Systematic Literature Review : Mathematical Communication Ability through Self Efficacy

Eka Anjarwati[*1]; Zaenuri[2]; Isti Hidayah[3]
[1,2,3] Pendidikan Matematika, Universitas Negeri Semarang
ekaanjarwati43@students.unnes.ac.id[*1], zaenuri.mipa@mail.unnes.ac.id[2],
isti.hidayah@mail.unnes.ac.id[3]

Abstract

This study aims to describe students' mathematical communication abilities in terms of self-efficacy. The research method used is the Sytematic Literatur Review (SLR).The article data used many as 14 journal article that accredited national, published in 2017-2022 in database Google Scholar through the help of Harzing's Publish or Perish application. The research results obtained are mathematical communication ability as a skill that must be possessed by students can be influenced by self-efficacy. Individual self-efficacy increases, their mathematical communication skills also incress and vice versa, with low individual self-efficacy, mathematical communicatin akills are also low.

Keywords: *Mathematical Communication Ability; Self Efficacy.*

Abstrak

Penelitian ini bertujuan untuk mendeskripsikan kemampuan komunikasi matematis siswa yang ditinjau dari *self efficacy*. Metode penelitian yang digunakan adalah Sytematis Literatur Review (SLR). Data artikel yang digunakan terkait dengan kemampuan komunikasi matematis dan *self efficay* sebanyak 14 artikel jurnal nasional terakreditasi, terbitan tahun 2017-2022 di database google schoolar melalui bantuan aplikasi Harzing's Publish or Perish. Hasil penelitian yang diperoleh adalah kemampuan komunnikasi matematis sebagai kempuan yang harus dimiliki oleh siswa dapat dipengaruhi oleh *self-efficacy. Self efficacy* individu meningkat, kemampuan komunikasi matematisnya juga meningkat dan sebaliknya, dengan *self efficacy* individu rendah, kemampuan kemampuan komunikasi matematis juga rendah

Kata Kunci: Kemampuan Komunikasi Matematis; *Self Efficacy.*

*Correspondence:
Email: ekaanjarwati43@students.unnes.ac.id

INTRODUCTION

Mathematics is a branch of science that can change the mindset of humans to modern times based on information and communication technology. To master the development of science and technology, it is necessary to understand mathematics as its basis. Mathematics is one of the subjects whose function is to develop the ability to count, measure and use mathematical formulas that can be applied in life. Mathematics is also considered a difficult subject for students. Because in mathematics there are many formulas.

According to Hanipah, H., & Sumartini, TS (2021), in learning mathematics, there are several mathematical abilities that must be possessed by students. One of them is the ability of mathematical communication. According to the National Council of Teachers of Mathematics (NCTM), (Hanipah, H., & Sumartini, T.S, 2021) states that the standard process of learning mathematics consists of problem solving, reasoning and proof, communication, connection in mathematics and representation. Mathematical communication is a very important ability for students, because it can affect many things, including in every day life.

Mathematical communication skills explaining ideas, situations, writing with real objects, pictures, graphics and algebra are moderate. Mathematical communication ability expressing daily events in language or mathematical symbolsis low. Mathematical communication ability to model a situation through writing, concrete objects, pictures, graphics, and algebraic methods is low. Mathematical communication ability to explain and make questions about the mathematics that has been studied is low.

Mathematical communicationis a way and understanding so that through communication ideas can be developed through a process to build meaning and explain these ideas (Wardono, et.al, 2020). NCTM (2000) suggests that mathematical communication standards emphasize the learning of mathematics on students' abilities in the following ways: 1) Organize and combine their mathematical thinking through communication, 2) Communicate their mathematical thinking logically and clearly to their friends, teachers and other people, 3) Analyze and evaluate mathematical thinking and strategies used by

others, 4) Use mathematical language to expres smathematical ideas correctly. Indicators of mathematical communication ability, namely 1) Expressing metamatical ideas through oral, written and visual representations, 2) analyzing and evaluating mathemativcal ideas both orally and in writing, 3) Usinng terms, language or mathemaical symbols and its structures to model mathematical situations or mathematics problems.

When students communicate their thoughts to others verbally it will help increase understanding, create similarities and deep language to express mathematical ideas. It contributes to conceptual understanding, problem solving, and correct misunderstanding of mathematical concepts (Kamid, Rusdi, M., Fitaloka, O., Basuki, F.R, & Anwar, K, 2020).

