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ANALYSIS OF LEARNING MOTIVATION AND SELF-CONFIDENCE IN MATHEMATICS LEARNING AMONG ELEMENTARY SCHOOL STUDENTS IN BOGOR REGENCY

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ABSTRACT

Learning motivation and self-confidence are crucial qualities that students must possess as they serve as capital for effective learning, particularly in Mathematics. This research aims to analyze the learning motivation and self-confidence of Elementary School students in Mathematics. The research population includes 54 individuals, comprising fourth and sixth-grade students of SDN Tegal 02, Kemang District, Bogor Regency. This research employed a descriptive quantitative approach and used a questionnaire as the research instrument. Descriptive quantitative analysis was conducted for data analysis. The results indicate that the learning motivation and self-confidence of SDN Tegal 02 students in mathematics fall within the moderate criteria, with 50% for learning motivation and 87% for self-confidence. In terms of learning motivation, the only moderate indicator is a conducive learning environment, with a percentage of 62.96%. Regarding self-confidence, five out of six indicators are in the moderate criteria, particularly in independence, with a percentage of 81.5%. These indicators highlight the significance of the teacher's role in creating a conducive learning environment and using appropriate models to enhance students' learning motivation and self-confidence in mathematics education. In SDN Tegal 02, Bogor Regency, female students tend to have higher motivation and confidence than male students. However, both male and female students with high motivation levels also exhibit high self-confidence, as do those with moderate and low motivation levels.

Keywords : Analysis, Learning Motivation, Self-confidence, Mathematics

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PRELIMINARY

Learning is dependent on motivation. Students need motivation to establish and reinforce new information in their memory (Amir & Risnawati, 2015). Motivation is a crucial factor that encourages students to persist in the learning process, while self-confidence provides additional support. The desire to learn and achieve academic goals is the key to success in comprehending and absorbing lesson materials (Frick, 2019). Motivation plays a crucial role in assisting students in reaching their full potential in learning. On the other hand, self-confidence is crucial for expressing oneself, particularly in the context of learning (Everaert et al., 2017). The level of self-confidence significantly

influences the success of the learning process. Students with high self-confidence tend to believe strongly in continuing their efforts to develop their full potential, as reflected in their achievements. Conversely, students who lack self-confidence may not have fully explored their talents, interests, and potential, leading them to adopt a passive attitude (Komara, 2016).

Students' motivation to learn and their self-confidence play an important role in achieving good learning outcomes (Wu et al., 2024). When students have high motivation to learn, they are enthusiastic about the learning process. When this motivation is supported by strong self-confidence, the learning outcomes achieved will be optimal. Pupils' motivation and self-confidence play a crucial role in their participation in all subjects in primary school, especially in mathematics (Garon-Carrier et al., 2016).

Mathematics is one of the most important disciplines for learning. This is due to the fact that mathematical knowledge or logical-mathematical intelligence is explicitly linked to numerical skills used in everyday life (Nurilla, 2022). In addition, strong motivation to learn is particularly necessary in mathematics due to its abstract, axiomatic and deductive nature (Radišić & Baucal, 2024).

The presence of abstract concepts can pose challenges for students in understanding the material, leading to a loss of enthusiasm for learning. This indicates a lack of motivation and self-confidence in students to learn. It is known that students' confidence and motivation to learn are mutually influential in improving their learning outcomes (Wahono et al., 2020). Therefore, it is important for students to have strong self-confidence and learning motivation so that they remain motivated in their studies and do not doubt their abilities, which ultimately leads to good learning outcomes (Umifaiqoh, 2020).

Students need strong motivation to help them make connections between these concepts and the real world. When students feel motivated, they become more active in class, apply mathematical concepts to everyday problem solving, and seek deeper understanding (Zajda, 2018). Motivation also plays a crucial role in encouraging students to seek additional help when they encounter difficulties in mathematics. They tend to look for extra resources, such as teachers, classmates or additional study materials, to help them overcome challenges. Strong motivation also helps students to remain resilient and not give up when faced with difficult mathematical concepts. With motivation, students feel more confident about doing mathematics (Liu & Hou, 2017). With supportive instructional environments, students’ self-confidence can enhance, they tend to feel capable and secure in tackling concepts that may be considered difficult or abstract in mathematics. Students

who are confident in their ability to understand and solve mathematical problems are more motivated to learn. They believe that they can overcome difficulties and find solutions, which supports their motivation to continue learning (Ryan & Deci, 2020). They see mistakes as a natural part of learning and as opportunities to grow and improve their understanding. The confidence gained through success in mathematics also helps students to build the basic mathematical skills they need. The more successful they are, the greater their confidence and the more motivated they are to develop more complex mathematical skills (León et al., 2014).

The term "motivation" comes from the word "motive". According to Puwanto as cited in Rumhadi (2017), a motive is "anything that causes someone to act". Motive is the factor that pushes and drives the subject from within to engage in certain activities to achieve goals. Considering this concept of 'motive', motivation can be defined as an active driving force that influences the subject's actions. In the context of teaching and learning activities, motivation plays a crucial role, influencing both teachers and students in their efforts to achieve better learning outcomes (Wahyuni et al., 2017).

