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ANALYSIS OF JUNIOR HIGH SCHOOL STUDENTS' MATHEMATICAL THINKING DISPOSITION BASED ON GENDER DIFFERENCES

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ABSTRACT

Data from the Indonesian Ministry of Education shows that the number of female teachers currently exceeds male, even at the junior high school level in Tasikmalaya the ratio is almost 2:1. Another fact is that applicants for mathematics teacher candidates at Faculty of Teacher Training and Education are dominated by women, for example at Siliwangi University the ratio of female to male mathematics teacher candidates has currently reached 4:1. It is also strongly suspected that since high school, mathematics enthusiasts have been dominated by women. This gap raises suspicions that there are differences in students' perceptions of mathematics learning based on gender identity and mathematical disposition. Students at a junior high school in Tasikmalaya Regency were taken as research subjects. The research method used was descriptive qualitative by distributing questionnaires and conducting in-depth interviews with teachers and students. The research results show that female students have stronger characters than male students. Based on the indicators of mathematical thinking disposition, the highest gap between female and male students appears in the aspects of persistence and monitoring tendency.

Data Kementerian Pendidikan Indonesia menunjukan jumlah guru perempuan saat ini lebih banyak dibandingkan laki-laki, bahkan untuk jenjang SMP di Tasikmalaya rasionya hampir mencapai 2:1. Fakta lain, peminat calon guru matematika di LPTK lebih didominasi perempuan, misalnya saja di Universitas Siliwangi rasio calon guru matematika perempuan terhadap laki-laki saat ini mencapai 4:1. Juga diduga kuat sejak di bangku SMA, para penyuka matematika lebih didominasi perempuan. Kesenjangan ini menimbulkan dugaan adanya perbedaan persepsi siswa terhadap pembelajaran matematika berdasarkan identitas gender dan disposisi matematika. Para siswa di sebuah SMP di Kabupaten Tasikmalaya diambil sebagai subjek penelitian. Metode penelitian yang digunakan adalah deskriptif kualitatif dengan menyebarkan kuesioner dan melakukan wawancara mendalam kepada guru dan siswa. Hasil penelitian menunjukkan bahwa siswa perempuan mempunyai watak yang lebih kuat dibandingkan siswa laki-laki. Berdasarkan indikator disposisi berpikir matematis, kesenjangan tertinggi antara siswa perempuan dan laki-laki tampak pada aspek ketekunan dan kecenderungan memantau.

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1. INTRODUCTION

Mathematics is a very important subject. This is implied by the government that mathematics is a compulsory subject in schools from elementary schools to tertiary institutions. Mathematics has a very important role in daily life, one of the examples is the calculation of buying and selling transactions in the market. Mathematics is used from simple things to very complex things. According to the MKPBM team (MZ, 2013). Stating that mathematics is one of the lessons taught at school, aims to help students prepare themselves to be able to deal with changing circumstances in life and in a constantly developing world, through the practice of acting based on logical, rational, and critical thinking (Encar et al., 2023).

The fact that is happening now, there are still many people who view mathematics as a subject that is very boring and creepy, where some students still have a negative impression of mathematics (Sudarman, 2012). Even if students have a negative impression of mathematics, of course this will affect the process and results of their work. There are several reasons that are often submitted related to students' fear in learning mathematics, including because mathematics is in the form of theory and abstract, many formulas, the contents are only calculations, the influence of general perception, the existence of a killer teacher, mathematics is only for clever children, children who able to compete (Sriyanto, 2007).

Based on the results of researchers' interviews with one of the eighth grade mathematics teachers in SMPN 2 Manonjaya, Tasikmalaya Regency, it was revealed that during the mathematics teaching and learning process students often shifted their focus to their respective activities so that they caused a little noise and eliminated the concentration of learning and then influenced the situation. learning, with the noise it creates a situation that is less conducive and results in other students lacking concentration. This sometimes causes the teacher to give advice mixed approaches emotionally and deliver moral messages in the midst of learning, so that student learning outcomes are not optimal.

