure.

b. Discriminant Validity Test

The discriminant validity test is complete by comparing the cross-loading table values. An indicator that has a cross loading factor value that is greater than the other cross loading factor values, then the indicator is valid (Hair et al., 2021). The result of cross landing factor can be seen in Table 3.

Table 3. *Cross loading factor*

	X1	X2	Y
X110	0.774	0.580	0.569
X112	0.779	0.473	0.530
X120	0.808	0.516	0.495
X17	0.841	0.543	0.538
X21	0.457	0.775	0.571
X210	0.412	0.713	0.462
X22	0.342	0.789	0.526
X24	0.554	0.776	0.578
X26	0.578	0.722	0.704
X28	0.577	0.745	0.565
Y4	0.653	0.737	0.900
Y6	0.479	0.568	0.820

Based by the side of the table 3, the indicators for all variable have met the requirements of discriminant validity for the reason that the value of the loading factor in question is better than the value of the other loading factors.

c. Composite Reliability Test

(Hair et al., 2021), and (Hamid & Anwar, 2019) state that a variable is supposed to be reliable if all-composite reliability values are > 0.70.

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i3.5440

Table 4. *Composite reliability*

	Composite Reliability
X1	0.877
X2	0.887
Y	0.851

Based on the Table 4, it is obtained that each composite reliability value is > 0.7 so each variable is reliable. meaning that the variable can measure the same thing consistently or reliably

3. Structural model testing (*inner model*)

The inner model is a structural model based on the path coefficient value, seeing the large influence of the observed variables using bootstrap calculations.

a. Test Results of R^2

Table 5. The value of R^2

	Average Variance Extracted
X2	0.439
Y	0.634

Based on the Table 5, it is found that the R^2 value for the latent variable of intrapersonal intelligence on learning motivation is 0.439. This means that the variable of intrapersonal intelligence affects the variable of learning motivation by 43.9% and the rest is impacted by previous variables not observed in this study. In addition to the R^2 value between the variables of intrapersonal intelligence and learning motivation on students' mathematical critical thinking skills, it is 0.634. That is, the large influence between the variables of intrapersonal intelligence and learning motivation on students' mathematical critical thinking skills is 63.4% and the rest is impacted by other variables not observed in this study.

b. Path Coefficients

Table 6. *Path coefficients*

	Original Sample (O)	T-statisitics	P Values
X1->X2	0.662	7.236	0.000
X1->Y	0.284	2.203	0.030
X2->Y	0.579	4.554	0.000

Based on the Table 6, it is found that the Intrapersonal Intelligence variable (X1) affects the learning motivation variable (X2) because the significance value is <0.05. This is also reinforced by the value of the t statistic (7.236) > t table (1.664). This is same with research conducted by (Rustiana, 2017) that intrapersonal intelligence significantly influences student learning motivation, so that students who have good learning motivation are actually caused by their intrapersonal intelligence. Then the intrapersonal intelligence variable (X1) has a significant effect on students' mathematical critical thinking skills (Y) because the significance value is <0.05. This is also reinforced by the value of t statistic (2.203) > t table (1.664). This is similar with the research of (Sholikhati et al., 2017) that there is a relationship between intrapersonal intelligence and critical thinking, students have good critical thinking skills because they have good intrapersonal intelligence.

Furthermore, the learning motivation variable (X2) also has a significant effect. on students' mathematical critical thinking skills (Y) because the significance value <0.05. This is also reinforced by the value of t statistic (4.554) > t table (1.664). This is in line with research conducted by (Anita, 2015; Yunita et al., 2018) which states that learning motivation influences each other, meaning that the higher the motivation, the higher the students' mathematical critical thinking skills.

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i3.5440

c. Indirect effect

Table 7. *Indirect effect*

	Original Sample (O)	T Statistics	P Values
X1->Y	0.383	4.028	0.000

Based on the table.7, the indirect effect value for the influence of intrapersonal intelligence on students' mathematical critical thinking skills through learning motivation is 0.383 with a t statistic of 4.028> t table of 1.664. So that the learning motivation variable is able to play a good role in mediating the influence between intrapersonal intelligence variables and students' mathematical critical thinking skills.