There are two types of motivation: intrinsic motivation and extrinsic motivation. Djamarah (2015) argues that intrinsic motivation is an active drive or function without the need for external stimuli, because every individual has an internal motivation or drive to perform an action. (Amir & Risnawati, 2015) further explains that intrinsic motivation refers to the internal drive to do something because of the value or satisfaction derived from the action itself. For example, a student who studies hard because he or she enjoys the material and wants to understand it well. Intrinsically motivated students tend to engage in an activity because it is fun, develops skills they consider important, or is ethically and morally right. Students with high intrinsic motivation will concentrate fully on the activity without worrying too much about time or neglecting other tasks. Woolfolk (2019) also emphasise that intrinsic motivation stems from internal factors such as interest, need, satisfaction and curiosity.

Extrinsic motivation refers to the drive that drives an individual to perform an action in order to obtain something external to the action itself (Fischer et al., 2019). Extrinsic motivation is often influenced by external incentives such as rewards or sanctions. For example, a student may study hard for an exam in the hope of getting a good grade in the subject. Students' extrinsic motivation is related to external factors that are not directly related to the task at hand, such as the desire for high grades, financial rewards or recognition for specific achievements (Ryan & Deci, 2020). Essentially, they are motivated to perform a

certain action as a means to achieve another goal, not because the action itself is the direct goal, such as understanding the material or subject being studied. Furthermore, according to Simanjuntak as cited in Santana et al. (2018), extrinsic motivation factors come from outside the child, including family, school, and community influences. Extrinsic motivation plays an important role in teaching and learning activities because this motivation arises due to learning activities that are initiated and continued based on external stimuli that are not necessarily related to the learning activities, making it easier for learners to achieve their goals in improving good learning outcomes (Herawati et al., 2023).

Furthermore, Uno (2016) mentions indicators of learning motivation, which the researcher then distinguishes based on intrinsic and extrinsic aspects of motivation, as follows.

Table 1. Indicators of Learning Motivation

No.	Aspects	Indicators
1.	Intrinsic Motivation	a. The presence of passion and the desire to succeed
		b. The drive and need to learn
		c. Hopes and aspirations for the future
2.	Extrinsic Motivation	a. Recognition in learning
		b. Engaging activities in learning
		c. Conducive learning environment

Self-confidence is important in developing individuals with characteristics of excellence. Self-confidence plays a crucial role in personal development, decision-making, and achievement (Oney & Oksuzoglu-Guven, 2015).

Lauster (2015) formulated several aspects that serve as characteristics and indicators of self-confidence, namely:

1. Individuals feel strong in their actions. This is based on a belief in the strength, abilities and skills they possess. They feel optimistic, have sufficient ambition, do not always need help from others, are able to work hard, can complete tasks effectively and take responsibility for decisions and actions.
2. Individuals feel accepted by their group. This is based on a belief in their ability to relate socially. They feel that their group, or others like them, actively engage with the social environment, courageously and responsibly express their wishes or ideas, and do not prioritise themselves.
3. Individuals have a calm demeanour. This is based on a belief in their strength and abilities. They maintain a calm attitude, are not easily upset and are tolerant of different situations.

Indicators of self-confidence, as explained above, are listed in Table 2 below.

Table 2. Self-Confidence Indicators

No.	Aspect	Indicators
1.	Strong Desire	a. Optimistic b. Independent c. Hardworking
2.	Accepted Feeling	a. Actively facing environmental situations b. Courageously expressing wishes/ideas
3.	Possessing Calm Demeanor	Calm

Students' self-confidence plays a crucial role in the mathematics learning process, which requires attention in order to achieve optimal learning outcomes. Self-confidence serves as a primary driver for positive interactions in the classroom environment during mathematics learning (Rustan & Bahru, 2018). This perspective is consistent with the views of Malinda & Minarti (2018), who express that self-confidence is key to students' success in their pursuit of understanding mathematics.

Based on the perspectives of both researchers, conducting research and analysis on the influence of self-belief on mathematics learning outcomes becomes an important aspect. Prior to this, a full understanding of self-confidence in the context of mathematics learning is necessary. Self-confidence refers to an individual's belief in his or her abilities (Lone, 2021). Adalikwu, as cited in Kanza (2016), offered a different perspective on self-confidence, defining it as the belief in one's ability to succeed at a task, influenced by past performances of similar tasks. Therefore, students who possess self-confidence in their abilities, regardless of their previous experiences, are more likely to achieve success in their learning.

Students with high self-confidence are more motivated and, conversely, motivated students are more likely to develop self-confidence. Research on students' learning motivation in mathematics was conducted by Hasnah et al. (2022), who found that the learning motivation of fourth, fifth and sixth grade students at UPT SD Negeri 5 Arawa in mathematics fell into the moderate category with a percentage of 60.9%. The level of students' learning success can be seen from their learning motivation. Students with high motivation are expected to achieve good and optimal learning outcomes. Therefore, students should be highly motivated to learn the subjects they are studying, especially in mathematics. In a study by Irman et al. (2022), which specifically examined the relationship between self-confidence and mathematics learning outcomes in fourth grade, it was found that students' mathematics learning outcomes would be lower if their level of self-confidence was low, and

conversely, if students had high self-confidence, their mathematics learning outcomes would be higher.

Given the importance of students' motivation and self-confidence in learning mathematics, this research aims to analyze these factors among fourth and fifth-grade students at SDN Tegal 02 in Kemang District, Bogor Regency. The study seeks to understand how motivated and self-confident these students are in their mathematics learning. Additionally, the research aims to compare the levels of motivation and self-confidence between male and female students to identify any significant differences or patterns based on gender. By addressing these objectives, the study hopes to provide insights into the role of motivation and self-confidence in students' mathematical learning experiences.