At present many factors are used to determine students' perceptions of mathematics learning, some of which are gender differences and mathematical dispositions. According to Nurmasari et al (Anggoro, 2016), Gender differences are differences in roles, functions, and responsibilities between men and women which are the result of social construction and can change according to the times. Keitel (1998) stated "Gender, social, and cultural dimensions are very powerfully interacting in conceptualization of mathematics education,.." (Keitel, 2001). Based on Keitel's opinion that gender, social and culture influence mathematics learning. Some research results show that male students are more interested in mathematics compared to female students, so female students are more anxious in dealing with mathematics compared to male students (MZ, 2013). Therefore the gender aspect needs to be of particular concern in learning mathematics. In other words, a pleasant change in the mathematics learning process pays attention to aspects of gender

differences so that male and female students are no longer afraid or anxious in mathematics.

Anxiety in learning mathematics will not occur if students have a strong desire and confidence in learning mathematics. Learning mathematics is not only limited to developing cognitive domains alone, there is a tendency of curiosity, tenacious, confident, reflecting on the way a student thinks in solving mathematical problems. This is called mathematical disposition. According to NCTM (Sumarmo, 2013) defines mathematical disposition as a person's connection and appreciation of mathematics, in a broader sense, mathematical disposition is not only an attitude but also a tendency to think and act positively. Confidence and a sense of self are capable of being a positive attitude that is an important part of learning. Confidence reflects how a person thinks about something, while a positive attitude is shown with a passion for learning, being attentive. While negative attitudes are shown with dislike, not interested, not interested, and anxious about mathematics. Mathematical disposition is said to be good if students like problems that are challenges and involve themselves directly in finding or solving problems.

Gender can be interpreted as differences in the roles, functions, status, values, behavior and responsibilities of men and women because of socio-culture that is embedded through the process of socialization from one generation to the next and can change according to the times. Mathematical learning is the formation of a mindset in understanding an understanding and in reasoning a relationship between those notions. In learning mathematics, students are accustomed to gain understanding through experience of the properties possessed and those not possessed from a group of objects.

Mathematical Disposition is a form of character that grows in students after experiencing mathematics learning, namely the desire, awareness, tendencies and strong dedication to students to think and do mathematically. Indicators of mathematical disposition, namely: (1) Confidence in using mathematics, solving problems, giving reasons and communicating ideas, (2) Flexibility in investigating mathematical ideas and trying to find alternative methods of solving problems, (3) Being diligent in doing mathematical tasks, (4) interest, curiosity, and meeting ability in doing mathematical tasks, (5) tend to monitor, reflect on their own performance and reasoning, (6) assess the application of mathematics to other situations in mathematics and everyday experiences, appreciation of the role of mathematics in culture and values, mathematics as a tool, and as a language.

Gender comes from the Latin word "genus", meaning type or type. According to MZ (2013, p. 16) "gender is a trait and behavior that is attached to men and women who are formed socially and culturally". According to Tangkudung (2014, p. 3), "gender is the difference in opportunities, roles and responsibilities between men and women as a result of social construction in family and community life". The term gender is often identified with gender, even though gender is different from gender. Gender is often also understood as a divine nature, but gender is not solely so. Neufeldt (ed.) Tangkudung (2014, p. 3) suggesting "the word" gender "can be interpreted as a visible difference between men and women in terms of values and behavior". Gender can be interpreted as differences in the roles, functions, status and responsibilities of men and women as a result of socio-culture embedded through the process of socialization from one generation to the next. The role of the environment in gender development is very strong, it is not possible that gender differences are only based on biological factors. Upton argued that gender in social characteristics and characteristics is not only based on biological differences but also on social and cultural interpretations (Upton-Davis, 2012).

According to Keitel, gender is one of the dimensions that influences the conceptualization process in mathematics education (Keitel, 1998). This is in line with Meece & Scantlebury's opinion that experts generally agree that learning outcomes caused by gender differences are the result of gender bias in the home and school environment (Meece & Scantlebury, 2006). Differences in treatment of men and women at home and school have a major influence on their identity and academic development. According to Linn & Hyde (Santrock, 2011), "Boys are better at measurements, science and sports; girls are better at calculations related to women's traditional tasks, such as cooking and sewing.