The findings of this study showed that students' mathematical critical thinking skills were influenced by students' learning motivation and students' intrapersonal intelligence. The results of this study are in accordance with research conducted by Anita (2015); Rustiana (2017); Yunita et al. (2018). In this study, it was also found that there were several invalid statements; this was because they did not meet the predetermined criteria. The factors that caused the results of this study were as expected students were very serious in filling out the questionnaires given because students filled out during math learning hours and when filling out students were not under pressure.

The results of this study indicate that both variables have an influence on students' critical thinking skills. This can have a significant impact on learning, teachers can improve students' critical thinking skills through efforts to increase students' motivation and intrapersonal intelligence. As for suggestions for further researchers to use more statements on each indicator used in research. In addition, other researchers can also conduct further research related to the description of students' critical thinking skills in terms of learning motivation. Then, this is also a recommendation for teachers to often motivate students before and after learning so that students can follow the lesson.

CONCLUSION

Based on the results of the research exposure, it was found that intrapersonal intelligence affected students' mathematical critical thinking skills either directly or indirectly through learning motivation. Besides that, learning motivation also has a direct effect on students' mathematical critical thinking skills. This is a concern for educators to pay attention to intrapersonal intelligence and learning motivation in carrying out learning so that students' mathematical critical thinking skills can develop well.

REFERENCES

Abdi, A. W., Desfandi, M., & Islamiati. (2020). Visual-Spatial and Intrapersonal Intelligence: Identification Its Role in The Learning Outcomes of Students in Islamic Schools. *International Journal Pedagogy of Social Studies*, *5*(1), 112–121. https://doi.org/https://doi.org/10.17509/ijposs.v5i1.26699

Anawati, S. (2021). Pengaruh Kecerdasan Interpersonal Terhadap Kemampuan Berpikir Kritis Matematika. *SINASIS 2 Prosiding Seminar Nasional Sains*, *2*(1), 229–237.

Anita, I. W. A. W. (2015). Pengaruh Motivasi Belajar Ditinjau Dari Jenis Kelamin Terhadap Kemampuan Berpikir Kritis Matematis. *P2M STKIP Siliwangi*,

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i3.5440

2(2), 246. https://doi.org/10.22460/p2m.v2i2p246-251.184

Asrori. (2020). *Psikologi Pendidikan: Pendekatan Multidisipliner* (1st ed.). Cv. Pena Persada.

Facione, P. a. (2011). Critical Thinking : What It Is and Why It Counts. *Insight Assessment*, *ISBN 13: 978-1-891557-07-1*., 1–28.

Fajari, L. E. W., Sarwanto, & Chumdari. (2020). Student critical thinking skills and learning motivation in elementary students. *Journal of Physics: Conference Series*, *1440*(1). https://doi.org/10.1088/1742-6596/1440/1/012104

Hair, J. F., Hult, G. T. M., Ringle, C., Sarstedt, M., Danks, N., & Ray, S. (2021). Partial least squares structural equation modeling (PLS-SEM) using R: A workbook. https://doi.org/https://doi.org/10.1007/978-3-030-80519-7

Hamid, R. S., & Anwar, S. M. (2019). *Structural Equation Modeling (SEM) Berbasis Varian: Konsep Dasar dan Aplikasi dengan Program SmartPLS.3.2.8 dalam Riset Bisnis* (1st ed.). PT Inkubator Penulis Indonesia.

Lazear, D. G. (2004). *Teaching for Multiple Intelligences*. Phi Delta Kappa Educationa Foundation.

Mahmud, N., & Amaliyah AR, R. (2017). Pengaruh Kecerdasan Intrapersonal Terhadap Prestasi Belajar Matematika Siswa Ditinjau Dari Tingkat Akreditas Sekolah SMA Negeri di Kabupaten Polewali Mandar. *Matematika Dan Pembelajaran*, *5*(2), 153–167. https://doi.org/https://doi.org/10.24252/mapan.v5n2a1

Maratusyolihat, M., Adillah, N., & Ulfah, M. (2021). Pengaruh Kecerdasan Intrapersonal Dan Kemandirian Belajar Terhadap Kemampuan Berpikir Kreatif Pada Pelajaran Matematika. *Kordinat: Jurnal Komunikasi Antar Perguruan Tinggi Agama Islam*, *20*(2), 235–248. https://doi.org/10.15408/kordinat.v20i2.21408

Marina, Sumartoyo, & Mutakin, T. Z. (2020). Pengaruh Motivasi Belajar dan Perhatian Orang Tua terhadap Kemampuan Berpikir Kritis Matematika (Survei pada Siswa Kelas XI SMA di Depok). *Alfarisi: Jurnal Pendidikan MIPA*, *3*(2), 120–128.