Students often experience difficulties in expressing mathematical ideas both verbally and in writing, as well as demonstrating and visualizing themvisually. Based on the exercises provided by the teacher, only a few students were able to express their writing using mathematical terms or notation (Hidayati, Abidin, Z., & Ansari, B.I, 2020).

The affective domain is also an other important factor in achieving learning objectives. Someone will achieve optimal learning out comes by having good confidence in their abilities. This beliefis a positive behavior that can stimulate the achievement of maximum learning out comes, with optimistic student behavior for success in learning. This is in line with the opinion of Canfields &Watkins in Rapsanjani, D.M, & Sritresna, T. (2021), that student success can be influenced by their own thoughts about their abilities, and these thoughts are repetitive, prolonged, difficult to replace, and entrenched in students. Belief in one's own abilities in the affective domain is related to self-efficacy.

Accordingto Rapsanjani, D.M, & Sritresna, T. (2021) mathematical communication skills are important, but facts on the ground show that students' communication skills are still relatively low. The reason is because students are less able to communicate mathematical ideas in learning mathematics and there is no confidence in students regarding their abilities. The lack of self-confidence that arises is related to the affective domain.

Self-efficacy is the student's belief in the ability to complete tasks in mathematics. Self-efficacy is a manifestation of students' ability to complete math assignments or succeed in other programs related to mathematics. In research Kitsantas, Cheema, and Ware (Aprisal, A., & Abadi, A.M, 2018) revealed that students with low self-efficacy tend to have low math scores and spend a lot of time completing math assignments. In other studies also revealed that high self-efficacy tends to make great efforts and they don't give up when they experience failure. This is also supported by other opinions that students with high self-efficacy tend to be interested in working on questions with different levels of difficulty and when they experience difficulties and mistakes they will try again to solve them. In other words, students with low self-efficacy tend to avoid solving problems, especially if they experience a high level of difficulty. (Aprisal, A., & Abadi, A.M, 2018).

*Self-efficacy*is a psychological aspect that has a significant influence on student success in completing assignments and problem solving questions properly. *Self-efficacy* impact on motivation, so it is related to student success in learning. According to Schunk, a student who has high self-efficacy will try hard to achieve success in learning. Conversely, if students who have low self-efficacy, they tend to avoid assignments or are not motivated in doing them so they will quickly give up when faced with obstacles (Fonna, M., & Mursalin, M, 2018).

Therefore, self-efficacy is needed by students to be successful in learning mathematics. Gagatsis & Sophocleous found that high-ability students have stronger and more accurate efficacy beliefs about volume measurement tasks compared to low-ability students (Fonna, M., & Mursalin, M, 2018).

Based on the background that has been described, the researchers conducted researchon students' mathematical communication abilities in terms of self-efficacy. The purpose of this research is to find out how students' mathematical communication skills are when viewed from self-efficacy.

RESEARCH METHODS

This study uses the Systematic Literature Review (SLR) method. The Systematic Literature Review methodis a research method by identifying, assessing, evaluating, and interpreting various studies related to the chosen theme. With this method, the researcher reviews and identifies journal articles systematically, which in each process follow predetermined steps.

Based on the above steps to complete the results of the study, the researchers collected articles related to mathematical communication skills and self-efficacy. Data collection was carried out by documenting all the articles obtained in this literature review article. The articles used in this study were 14 accredited national journal articles published in 2017-2022 in the Google Schoolar data base through the help of the Harzing's Publish or Perish application. Article data is presented in a table which includes the author's name, year of publication, article title, and research results. The selected analysis is articles that have similar research and then the articles are analyzed and summarized. The results of the research are then presented in a complete discussion in this article.

RESULTS AND DISCUSSION

The first stage in this research is to formulate research questions. Based on the results of observations, a research question was formulated, namely: how are students' mathematical communication abilities in terms of self-efficacy?

After formulating the research questions, the researcher looked for literature in the form of journal articles that matched the keywords that had been determined. Then in the next stage, an evaluation of the results of the literature search is carried out. At this stage, 14 articles were obtained that could answer questions to be studied more deeply. In the next stage, namely the fourth and fifth stages, the researcher grimaced and then interpreted the 14 articles that had been determined in the next stage. The results of the research data included in this literature review are ananalysis and summary of documented articles related to mathematical communication skills and self-efficacy which are presented in the following table.