Elliot et. al (2017) summarized gender differences in terms of the nature of the characteristics which are as follows:

Tabel 1. Gender Differences in Some Characteristic Properties

Characteristics	Differences in Gender
Physical difference	Although most women become adults faster than men, when adults are bigger and stronger than women
Verbal ability	Women are better at using language. Men find many problems in the use of language
Spatial skills	Men are better at spatial analysis, and will continue to be seen throughout school
Mathematical ability	There was more difference in the first year of high school, men were better than women
Achievement motivation	The difference here is related to the task and situation. Men are better at tasks that look masculine like mathematics and science, while women are better at tasks that are feminine like art and music. But in direct competition between men and women, when they begin to enter adulthood, women's motivation to get achievements decreases

Source: Elliot et. al. (2017)

According to Sadker&Ellen (2017), several factors can influence gender differences in class: (1) In many classes, teachers observe and interact more with male students, while female students learn and play alone. Most teachers inadvertently help more male students by spending more time with them, (2) Male students ask for more attention; therefore, teachers observe and interact more with male students while women tend to be quiet and wait for their turn, (3) le students get more orders than female students.

Based on some of the notions that have been put forward, it can be concluded that gender can be interpreted as differences in roles, functions, status, values, behavior and responsibilities of men and women as a result of socio-culture embedded through the process of socialization from one generation to the next and can be change according to the times. Mathematical learning is the formation of a mindset in understanding an understanding and in reasoning a relationship between those notions. In learning mathematics, students are accustomed to gain understanding through experience of the properties possessed and those not possessed from a collection of objects (abstractions). Students are given the experience of using mathematics as a tool to understand or convey information, for example through equations, or tables in mathematical models that are simplifications of story problems or other mathematical description questions.

National Council of Teachers of Mathematics recommended four principles of mathematics learning, namely mathematics as problem solving; Mathematics as reasoning; Mathematics as communication; and Mathematics as relationships. Mathematics needs to be given to students to equip them with the ability to think logically, analysis, systematically, critically, and creatively as well as the ability to work together (Thoyibi & Sangco, 2023). Content standards and graduate competency standards according to the Ministry of National Education (Rustina, 2014) mentioned the provision of mathematics subjects aimed at making students have the following abilities: (1) Understanding mathematical concepts, explaining the interrelationships between, and applying concepts or logarithms in a flexible, accurate, efficient, and appropriate manner in problem solving,

(2) Using reasoning on patterns and traits, doing mathematical manipulation in generalizing, compiling evidence, or explaining mathematical ideas and statements, (3) Solve problems that include the ability to understand problems, design mathematical models, solve models, and interpret the solutions obtained, (4) Communicate ideas with symbols, tables, diagrams, or other media to explain the situation or problem, (5) Having the nature of appreciating the usefulness of mathematics in life, namely: having curiosity, attention, and being ready to be tenacious and confident in problem solving.

Mathematics learning is the process of providing learning experiences to students through a series of planned activities so that students gain competence about the mathematical material being studied. Based on the explanation above, it can be concluded that learning mathematics is a learning and teaching activity that studies mathematics with the aim of building mathematical knowledge so that it is useful and able to practice the results of learning mathematics in everyday life.

NCTM (Sumarmo, 2013) defines mathematical disposition as a person's connection and appreciation of mathematics. In a broader sense, mathematical disposition is not only an attitude but also a tendency to think and act positively. Confidence and a sense of self are capable of being a positive attitude that is an important part of learning. Confidence reflects how a person thinks about something, while a positive attitude is shown with a passion for learning, being attentive. While negative attitudes are shown with dislike, not interested, not interested, and anxious about mathematics.