METHODS

This research adopts a quantitative descriptive research design. The primary aim of descriptive studies is to observe and describe events, conditions, and individuals as they naturally occur (Siedlecki, 2020). In such studies, researchers do not manipulate or control any variables; instead, they focus on accurately depicting the characteristics of the variables or the sample being studied (Aggarwal & Ranganathan, 2019). This approach is to measure and describe the levels of motivation and self-confidence among the students.

The study was conducted from 30 May 2023 to 31 May 2023 during the second semester of the academic year 2022/2023 at SDN Tegal 02, located in Tegal Village, Kemang District, Bogor Regency, West Java. Data were collected using questionnaires, a data collection method that involves a set of written questions or statements provided to respondents for written responses. Questionnaires are an efficient data collection method when the researcher has a clear understanding of the variables to be measured and the expectations of the respondents. Questionnaires can take the form of closed-ended or open-ended questions and can be administered directly to respondents or distributed through various means, including mail or the Internet (Sugiyono, 2021). In this study, the questionnaire was given at the end.

Descriptive analysis was used to identify events associated with the target responses. This analysis is often used as part of a comprehensive assessment of problematic behaviours prior to experimental functional analysis. Descriptive analysis is used to describe or depict the research variables, namely learning motivation and self-confidence levels at SDN Tegal 02, Bogor Regency.

The instruments, consisting of motivation and self-confidence questionnaires, took the form of closed-ended written statements that were administered directly to 33 fourth grade and 21 fifth grade students at SDN Tegal 02 in Kecamatan Kemang, Kabupaten Bogor. The motivation questionnaire consisted of 25 statements, while the self-confidence questionnaire consisted of 30 statements, each with Likert scale response options. The researcher used a Likert scale based on Sugiyono (2021), who explained that the Likert scale is used to measure attitudes, opinions, and perceptions of individuals or groups about social phenomena. The items in this study were divided into positive and negative items, each with its own scoring criteria.

Table 3. Likert Scale

Answer Alternatives	Positive	Negative
Strongly Agree	5	1
Agree	4	2
Undecided/Neutral	3	3
Disagree	2	4
Strongly Disagree	1	5

The analysis of learning motivation data involves calculating the range and intervals for categorizing student motivation levels based on their responses to a series of statements. Here, students had five choices per statement (presumably on a Likert scale from 1 to 5) and responded to 25 statements. The minimum possible score is calculated by multiplying the lowest choice (1) by the number of statements (25), resulting in a minimum score of 25. Similarly, the maximum possible score is found by multiplying the highest choice (5) by the number of statements, yielding a maximum score of 125. To categorize the motivation levels into three distinct criteria (high, mediocre, low), the range of possible scores (100) is divided by the number of criteria (3). This calculation results in an interval of 33.3. Therefore, as shown in Table 4 below, scores can be segmented into three intervals: 25 to 58.3 (low), 58.4 to 91.6 (mediocre), and 91.7 to 125 (high), which helps in evaluating and interpreting students' learning motivation based on their total scores.

The analysis of self-confidence data aims to categorize students' self-confidence levels based on their responses to a series of statements. Each student responds to 30 statements with five choices per statement (likely on a Likert scale from 1 to 5). The minimum score a student can achieve is calculated by multiplying the lowest choice (1) by the number of statements (30), resulting in a minimum score of 30. Conversely, the maximum score is determined by multiplying the highest choice (5) by the number of

statements, yielding a maximum score of 150. To classify the self-confidence levels into three categories (high, mediocre, low), the range of possible scores (150 – 30 = 120) is divided by the number of criteria (3), giving an interval of 40. Therefore, as shown in Table 5 below, the scores can be divided into three intervals: 30 to 69 (low), 70 to 109 (mediocre), and 110 to 150 (high). This categorization helps in evaluating and interpreting the students' self-confidence levels based on their total scores.

Then, using the same method, the indicators for each variable of learning motivation and self-confidence are analysed.

RESULT AND DISCUSSION

Research Instrument Test

Validity test was used to test the validity of the questionnaire used by researcher. The validity test for the variable Learning Motivation and Self-Confidence of students in mathematics learning with the amount of data (N) = 54 and a significance value of 5% or 0.05 which is shown in table 4.

Table 4. Validity Test

	Learning Motivation		**Self-Confidence**	
Pearson Correlation	1	0,924	1	0,794
Sig. (2-tailed)		0,000		0,000
N	54	54	54	54
Pearson Correlation	0,924	1	0,794	1
Sig. (2-tailed)	0,000		0,000	
N	54	54	54	54

To test the validity of the questionnaire instruments for learning motivation and self-confidence in mathematics learning, the questionnaire scores were correlated with midterm exam scores. Based on the validity test results of the learning motivation and self-confidence questionnaires in mathematics learning, as shown in Table 3.5, the correlation between learning motivation scores and midterm exam scores was 0.65 with a significance value of 0.000, while the correlation for the self-confidence questionnaire was also 0.65 with a significance value of 0.000. Each correlation is significantly below the alpha score of 0.05. Thus, it can be concluded that the developed mathematical reasoning ability instruments are valid and can be used.

Reliability testing uses Cronbach’s Alpha. Table 5 shows the reliability results of the questionnaire instruments for learning motivation and self-confidence in mathematics learning.

Table 5. Reability Test

	Learning Motivation	Self-Confidence
Cronbach's Alpha	0,859	0,715

Table 5 shows a Cronbach's Alpha value of 0,859 was obtained for learning motivation and 0.715 for self-confidence, indicating that the questionnaire instruments for learning motivation and self-confidence in mathematics learning have good reliability.