Tabel 1. Research Results related to Mathematical Communication Ability and Self Efficacy

No	Name of Researcher and Year of Publication	Article Title	Research Result
1	Sufi Nur Hakiki, Rostina Sundayana (2022)	Kemampuan Komunikasi Matematis pada Materi Kubus dan Balok Berdasarkan Kemandirian Belajar Siswa	The results of the study found that students with high independence had better mathematical communication skills than students with moderate and low independence. In addition, students with moderate independence have better mathematical communication skills than students with low independence.
2	Nurhanurawati, Widyastuti, Riyan Ramadhan (2021)	Dampak *Self-Efficacy* Terhadap Kemampuan Komunikasi Matematis Siswa	The results showed that the majority of students had quite high mathematical communication skills and self-efficacy and the higher the students' self-efficacy, the higher the students' mathematical communication skills. The conclusion of this research is that students' self-efficacy has a significant positive effect on students' mathematical communication abilities, with 63.1% of the variability of students' communication abilities that can be explained by self-efficacy.
3	Siti Zahrowiyah, Surya Sari Faradiba, Alifiani (2022)	Kemampuan Komunıkasi Matematıs Tulis pada Materi Bentuk Aljabar Ditinjau dari *Self-Efficacy* Peserta Didik	The results showed that students with high self-efficacy had very good written mathematical communication skills because they were able to maximally load all indicators of written mathematical communication. Students with moderate self-efficacy have quite good written mathematical communication skills because they are able to load all indicators of written

No	Name of Researcher and Year of Publication	Article Title	Research Result
			mathematical communication quite optimally with the final results being inaccurate. Furthermore, students with low self-efficacy have poor written mathematical communication skills because they are not optimal in fulfilling the indicators. Students are only able to fulfill 3 of the 4 written mathematical communication indicators, and are unable to understand the completion procedure correctly.
4	Anggi Mei Ha'an Firdaus, Darmiany, Awal Nur Khalifatur Rosyidah (2021)	Hubungan *SelfEfficacy* dengan Kemampuan Komunikasi Matematis Siswa Kelas V SDN Gugus IV Kuripan Tahun Ajaran 2020/2021	The results of the study showed that the level of independence of students was in the high category with an average score of 44.77 students. The level of students' mathematical communication ability was in the high category with an average normal score of 58.54 students. The r-count value is 0.469 r-table 0.244 at a significance level of 5%, which indicates that there is a large and positive relationship between self-efficacy and the mathematical communication abilities of students in class V to group IV kuripan. So it is very possible that assuming individual self-efficacy or self-confidence increases, their mathematical communication abilities also increase and vice versa, assuming low individual self-efficacy, their mathematical communication abilities are also low.
5	Riski Supriyati, Supriyono, Nila Kurniasih (2021)	Analisis Kemampuan Komunikasi Matematis	The results of the study show that students with high self-efficacy are able to express their mathematical ideas in the form of

No	Name of Researcher and Year of Publication	Article Title	Research Result
		Berdasarkan *Self-Efficacy* Siswa dalam Pemecahan Masalah Matematika	mathematical communication to find solutions to a problem well. They look firm and confident in communicating their mathematical ideas into symbols and mathematical models. Students with low self-efficacy still have difficulty communicating their mathematical ideas and are still not careful in solving problems. They are also often less careful in using mathematical terms and notation.
6	Nirwanty Angela Al Ghani, Citra Megiana Pertiwi, Nelly Fitriani (2022)	Kemampuan Komunikasi Siswa SMP Kelas VIII Ditinjau dari *Self-Efficacy*	The research results obtained in this study are mathematical communication skills in terms of self-efficacy in students who have high communication skills, the self-efficacy is high because in mastering the concept they meet the criteria but there are also some students who have high self-efficacy but in mastering the ability communication is still relatively low.
7	Asep Ikin Sugandi, Padillah Akbar (2020)	Efektivitas Model *Student Facilitator and Explaining* terhadap Kemampuan Komunikasi Matematis Siswa SMP Ditinjau dari *Self-Efficacy*	The results of the study found that the application of the student facilitator explaining model was effective in achieving students' mathematical communication skills in terms of overall and in terms of self-efficacy, there was an interaction between the student facilitator and explaining learning model and self-efficacy on junior high school students' communication skills.
8	Viki Fitria, Isnaini Handayani (2020)	Kemampuan Komunikasi Matematis Berdasarkan *Self-Efficacy*	The results of this study found that the communication skills of vocational students were influenced by their self-confidence of 37.69% while