Mathematical disposition is said to be good if students like problems that are challenges and involve themselves directly in finding or solving problems. besides that students feel themselves experiencing a learning process when completing these challenges. In the process students feel the emergence of self-confidence, appreciation and awareness to look back on the results of thinking. To measure students' mathematical disposition required several indicators stated by Polking (1998) include (1) Confidence in using mathematics, solving problems, giving reasons and communicating ideas, (2) Flexibility in investigating mathematical ideas and trying to find alternative methods for solving problems, (3) Diligent in doing mathematical tasks, (4) Interest, curiosity, and meeting ability in doing mathematical tasks, (5) Tends to monitor, reflect on their own Performance and reasoning, (6) Assess the application of mathematics to other situations in mathematics and everyday experiences, (7) Appreciate the role of mathematics in culture and values, mathematics as a tool, and as a language. Anggoro (2016) stated that the disposition of high mathematical creative thinking and positive perceptions is very influential on mathematics learning, because students who have high DBKM and positive perceptions will be better at learning mathematics than students who have DBKM and perceptions other than that towards mathematics learning. While research conducted by Dilla et al (2018) states that gender differences and resilience influence the achievement of students' mathematical creative thinking abilities.

2. METHOD

This research is a qualitative study, which seeks to find the meaning or nature behind the symptoms that occur in research subjects. According to Arikunto "the research method is the method used by researchers in gathering research data" (Arikunto, 2006, p. 203). This research used descriptive method with a qualitative approach. Russefendi states "descriptive research is research that uses observations, interviews, or questionnaires about the present situation, regarding the subject we are studying" (Ruseffendi, 2005, p. 33). Descriptive method aims to describe the gender perspective in mathematics learning in terms of mathematical disposition.

2.1. Research Subject

This research was conducted in the eighth grade of junior high school, the students of class VIII junior high school were chosen because the students were at the middle level, so they were able to express their perspectives in mathematics learning in terms of mathematical disposition.

2.2. Data Collecting

Research data collection is done by providing a mathematical disposition questionnaire. The results of the questionnaire were used as a basis for conducting interviews. To get an overview of Gender Perspectives in Mathematics Learning in terms of Mathematical Disposition. Furthermore, the results of the questionnaire and verbal data (data from interviews) collected were then assessed for accuracy or consistency. If there is inconsistent data, interviews are conducted again so that the data are obtained according to the research questions.

2.3. Data Analysis

The main instrument in this study is the researcher himself, because at the time of data collection in the field the researcher acts as a data collector during the research process, namely the questionnaire and interview guidelines. Interview guidelines used in this study were compiled by researchers themselves based on the objectives to be achieved, namely a gender perspective in mathematics learning in terms of mathematical disposition. In this study, data analysis is carried out during and after the data collection process, with the intention that the data obtained can be arranged systematically and is easier to interpret.

3. RESULT AND DISCUSSION

3.1. Result

This mathematical disposition questionnaire refers to Polking (1998) is measured based on 7 indicators which include confidence, flexibility, diligence, interest, tendency monitoring, assessing math application, and appreciation.