Nur'Azizah, R., Utami, B., & Hastuti, B. (2021). The relationship between critical thinking skills and students learning motivation with students'learning achievement about buffer solution in eleventh grade science program. *Journal of Physics: Conference Series*, *1842*(1). https://doi.org/10.1088/1742-6596/1842/1/012038

Paradita, L., Vahlia, I., & ES, Y. R. (2019). Peningkatan Kecerdasan Intrapersonal Dan Hasil Belajar Melalui Model Pembelajaran Take and Give Berbasis Matematika Realistik. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, *8*(3), 438–447. https://doi.org/10.24127/ajpm.v8i3.2473

Putri, L. S., Azmi, S., Salsabila, N. H., & Hikmah, N. (2022). Pengaruh Kecerdasan Interpersonal dan Kecerdasan Matematis-Logis Terhadap Kemampuan Komunikasi Matematis. *Jurnal Ilmiah Profesi Pendidikan*, *7*(2b), 611–619. https://doi.org/10.29303/jipp.v7i2b

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i3.5440

.411

Rejeki, S., & Isharyanti, L. (2020). Hubungan Kemampuan Berpikir Kritis dengan Kecerdasan Intrapersonal Siswa di SDN 2 Jontlak Kabupaten Lombok Tengah. *CIVICUS : Pendidikan-Penelitian-Pengabdian Pendidikan Pancasila Dan Kewarganegaraan*, *8*(1), 70. https://doi.org/10.31764/civicus.v8i1.1941

Rustiana, B. N. (2017). Pengaruh Kecerdasan Intrapersonal Terhadap Motivasi Belajar Siswa Kelas Xi IPS MA Darul Qur'an Bengkel Tahun Pelajaran 2016/2017 [UIN Mataram]. In uin mataram etheses. http://etheses.uinmataram.ac.id/651/

Saputra, H. N., & Salim, S. (2020). Penerapan Bahan Ajar Berbasis Keterampilan Berpikir Kritis. *PEDAGOGIK: Jurnal Pendidikan*, *7*(1), 22–46. https://doi.org/10.33650/pjp.v7i1.1078

Schafersman, S. (1991). *An Introduction To Critical Thinking*. https://facultycenter.ischool.syr.edu/wp-content/uploads/2012/02/Critical-Thinking.pdf

Sholikhati, R., Maridyana, & Saputro, D. R. S. (2017). Students' Thinking Level Based on Intrapersonal Intelligence. IOP Conf. Series: Journal of Physics:, 943. https://doi.org/doi :10.1088/1742-6596/943/1/012007

Sianturi, A., Sipayung, T. N., & Simorangkir, F. M. A. (2018). Pengaruh Model Problem Based Learning (PBL) Terhadap Kemampuan Berpikir Kritis Matematis Siswa SMPN 5 Sumbul. *UNION: Jurnal Ilmiah Pendidikan Matematika*, *6*(1), 29–42. https://doi.org/10.30738/.v6i1.2082

Sulistianingsih, P. (2026). Pengaruh Kecerdasan Emosional Dan Motivasi Belajar Terhadap Kemampuan Berpikir Kritis Matematika. *JKPM*, *02*(01), 129–139.

Yunita, N., Rosyana, T., & Hendriana, H. (2018). Analisis Kemampuan Berpikir Kritis Matematis Berdasarkan Motivasi Belajar Matematis Siswa Smp. *JPMI (Jurnal Pembelajaran Matematika Inovatif)*, *1*(3), 325. https://doi.org/10.22460/jpmi.v1i3.p325-332