No	Name of Researcher and Year of Publication	Article Title	Research Result
			53.9% were influenced by factors other than students' self-confidence.
9	Amin Asri Yati, Jefri Marzal, Yantoro (2018)	Pengaruh Pendekatan Pembelajaran Konstruktivis-me dan *Self-Efficacy*Siswa terhadap Kemampuan Komunikasi Matematis Siswa	The research results obtained are the constructivism approach and students' self-efficacy affect students' mathematical communication skills. It is recommended for teachers, especially mathematics teachers and in general for all subject teachers to use a strategy and model approach in the teaching and learning process so that learning can be achieved and get better results. In choosing a learning approach the teacher needs to consider the nature of student self-efficacy, so that the learning approach used can actually develop students' mathematical communication skills.
10	Heris Hendriana, GidaKadarisma (2019)	*Self-Efficacy*dan Kemampuan Komunikasi Matematis Siswa SMP	The results of the study show that mathematical communication skills are influenced by self-efficacy. And self-efficacy has a positive effect on students' communication skills, meaning that the higher the student's self-efficacy, the higher the student's communication skills, then the correlation coefficient value belongs to a very strong classification.
11	Eka Firmansyah, Melinda Putri Mubarika, Khoirina Dwi Ayu Maulidia M (2020)	Implementasi Model Pembelajaran *Problem Based Learning* untuk Meningkatkan	The results of this study indicate that 1) the mathematical communication skills of students who receive a problem-based learning model are better than students who receive conventional learning, 2) the mathematical connection abilities

No	Name of Researcher and Year of Publication	Article Title	Research Result
		Kemampuan Komunikasi dan Koneksi Matematis serta *Self-Efficacy* Siswa SMA	of students who receive a problem-based learning model are better than students who receive conventional learning, 3) self- the efficacy of students who get problem-based learning learning models is included in the good category, 4) there is a correlation between mathematical communication skills and the self-efficacy of students who use problem-based learning learning models, 5) there is a correlation between students' mathematical connection abilities and self-efficacy students who use learning with problem-based learning models.
12	Rizcky Dwi Maulana Kurnia, Irma Mulyani, Euis Eti Rohaeti, Aflich Yusnita Fitrianna (2018)	Hubungan antara Kemandirian Belajar dan *SelfEfficac y*terhadap Kemampuan Komunikasi Matematis Siswa SMK	The research results obtained show that: a) there is a relationship between learning independence and mathematical communication skills; b) there is a relationship between self-efficacy and mathematical communication skills; c) there is a relationship between learning independence and self-efficacy; and d) there is a relationship between learning independence and self-efficacy on students' mathematical communication skills. In general, learning independence and self-efficacy together have a relationship to students' mathematical communication abilities by contributing 51.55% and 48.45% of them are influenced by other factors. In other words, if students' learning independence and self-efficacy are good, their communication

No	Name of Researcher and Year of Publication	Article Title	Research Result
			skills will also be good.
13	UrniBabys (2020)	Analisis Kemampuan Komunikasi Matematika Siswa Ditinjau dari Gender	The results showed that the mathematical communication ability of female students on all indicators had a higher score than male students. female students are more thorough, meticulous and patient in solving math problems so they are able to communicate mathematical ideas either with pictures, diagrams or symbols and have a better mathematical representation than male students. the mathematical communication ability of female students is higher than that of male students, namely 58.71% or a difference of 17.42%.
14	Tonnie Hari Nugraha, Heni Pujiastuti (2019)	Analisis Kemampuan Komunikasi Matematis Siswa Berdasarkan Perbedaan Gender	The results showed that the mathematical communication abilities of female students were higher than those of male students. This is shown both as a whole and in certain aspects. In the aspect of drawing and mathematical expression, the mathematical communication ability of female students is higher than that of male students. Meanwhile, in the writing aspect, male students' mathematical communication abilities were higher than female students. For female students, the drawing aspect was higher than the mathematical expression and writing aspects, while for male students the writing aspect was higher than the drawing and mathematical expression aspects

Based on the results of the research that has been done as listed in the table above, it shows that the constructivism approach and student self-efficacy affect students' mathematical communication skills. It is recommended for teachers, especially mathematics teachers and in general for all subject teachers to use a strategy and model approach in the teaching and learning process so that learning can be achieved and get better results. In choosing a learning approach the teacher needs to consider the nature of student self-efficacy, so that the learning approach used can actually develop students' mathematical communication abilities. It is hoped that further research can be carried out on other topics (Yati, Amin Asri, et al, 2018).