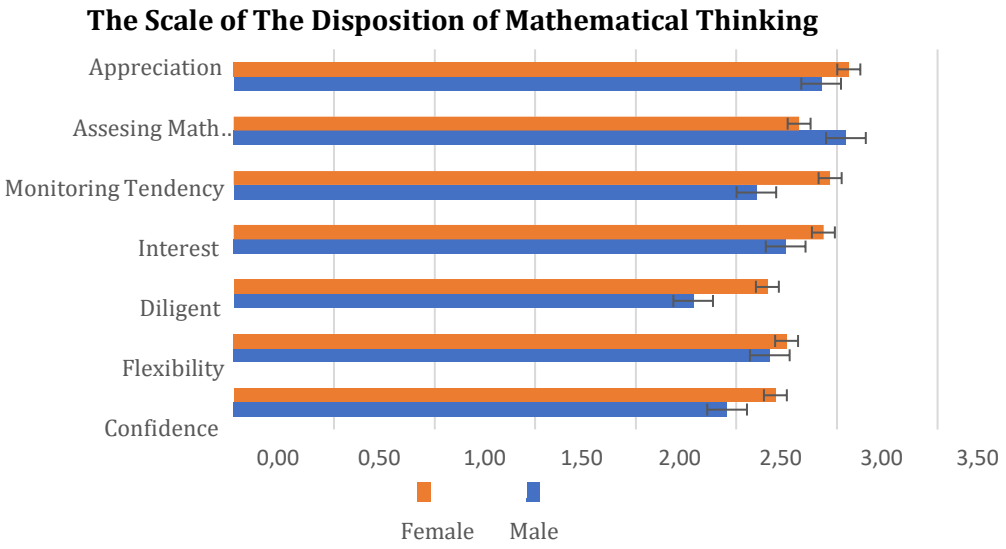

Figure 1. Indicators of Students' Mathematical Thinking Disposition

After passing the test, it was declared valid to be used and had a strong degree of reliability, the questionnaire was distributed to respondents as many as 23 grade VIII junior high school students consisting of 12 female students and 11 male students. It has also been identified that respondents' learning outcomes are spread over high, medium, and low mathematical abilities that are checked based on student report cards and the mathematics teacher's judgment. In addition, respondents have been determined to be willing to fill respondents honestly and without coercion.

Based on figure 1, almost all indicators of the mathematical thinking disposition of female students are higher than male students, except for the assessing math application indicator. The authors conducted interviews with the mathematics teacher at the school.

A : What do you think of the mathematical thinking disposition of female and male students in your class?

T : We observe that some of the top students here are boys but most of them do not meet expectations. This is in accordance with some indicators of their disposition, their self-confidence is high, also diligent, high curiosity, always curious but most of them are not like that. So, if averaged female students have a better mathematical thinking disposition. Their confidence, diligence, and curiosity tend to be the same for each other.

A : In what ways do all male students look superior to women?

T : When studying mathematics with computers and studying mathematics outside the classroom.

The interviews have validated the results of research on the position of mathematical thinking that male students understand mathematical applications more than female students.

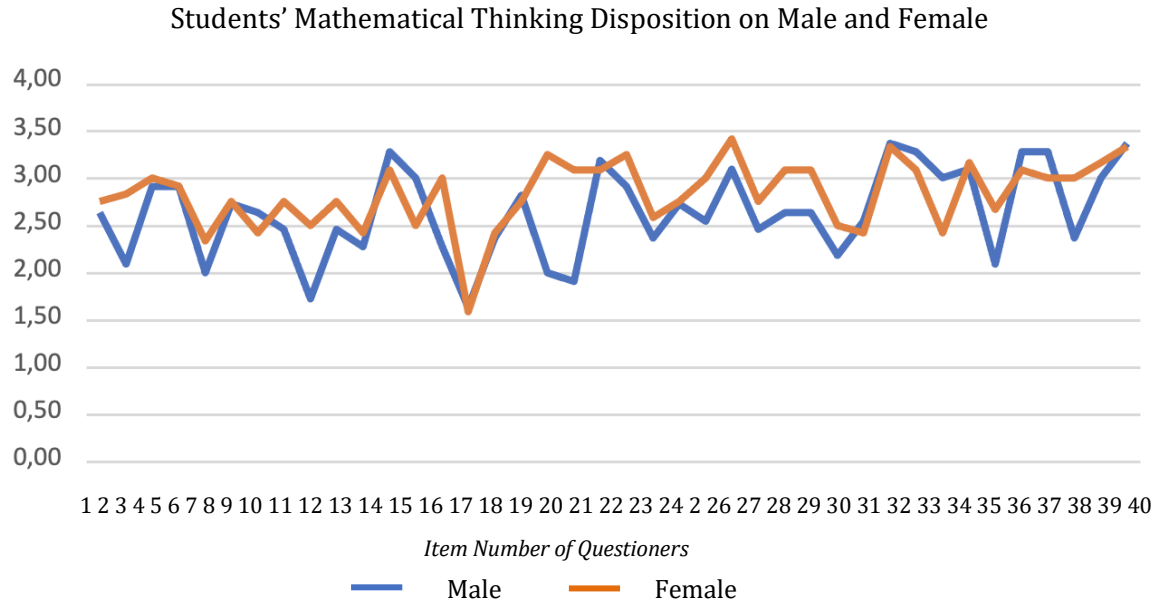

Figure 2. Student's Mathematical Thinking Disposition

Figure 2 shows that the mathematical thinking disposition of female students is higher than that of male students. Exceptions occur in item (13) male students tend to write more answer ideas before they work on math problems formally; item (20) male students are more skeptical about the usefulness of learning mathematics; item (30) male students are more aware of the usefulness of mathematics in everyday life; item (31) male students believe that mathematics can help solve everyday problems; items (32) and (33) male students are more aware that mathematics has many applications in other fields such as (economics, medicine and technology); item (36) male students believe that learning

mathematics can practice critical thinking skills; item (37) male students are more amenable to the use of projectors when presentations can reduce technological stuttering; and item (40) male students prefer math problems related to daily life.