Result

The data obtained from the research location which includes learning motivation and self-confidence in mathematics learning at SDN Tegal 02 Bogor Regency is then described as follows.

Table 6. Descriptive Statistics of Learning Motivation and Self Confidence in Mathematics Learning

	N	Minimum	Maximum	Mean	Std. Deviation
Learning Motivation	54	58	118	89,67	14,366
Self-Confidence	54	72	124	98,037	11,945

Based on Tabel 6, the descriptive statistics for learning motivation indicate that the scores range from a minimum of 58 to a maximum of 118. The average score is 89.67, with a standard deviation of 14.366. This suggests that there is some variability in the learning motivation scores among the participants, but the scores are relatively centered around the mean. Meanwhile, for self-confidence, the scores range from a minimum of 72 to a maximum of 124. The average score is slightly higher at 98.037, with a smaller standard deviation of 11.945. This indicates that the self-confidence scores are somewhat more consistent and less spread out compared to the learning motivation scores.

The participants' learning motivation scores show moderate variability. The mean score of 89.67 suggests that on average, the students have a reasonably high level of motivation, but the standard deviation indicates a diverse range of motivation levels among the students. The self-confidence scores show less variability, with the mean score being 98.037. This indicates that, on average, students feel fairly confident in their mathematics learning, and there is less variation in self-confidence levels among them compared to learning motivation.

Each of variable, namely learning motivation and self-confidence in learning mathematics is then describe as follow.

Learning Motivation

Table 7. Frequency Distribution of Learning Motivation of Students of SDN Tegal 02 in Mathematics Learning

Score	Criteria	Frequency	Percentage
91,7 – 125	High	26	48,1%
58,4 – 91,6	Moderate	27	50%
25 – 58,3	Low	1	1,9%
	Total	54	100%

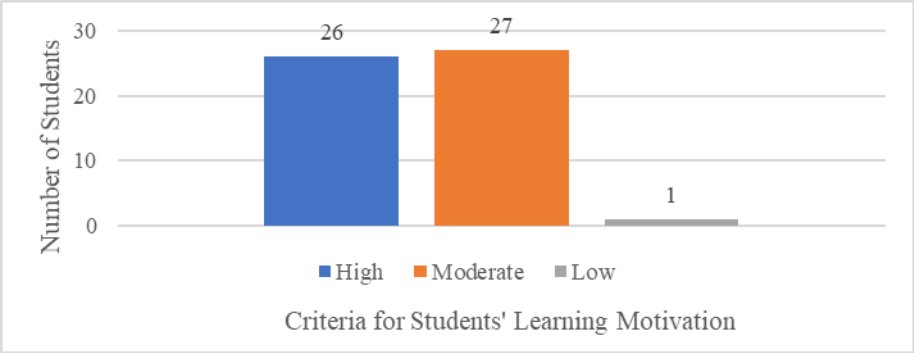

Figure 1. Frequency Distribution of Student Learning Motivation at SDN Tegal 02 in Mathematics Learning

Based on the Table 7 and Figure 1, it can be seen that there are 26 students (48.1%) with high motivation to learn, followed by 27 students (50%)with moderate motivation to learn and 1 student (1.9%)with low motivation to learn. This indicates that the majority of 4th and 5th grade students in SDN Tegal 02 have moderate learning motivation, while almost all of the remaining students have high learning motivation. This is in line with the researcher's expected findings.

Based on the recapitulation of the results of the learning motivation analysis, it is also found that the average score of the students with high scores are female students. The following are the results of the learning motivation analysis based on gender.

Table 8. Frequency of Student Learning Motivation at SDN Tegal 02 Based on Gender

Score	Criteria	Male Students		Female Students	
		f	%	*f*	%
91,7 – 125	High	4	16,66%	21	70%
58,4 – 91,6	Moderate	19	79,17%	8	26,7%
25 – 58,3	Low	1	4,17 %	1	3,3%
	Total	24	100%	30	100%

Based on Table 8, it shows that the majority of male students have moderate learning motivation, while female students have high learning motivation. Next, to understand how students' learning motivation in the context of mathematics learning at SDN Tegal 02, Bogor Regency. Various indicators were identified to provide an overview of learning motivation and the research findings will explain these aspects as follows.

1. Instrinsic Learning Motivations

This section will describes characteristic of instrinsic motivations indicators among students at SDN Tegal 02. Each indicators describe in the table and figure below.

Table 9. Frequency and Percentage of Instrinsic Learning Motivation Indicators

Indicator	Presence of Desire and Willingness to Succeed		Motivation and Needs in Learning		Hopes and Aspirations for the Future	
Criteria	***f***	**%**	***f***	**%**	***f***	**%**
High	28	51,9%	29	53,7%	28	51,9%
Moderate	23	42,6%	25	49,3%	20	37%
Low	3	5,5%	0	0%	6	11,1%
Total	54	100%	54	100%	54	100%