Any mathematical communication abilities based on gender are found in the research of Tonnie Hari Nugraha, Heni Pujiastuti (2019) and Urni Babys (2020) with the results obtained that the mathematical communication abilities of female students are higher than the mathematical communication abilities of male students. In the aspect of drawing and mathematical expression, the mathematical communication ability of female students is higher than that of male students. Meanwhile, in the writing aspect, male students' mathematical communication abilities were higher than female students. For female students, the drawing aspect was higher than the mathematical expression and writing aspects, while for male students the writing aspect was higher than the drawing and mathematical expression aspects. Female students are more conscientious,

Mathematical communication ability based on student learning independence according to research by Sufi Nur Hakiki, Rostina Sundayana (2022) that students with high independence have better mathematical communication skills than students with moderate and low independence. In addition, students with moderate independence have better mathematical communication skills than students with low independence. This was also reinforced by Rizcky et al's research on the relationship between learning independence and self-efficacy on students' communication skills and it was found that there was a relationship between learning independence and mathematical communication skills, there was a relationship between self-efficacy

and mathematical communication skills, there was a relationship between learning independence and self-efficacy; and there is a relationship between learning independence and self-efficacy on students' mathematical communication abilities. So that it can be said that learning independence and self-efficacy have a relationship to students' mathematical communication abilities by contributing 51.55% and 48.45% of them are influenced by other factors. In other words, if students' learning independence and self-efficacy are good, their communication skills will also be good.

From researchSiti Zahrowiyah, Surya Sari Faradiba, Alifiani (2022), regarding written mathematical communication skills in terms of students' self-efficacy shows that students with high self-efficacy have very good written mathematical communication skills because they are able to maximally load all written mathematical communication indicators. Students with moderate self-efficacy have quite good written mathematical communication skills because they are able to load all indicators of written mathematical communication quite optimally with the final results being inaccurate. Furthermore, students with low self-efficacy have poor written mathematical communication skills because they are not optimal in fulfilling the indicators. Students are only able to fulfill 3 of the 4 written mathematical communication indicators, and are unable to understand the completion procedure correctly.

From the research that has been done regarding students' mathematical communication abilities based on self-efficacy in the research of Anggi, et al (2021) on elementary students, Heris Hendriana, Gida Kadarisma (2019) and Nirwanty Angela Al Ghani, Citra Megiana Pertiwi, Nelly Fitriani (2022) on junior high school students , Viki Fitria, & Isnaini Handayani (2020) in general, Supriyono, Nila Kurniasih (2021) in problem solving the research results show that mathematical communication skills are influenced by self-efficacy. The majority of students have fairly high mathematical communication skills and self-efficacy and the higher the students' self-efficacy, the higher the students' mathematical communication skills. Student self-efficacy has a significant positive effect on students' mathematical communication skills, meaning that the

higher the student's self-efficacy, the higher the student's communication skills, then the correlation coefficient value belongs to a very strong classification. So it is very possible that assuming individual self-efficacy or self-confidence increases, their mathematical communication abilities also increase and vice versa, assuming low individual self-efficacy, their mathematical communication abilities are also low.

According to Asep Ikin Sugandi's research, Padillah Akbar (2020), regarding the effectiveness of the Student Facilitator And Explaining Model on the mathematical communication abilities of junior high school students in terms of self-efficacy in obtaining the results of applying the student explaining facilitator model it is effective in achieving students' mathematical communication abilities in terms of overall and in terms of self-efficacy, there is an interaction between the student facilitator and explaining learning models and self-efficacy on junior high school students' communication skills.

Eka Firmansyah, et al (2020) also provided results from the implementation of the problem-based learning model to improve communication and mathematical connection skills and self-efficacy of high school students with research results showing that 1) the mathematical communication skills of students who received problem-based learning models were better than students who received conventional learning, 2) the mathematical connection abilities of students who received problem-based learning models were better than students who received conventional learning, 3) the self-efficacy of students who received problem-based learning models was included in the good category, 4) there the correlation between mathematical communication skills and the self-efficacy of students who use problem-based learning,5) there is a correlation between students' mathematical connection abilities and students' self-efficacy using problem-based learning.