3.2. Discussion

There are seven indicators that measure mathematical disposition in this research. Each indicator can be explained as follows:

Table 2. Questioners Item of Indicator of Mathematical Thinking Disposition: Confidence

Item Number of Questioner	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Male (m)	2.64	2.09	2.91	2.91	2.00	2.73	2.64	2.45	1.73
Female (f)	2.75	2.83	3.00	2.92	2.33	2.75	2.42	2.75	2.50
Difference: $\frac{\lvert m-f\rvert}{4} \times 100\%$	2.84%	18.56%	2.27%	0.19%	8.33%	0.57%	5.49%	7.39%	19.32%

Note: minimum scale (0) and maximum scale (4) for *(m) and (f)*

Table 2 illustrates the confidence of female and male students in learning mathematics and solving math problems. Item number (1) illustrates that male students' anxiety is higher than that of girls. Item number (2) illustrates that female students prefer story problems. Item number (3) illustrates that female students prefer to think for themselves first before choosing discussion. Item number (4) illustrates the tendency of male and female students to answer the teacher's questions equally. Item number (5) illustrates that female students are more optimistic in working on math problems. Item number (6) illustrates the courage of male and female students in rebutting when discussions tend to be the same. Item number (7) describes male students who are more willing to represent the group in presentations or discussions. Item number (8) illustrates that the confidence of female students is higher when discussing in groups. Item number (9) describes female students more actively asking questions when having difficulty understanding the material.

Table 3. Questioners Item of Indicator of Mathematical Thinking Disposition: Flexibility

Item Number of Qeustioner	(10)	(11)	(12)
Male (m)	2.45	2.27	3.27
Female (f)	2.75	2.42	3.08
Difference: $\frac{\lvert m-f\rvert}{4} \times 100\%$	7.39%	3.60%	4.73%

Note: minimum scale (0) and maximum scale (4) for *(m) and (f)*

Table 3 illustrates the flexibility in learning mathematics which includes searching for mathematical ideas and trying to share alternative mathematical problem solving. Item number (10) illustrates the tendency of female students to use religious source books to solve problems more actively than male students. Item numbers (11) and (12) describe female students who tend to solve problems through multiple solutions.

Table 4. Questioners Item of Indicator of Mathematical Thinking Disposition: Diligent

Item Number of Qeustioner	13	14	15	16	17	18	19
Male (m)	3.00	2.27	1.64	2.36	2.82	2.00	1.91
Female (f)	2.50	3.00	1.58	2.42	2.75	3.25	3.08
Difference: $\frac{\lvert m-f \rvert}{4} \times 100\%$	12.50%	18.18%	1.33%	1.33%	1.70%	31.25%	29.36%

Note: minimum scale (0) and maximum scale (4) for *(m) and (f)*

Table 4 illustrates the persistence and tenacity of students in doing math tasks. Item number (13) illustrates that male students tend to write more answer ideas before they work on math problems formally. Item number (14) describes female students more diligently doing homework at home. Item number (15) illustrates that female students are more likely to directly choose discussions with peers when experiencing difficulties in mathematical problems. Item number (16) depicts male students becoming more desperate when stuck in math problems, while female students choose to discuss. Item number (17) illustrates that male students prefer to work on math problems that are available in the worksheet. Item number (18) describes male students who are more individualistic in group discussions when working on math problems. Item number (19) illustrates that in working groups female students prefer to carry their original ideas rather than copying other groups.