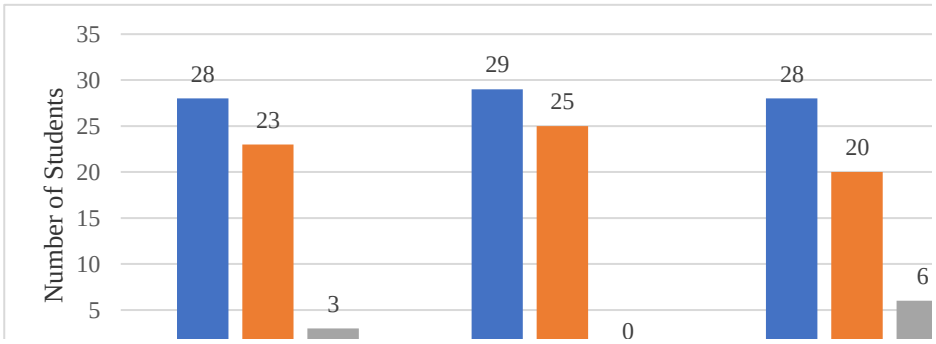

Figure 2. Frequency Distribution of Intrinsic Learning Motivation at SDN Tegal 02 in Mathematics Learning

Table 9 and Figure 2 shows that 28 students (51,9%) are in high levels, meanwhile 23 students (41,6%) are in moderate levels, and 3 students (5,5%) have low desire and willingness to succed in mathematics learning. Meanwhile for motivation and needs in learning indicator shows 29 students (53.7%) have high levels of motivation and learning needs, 25 students (49.3%) have moderate levels and no students (0%) have low levels. Furthermore, students' hopes and aspirations for the future indicator show that 28 students (51.9%) fall into the high criteria, 20 students (37%) fall into the moderate criteria, and 6 students (11.1%) fall into the low criteria.

2. Extrinsic Motivations

This section will describes characteristic of exstrinsic motivations indicators among students at SDN Tegal 02. Each indicators describe in the table below.

Table 10. Frequency and Percentage of Extrinsic Learning Motivations

Indicator	Recognition in Learning		Engaging Learning Activities		Conducive Learning Environment	
Criteria	***f***	**%**	***f***	**%**	***f***	**%**
High	35	64,8%	24	44,4%	11	20,37%
Moderate	18	33,3%	21	38,9%	34	62,96%
Low	1	1,9%	9	16,7%	9	16,67%
Total	54	100%	54	100%	54	100%

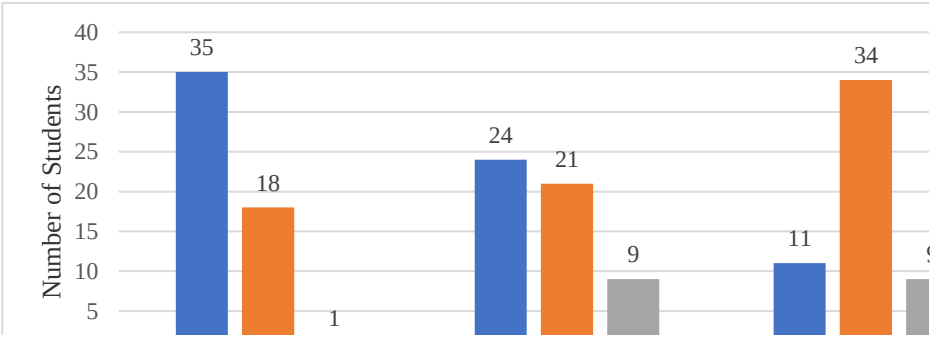

Figure 3. Frequency Distribution of Intrinsic Learning Motivation at SDN Tegal 02 in Mathematics Learning

Based on Table 10 and Figure 3 above, the students' perceived recognition in learning indicator shows that 35 students (64.8%) fall into the high criteria, 18 students (33.3%) fall into the moderate criteria and 1 student (1.9%) falls into the low criteria. For engaging learning activites, 24 students (44.4%) in the high criteria, 21 students (38.8%) in the moderate criteria and 9 students (16.7%) in the low criteria. Finally 11 students (20.37%) perceive a conducive learning environment for learning mathematics in the high criteria, followed by 34 students (62.96%) in the moderate criteria and 9 students (16.67%) in the low criteria.

Self-Confidence

The results of analysing students' confidence in learning mathematics are presented in the following table and figure.

Table 11. Frequency Distribution of Self-Confidence of SDN Tegal 02 Students in Mathematics Learning

Score	Criteria	Frequency	Percentage
110– 150	High	10	18,5%
70 – 109	Moderate	44	81,5%
30 – 69	Low	0	0%
	Total	54	100%

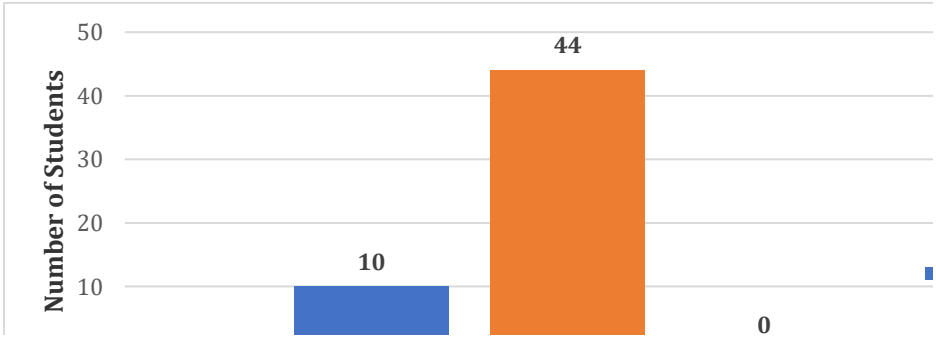

Figure 4. Frequency of Self-Confidence of SDN Tegal 02 Students in Mathematics Learning

Based on Table 11 and Figure 4, 10 students (18,5%) fall into the high criteria, 44 students (81,5%) into the moderate criteria and no students (0%) into the low criteria.