From research conducted by Nurhanurawati, Widyastuti, Riyan Ramadhan (2021) regarding the impact of Self-Efficacy on students' mathematical communication abilities, it was found that the majority of students had fairly high mathematical communication skills and self-efficacy and the higher the students'

self-efficacy, the higher their communication skills. students' mathematics is also higher. The conclusion of this research is that students' self-efficacy has a significant positive effect on students' mathematical communication abilities, with 63.1% of the variability of students' communication abilities that can be explained by self-efficacy.

CONCLUSION

Based on the results of the discussion described above, it can be concluded that mathematical communication ability as a skill that must be possessed by students can be influenced by self-efficacy.Individual self-efficacy or self-confidence increases, their mathematical communication skills also increase and vice versa, with low individual self-efficacy, mathematical communication abilities are also low.

REFERENCES

Aminah, S., Tanu Wijaya, T., &Yuspriyati, D. (2018). Analisis Kemampuan Komunikasi Matematis Siswa Kelas VIII Pada Materi Himpunan. *Journal Cendekia: Jurnal Pendidikan Matematika , 1*(1), 15–22.

Aprisal, A., & Abadi, A. M. (2018). Mathematical communication ability of students viewed from self-efficacy. *International Conference on Mathematical and Science Education of Universitas Pendidikan Indonesia*, *3*. 726-732. http://science.conference.upi.edu/proceeding/index.php/ICMScE/issue/view/3|ICMScE2018

Fonna, M., & Mursalin, M. (2018). RoleofSelf-EfficacyTowardStudents' Achievement in MathematicalMultipleRepresentationAbility (MMRA). *Jurnal Ilmiah Peuradeun*, *6*(1), 31–40. https://doi.org/10.26811/peuradeun.v6i1.174

Hanipah, H., & Sumartini, T. S. (2021). Perbandingan Kemampuan Komunikasi Matematis Siswa antara Problem Based Learning Dan Direct Instruction. *Plusminus: Jurnal Pendidikan Matematika*, *1*(1), 83–96. https://doi.org/10.31980/PLUSMINUS.V1I1.1028

Hendriana, H., & Kadarisma, G. (2019). Self-Efficacy dan Kemampuan Komunikasi Matematis Siswa SMP. *JNPM (Jurnal Nasional Pendidikan Matematika)*, *3*(1), 153–164. https://doi.org/10.33603/jnpm.v3i1.2033

Hidayati, Abidin, Z., & Ansari, B. I. (2020). Improving students' mathematical communication skills and learning interest through problem based learning model. *Journal of Physics: Conference Series*, *1460*(1). 1-6 https://doi.org/10.1088/1742-6596/1460/1/012047

Kamid, Rusdi, M., Fitaloka, O., Basuki, F. R., & Anwar, K. (2020). Mathematical communication skills based on cognitive styles and gender. *International Journal of Evaluation and Research in Education*, *9*(4), 847–856. https://doi.org/10.11591/IJERE.V9I4.20497

Parmawati, A., & Santoso, I. (2021). Analysis Of Students Response Toward The Implementation Of Round Table Technique In Writing For General Communication Course. *Jurnal Pendidikan Edutama*, *8*(1), 51-56. http://ejurnal.ikippgribojonegoro.ac.id/index.php/JPE

Rapsanjani, D. M., &Sritresna, T. (2021). Kemampuan Komunikasi Matematis Ditinjau dari Self-Efficacy Siswa. *Plusminus: Jurnal Pendidikan Matematika*, *1*(3), 481–492. https://doi.org/10.31980/PLUSMINUS.V1I3.1453

Surya, E., Syahputra, E., & Juniati, N. (2018)*"Effectof Problem Based Learning Toward Mathamatical Communication Ability and Self-regulated Learning". Journal of Education and Practice.* 9(6), 14-23. www.iiste.org

Wardono, Rochmad, Uswatun, K., & Mariani, S. (2020). Comparison between generative learning and discovery learning in improving written mathematical communication ability. *International Journal of Instruction*, *13*(3), 729–744. https://doi.org/10.29333/iji.2020.13349a

Yaniawati, R. P., Indrawan, R., & Setiawan, G. (2019). Core model on improving mathematical communication and connection, analysis of students' mathematical disposition. *International Journal of Instruction*, *12*(4), 639–654. https://doi.org/10.29333/IJI.2019.12441A