Table 5. Questioners Item of Indicator of Mathematical Thinking Disposition: Interest

Item Number of Qeustioner	20	21	22	23	24
Male (m)	3.18	2.91	2.36	2.73	2.55
Female (f)	3.08	3.25	2.58	2.75	3.00
Difference: $\frac{\lvert m-f \rvert}{4} \times 100\%$	2.46%	8.52%	5.49%	0.57%	11.36%

Note: minimum scale (0) and maximum scale (4) for *(m) and (f)*

Table 5 illustrates students' interest and curiosity in learning mathematics. Item number (20) describes male students who are more skeptical about knowing the usefulness of learning mathematics. Item number (21) - (23) illustrates that female students are more interested than men in looking for additional learning resources. Item number (24) describes female students more interested in learning new material.

Table 6. Questioners Item of Indicator of Mathematical Thinking Disposition: Monitoring Tendency

Item Number of Qeustioner	25	26	27	28	29
Male (m)	3.09	2.45	2.64	2.64	2.18
Female (f)	3.42	2.75	3.08	3.08	2.50
Difference: $\frac{\lvert m-f \rvert}{4} \times 100\%$	8.14%	7.39%	11.17%	11.17%	7.95%

Note: minimum scale (0) and maximum scale (4) for *(m) and (f)*

Table 6 illustrates how students reflect their own ways of thinking and performance in learning mathematics. Item numbers (25) and (26) describe female students who tend to reread the summary of material they write. Item number (27) illustrates that female students tend to be motivated to reflect on what they have written and understood. Item

number (28) illustrates that female students are more interested in linking material that has been studied with previous material. Item number (29) depicts male students more lazy to meet with story problems.

Table 7. Questioners Item of Indicator of Mathematical Thinking Disposition: Assesing Mathematics Applications

Item Number of Qeustioner	30	31	32	33
Male (m)	2.55	3.36	3.27	3.00
Female (f)	2.42	3.33	3.08	2.45
Difference: $\frac{\lvert m-f \rvert}{4} \times 100\%$	3.22%	0.76%	4.73%	13.64%

Note: minimum scale (0) and maximum scale (4) for *(m) and (f)*

Table 7 illustrates how students appreciate the application of mathematics in other fields and everyday life. Item number (30) illustrates male students more aware of the usefulness of mathematics in everyday life. Item number (31) illustrates male students who believe that mathematics can help solve everyday problems. Item numbers (32) and (33) describe male students more aware that mathematics has many applications in other fields such as (economics, medicine, and technology).

Table 8. Questioners Item of Indicator of Mathematical Thinking Disposition: Appreciation

Item Number of Qeustioner	34	35	36	37	38	39	40
Male (m)	3.09	2.09	3.27	3.27	2.36	3.00	3.36
Female (f)	3.17	2.67	3.08	3.00	3.00	3.17	3.33
Difference: $\frac{\lvert m-f \rvert}{4} \times 100\%$	1.89%	14.39%	4.73%	6.82%	15.91%	4.17%	0.76%

Note: minimum scale (0) and maximum scale (4) for *(m) and (f)*

Table 8 illustrates how students appreciate the role of mathematics lessons in everyday fields. Item numbers (34) and (38) illustrate that female students are more confident that students who are proficient in mathematics tend to be more successful in other subjects. Item numbers (35) and (39) illustrate that male students believe that discussion in mathematics is not related to discussion skills in other subjects. Item number (36) illustrates male students who believe that learning mathematics can practice critical thinking skills. Item number (37) depicts male students more agreeing to use a projector when presentations can reduce technological stuttering. Item number (40) depicts male students prefer math problems related to daily life.

4. CONCLUSION

The results showed that female students had stronger dispositions than male students. Of the seven indicators of mathematical thinking disposition, the highest gap between female and male students appears in the aspects of perseverance and the tendency to monitor.

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REFERENCES

Anggoro, B. S. (2016). Analisis Persepsi Siswa SMP terhadap Pembelajaran Matematika Ditinjau dari Perbedaan Gender dan Disposisi Berpikir Kreatif Matematis. *Al-Jabar*, *7*(2), 153–166. https://doi.org/10.24042/ajpm.v7i2.30

Arikunto, S. (2006). *Prosedur Penelitian: Suatu Pendekatan Praktik*. Rineka Cipta.