Similar to learning motivation, the recapitulation of the results of the analysis of self-confidence shows that, on average, students with high scores are female. Below is the analysis of self-confidence by gender.

Table 12. Frequency of Self-Confidence of SDN Tegal 02 Students Based on Gender

Score	Criteria	Siswa Laki-laki		Siswa Perempuan	
		Frequency	Percentage	Frequency	Percentage
93 – 125	High	6	20%	1	4,2%
60 – 92	Moderate	24	80%	23	95,8%
27 – 59	Low	0	0%	0	0%
	Total	30	100%	30	100%

From Table 12 it can be seen that the self-confidence of female students is mostly in the moderate criteria, while the rest have high self-confidence. On the other hand, almost all male students are in the moderate criteria.

Afterwards, each indicator from each aspect of the confidence variable is presented to give a summary of the confidence level of students in SDN Tegal 02, Bogor Regency.

1. Strong Desire

This section will describes characteristic of strong desire aspect among students at SDN Tegal 02. Each indicators describe in the table and figure below.

Table 13. Frequency and Percentage of Instrinsic Learning Motivation Indicators

Indicator	Optimistic		Independent		Hard Work	
Criteria	*f*	%	*f*	%	*f*	%
High	16	29,6%	8	14,8%	28	51,8%
Moderate	36	66,7%	44	81,5%	21	38,9%
Low	2	3,7%	2	3,7%	5	9,3%
Total	54	100%	54	100%	54	100%

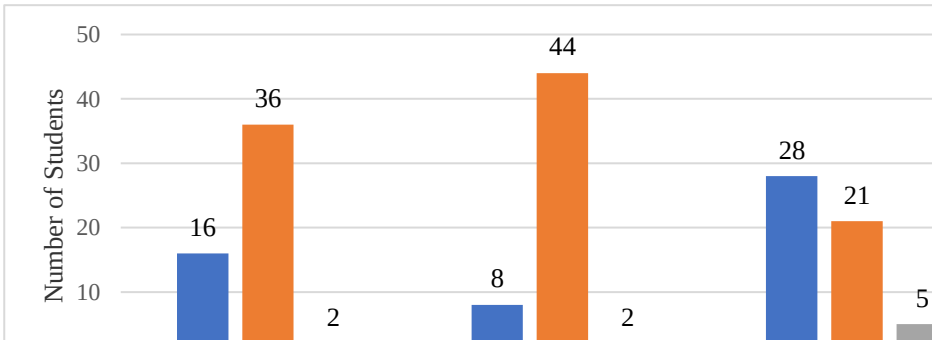

Figure 5. Frequency Distribution of Strong Desire Aspect of Self-Confidence at SDN Tegal 02 in Mathematics Learning

Table 13 and Figure 5 shows that students feel optimistic about learning mathematics, with 16 students (29.6%) in the high criteria, 36 students (66.7%) in the medium criteria and 2 students (3.7%) in the low criteria. Next, the students' independence in learning mathematics is achieved by 8 students (14.8%) in the high criteria, 17 students

(81.5%) in the medium criteria and 2 students (3.7%) in the low criteria. Finally, work hard indicator show a total of 28 students (51.8%) in the high criteria, 21 students (38.9%) in the medium criteria and 5 students (9.3%) in the low criteria.

2. Accepted Feeling

This section will describes characteristic of accepted feelling aspect among students at SDN Tegal 02. Each indicators describe in the table and figure below.

Table 14. Frequency and Percentage of Accepted Feeling of Self-Confidence Indicators

Indicator	Actively Facing Environmental Situations		Courageously expressing wishes/ideas	
Criteria	***f***	**%**	***f***	**%**
High	14	25,9%	4	7,4%
Moderate	32	59,3%	38	70,4%
Low	8	14,8%	12	22,2%
Total	54	100%	54	100%

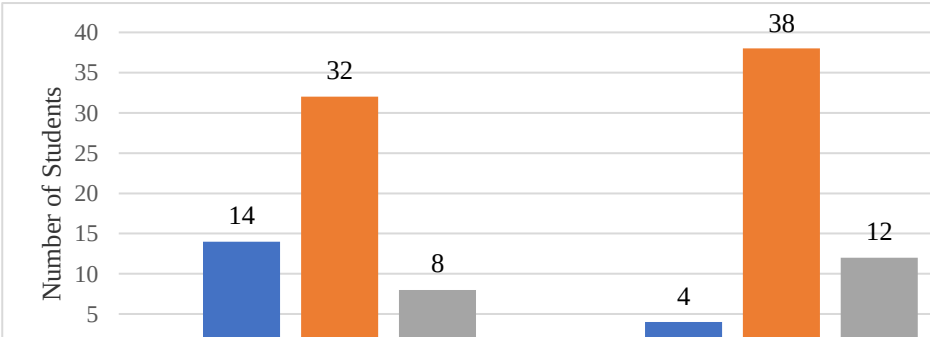

Figure 6. Frequency Distribution of Accepted Feeling Aspect of Self-Confidence at SDN Tegal 02 in Mathematics Learning

Table 14 and Figure 6 shows that 14 students (25.9%) in the high criteria, 32 students (59.3%) in the medium criteria and 8 students (14.8%) in the low criteria are actively confronted with the environmental conditions when learning mathematics. Regarding the courage to express ideas or wishes indicator, there are 4 students (7.4%) in the high criteria, 38 students (70.4%) in the medium criteria and 12 students (22.2%) in the low criteria.