Dilla, S. C., Hidayat, W., & Rohaeti, E. E. (2018). Faktor Gender dan Resiliensi dalam Pencapaian Kemampuan Berpikir Kreatif Matematis Siswa SMA. *Journal of Medives*, *2*(1), 129–136. https://doi.org/https://doi.org/10.31331/medives.v2i1.553

Elliot, A. J., Heffner, K. L., & Chapman, B. P. (2017). Social Relationships and Inflammatory Markers in the MIDUS Cohort: The Role of Age and Gender Differences. *Journal of Aging and Health*, *30*(6), 1–20. https://doi.org/https://doi.org/10.1177/0898264317698551

Encar, E., Sulastri, Y. L., Nurmaulani, A., & Kosasih, U. (2023). Kemampuan Berpikir Kreatif Matematis Serta Aktivitas Belajar pada Pembelajaran Segitiga dan Segiempat Melalui Pogil. *Journal of Authentic Research on Mathematics Education*, *5*(2), 127–142. https://doi.org/https://doi.org/ 10.37058/jarme. v5i2.6950

Keitel, C. (1998). Social Justice and Mathematics Education: Gender, Class, Ethnicity and The Politics of Schooling. In *International Organisation of Women and Mathematics Education (IOWME)*. Freie Universität.

Keitel, C. (2001). Social Justice and Mathematics Education Gender, Class, Ethnicity and The Politics of Schooling. *ZDM*, *33*(6), 187–191.

Meece, J. L., & Scantlebury, K. (2006). Gender and Schooling: Progress and Persistent Barriers. In *Handbook of Girls' and Women's Psychological Health* (pp. 283–291).

MZ, Z. A. (2013). Perspektif Gender dalam Pembelajaran Matematika. *Marwah: Jurnal Perempuan, Agama, Dan Jender*, *12*(1), 14–31. https://doi.org/DOI: http://dx.doi.org/10.24014/marwah.v12i1.511

Polking, J. (1998). *Response To NCTM's Round 4 Questions*.

Ruseffendi, E. T. (2005). *Dasar-dasar Penelitian Pendidikan dan Bidang Non-Eksakta Lainnya*. Tarsito.

Rustina, R. (2014). Pengaruh Penggunaan Pembelajaran Kontekstual Dengan Teknik SQ4R Terhadap Peningkatan Kemampuan Pemahaman Dan Berpikir Kritis Matematis Siswa SMP Negeri 8 Kota Tasikmalaya. *Jurnal Pendidikan Dan Keguruan*, *1*(1).

Sadker, D. M., & Ellen, S. S. (2017). *Gender in The Classroom: Foundations, Skills, Methods, and Strategies Across The Curriculum*. Psychology Press.

Santrock, J. W. (2011). Educational psychology. In *The Social Science Encyclopedia* (5th ed.). McGraw-Hill. https://doi.org/10.15864/ijelts.5102

Sriyanto, H. J. (2007). *Strategi Sukses Menguasai Matematika*. Penerbit Indonesia.

Sudarman, B. (2012). Adversity Quotient: Kajian Kemungkinan Pengintegrasiannya dalam Pembelajaran Matematika. *AKSIOMA*, *1*(1), 3–11.

Sumarmo, U. (2013). *Berpikir dan Disposisi Matematik Serta Pembelajarannya*. UPI.

Tangkudung, J. P. M. (2014). Proses Adaptasi Menurut Jenis Kelamin dalam Menunjang Studi Mahasiswa FISIP Universitas Sam Ratulangi. *Journal Acta Diurna*, *3*(4), 1–11. https://ejournal.unsrat.ac.id/index.php/actadiurnakomunikasi/article/view/6225

Thoyibi, A. I., & Sangco, R. P. (2023). Effect of Mathematical Disposition on Students' Mathematical Creative Thinking Abilities in Class XI. *International Journal of Research in Mathematics Education*, *1*(2), 175–186. https://doi.org/10.24090/ijrme.v1i2.9773

Upton-Davis, K. (2012). Living Apart Together Relationships (LAT): Severing Intimacy from Obligation. *Gender Issues*, *29*(1–4), 25–38. https://doi.org/10.1007/s12147-012-9110-2