3. Possessing Calm Demeanor

This section will describes characteristic of possesing calm demeanor among students at SDN Tegal 02 in the table and figure below.

Table 15. Frequency of Calmness Indicator

Score	Criteria	Frequency	Percentage
15 – 20	High	12	22,2%
9 – 14	Moderate	36	66,7%
3 – 8	Low	6	11,1%
	Total	54	100%

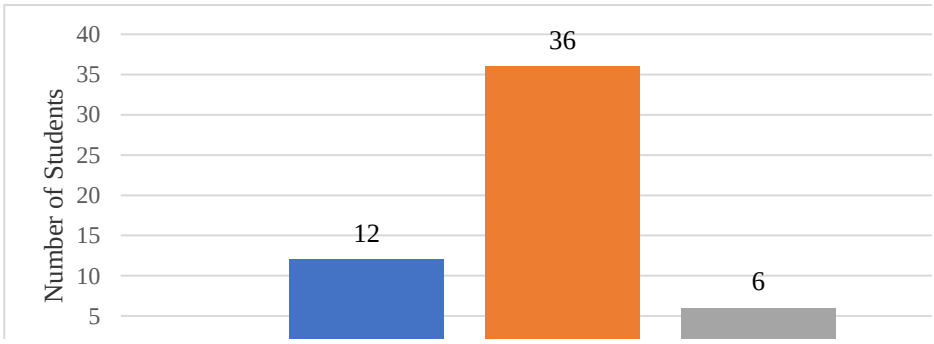

Figure 7. Frequency Distribution of Possesing Calm Demeanor Aspect of Self-Confidence at SDN Tegal 02 in Mathematics Learning

Based on Table 15 and Figure 7 above, students' calmness in learning mathematics is obtained with 12 students (22.2%) in the high criteria, 36 students (66.7%) in the moderate criteria, and 6 students (14.8%) in the low criteria.

Based on the analysis of students' learning motivation and self-confidence in learning mathematics, there is a tendency that students with high learning motivation also have high self-confidence, as well as students with moderate and low learning motivation. The researcher selected 3 male and 3 female students who obtained the highest, moderate and lowest scores, which are presented in the following Table 16.

Table 16. Correlation Between Learing Motivation and Self-Confidence in Male and Female Students

Student Code	Score of Leaning Motivation	Score of Self-Confidence	Criteria
M8	109	113	High
F4	118	124	High
M24	89	93	Moderate
F9	91	94	Moderate
M2	69	72	Low
F3	58	75	Low

The selection of these six students is purely to demonstrate that the level of motivation to learn influences or correlates with self-confidence in both male and female students.

Learning Motivation Discussion

Based on the analysis results, the learning motivation of SDN Tegal 02 students in Bogor Regency is in the moderate criteria. In Table 6 and Figure 1, out of 54 students, 27 students (50%) are in the moderate criteria, 26 students (48.1%) are in the high criteria, and 1 student (1.9%) is in the low criteria. It can be seen that the number of students with high and moderate motivation to learn is almost the same, with only a difference of 1 student. This difference is due to the different levels of learning motivation between male and

female students, as can be seen in Table 7, where most male students show moderate learning motivation, while most female students show high learning motivation.

Furthermore, from the analysis of learning motivation indicators for students in mathematics at SDN Tegal 02, Bogor Regency, out of 54 students, there are 28 students (51.85%) with high criteria for the indicator of desire and willingness to succeed, 29 students (53.7%) with high criteria for the indicator of encouragement and needs in learning, 28 students (51. 9%) with high criteria for the indicator of hopes and aspirations for the future, 35 students (64.8%) with high criteria for the indicator of appreciation in learning, 24 students (44.4%) with high criteria for the indicator of interesting learning activities and 34 students (62.96%) with moderate criteria for the indicator of a conducive learning environment.

For the indicator of the desire to succeed, the highest score is for the statement "I spend time at home studying mathematics", which indicates the students' efforts to engage effectively in mathematics learning. Next, for the indicator of encouragement and needs in learning, most students report that they listen well to the teacher's explanations when learning mathematics. For the indicator of hopes and aspirations for the future, most students want to excel in mathematics as a moral responsibility to their parents. For the indicator of appreciation in learning, praise and encouragement from peers and teachers make them want to work successfully on mathematics problems. Furthermore, in the indicator of engaging activities in learning, some students state that they have difficulty understanding the teacher's explanations, resulting in a lack of concentration and quick boredom in learning mathematics (Pertiwi, 2021). In the indicator of a conducive learning environment, most students feel sleepy when the teacher explains mathematical material, and they feel bored and reluctant to actively participate due to low interest in learning mathematics (Kavinji, 2021).

Self-Confidence Discussion

The analysis of students' self-confidence in Table 13 and Figure 2 shows that out of 54 students, 7 students (13%) are in the moderate criteria, 47 students (87%) are in the high criteria and no students (0%) are in the low criteria. The analysis of the self-confidence indicators shows that 5 out of 6 indicators are in the high criteria, except for the hard work indicator which is in the moderate criteria.

Next, the comparison of self-confidence between male and female students shows that almost all male students (95.8%) are in the moderate criteria, while female students

(80%) are in the moderate criteria, with the rest having high self-confidence in learning mathematics.

The results of the self-confidence analysis on the optimism indicator show that 36 students (66.7%) are in the moderate category. Furthermore, in the indicator of bold expression of ideas/will (Table 19), 38 students (70.4%) are in the moderate category. Then, in the self-reliance indicator, 44 students (81.5%) are in the moderate category. Some students are reluctant to ask the teacher when they have difficulties in learning mathematics; therefore, they try to work on it independently or seek help from friends (Farhan & Jumardi, 2023). Both of these indicators are related to maintaining a calm attitude in learning mathematics. Table 20 shows that 12 students (22.2%) are in the high category, 36 students (66.7%) are in the moderate category and 6 students (11.1%) are in the low category. In terms of maintaining a calm attitude, most students exhibit behaviours such as difficulty concentrating, making decisions, and a tendency to feel drowsy. This includes feelings of nervousness, anxiety, tension, fear and lack of confidence in the results of mathematical work, remaining silent during mathematical learning and efforts to avoid when the lesson begins (Lailiyah et al., 2021), (Yuberta et al., 2020).

The indicator of students' effort in mathematics learning is in the high criteria with 28 students (51.8%). Some students try to work as hard as they can, even when they face difficulties. Furthermore, on the indicator of daring to express ideas/will (Table 19), 38 students (70.4%) are in the medium criteria. The students say that they are often afraid to try to answer the teacher's questions because they are afraid of rejection or ridicule from their peers. This is also found by Rahman et al. (2022) where students feel pessimistic about what they believe in.

Students' Learning Motivation and Self-Confidence in Mathematics

Based on the questionnaire results in Table 21, students with high learning motivation tend to have self-confidence and achieve good results in academic performance (Rahman, S., 2021). However, students' self-confidence does not necessarily correspond to their learning motivation level. This suggests that students with good ability to learn mathematics do not necessarily have high self-confidence.

Students with high motivation to learn can be identified by their diligence in completing tasks, their perseverance in overcoming difficulties, and their interest and independence in learning. Therefore, students with high learning motivation tend not to procrastinate in completing tasks, which ultimately affects the achievement of learning goals (Nitami et al., 2015).

Based on the above discussion, in students' learning motivation, the indicator of conducive learning environment is perceived by students as lacking, while a supportive learning environment is crucial for learning mathematics, as this subject is an essential foundation with applications closely related to everyday life, especially in the fields of science and technology. Although mathematics is constantly evolving with the progress of science and technology, negative community perceptions of mathematics, such as the belief that understanding mathematics requires a high level of intelligence, can hinder motivation to learn, especially for those who feel less confident. Therefore, in order to improve the mathematics learning process, it is important to create a conducive learning environment, which includes establishing a safe and pressure-free environment in schools where rewards and punishments should not be used as tools in the mathematics learning process (Amir & Risnawati, 2015). In addition to a conducive environment, one way to stimulate students' interest and motivation to learn is through the use of games in the classroom (Nathaniel, 2023).

The results of students' self-confidence at SDN Tegal 02 show that most students still tend to rely on teacher or peer support and are afraid to express ideas or opinions. Some students are unwilling and afraid to answer questions. However, self-confidence is an important aspect that students need to have in order to interact effectively with their peers. According to Burn by having self-confidence, students are more likely to realise their potential, which leads to better performance (Oktapiani, 2019). Therefore, building confidence in individual potential needs to be emphasised so that students feel more comfortable to actively participate in the learning process and have more confidence in their abilities rather than relying on others.

Based on the above explanation, a learning process needs to be designed that can stimulate students' learning motivation and self-confidence by optimising the learning environment. In this regard, the role of the teacher is crucial in creating a learning climate that is relaxed, comfortable and interactive. According to Morony et.al., through such an atmosphere, comfort and interactivity are expected to emerge, building children's confidence in their ability to understand mathematics, so that children feel that mathematics is not difficult (Faturohman et al., 2022). With strong motivation, mathematics can become a popular subject without being overly burdensome. Furthermore, it is important to communicate with students about topics that are interesting and match their interests, allowing their brains to think actively and stimulating the pursuit of things

they enjoy. In addition, explanations of the benefits of the subjects studied need to be provided, tailored to the individual interests of the students.

CONCLUSION

Based on the research results, the learning motivation and self-confidence of the students at SDN Tegal 02 in learning mathematics are in the moderate criteria, with a percentage of 50% for learning motivation and 87% for self-confidence. In terms of learning motivation, the only conducive learning environment indicator is in the moderate criteria with a percentage of 62.96%. Regarding self-confidence, five out of six indicators are in the moderate criteria, especially in independence with a percentage of 81.5%. Both indicators highlight the importance of the teacher's role in creating a conducive learning environment and using appropriate models to increase students' motivation to learn and confidence in learning mathematics. Female students at SDN Tegal 02 in Bogor tend to have higher motivation and self-confidence than male students, but they show a similar trend where students with high motivation also have high self-confidence, as well as those with moderate and low motivation.

Based on the conclusion that the students at SDN Tegal 02 have moderate levels of learning motivation and self-confidence in mathematics, several recommendations can be made to enhance these aspects: 1) enhance learning environment: create a supportive classroom atmosphere and encourage collaboration among students; 2) effective teaching strategies: use interactive and student-centered methods, and differentiate instruction to meet diverse learning needs; 3) build motivation and self-confidence: set achievable goals and provide constructive feedback to help students view mistakes as learning opportunities; 4) gender-specific support: address the specific needs of both genders, providing additional support to male students to boost their motivation and confidence; 5) teacher development: professional development for teachers on effective teaching strategies and creating supportive learning environments; 6) parental involvement: encourage parents to support their children's learning at home and stay engaged with their academic progress, and 7) further research: to use the findings to develop and test new models and interventions aimed at increasing student motivation and self-confidence in various educational settings.

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