SELF-REGULATION, Emotional Intelligence, and Mathematics Achievement of Junior High School STUDENTS

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ABSTRACT

This study aimed to determine whether self-regulation and emotional intelligence predict the mathematics achievement of Grade 8 students. Using adapted questionnaires, the researcher assessed the self-regulation level, emotional intelligence level, and mathematics achievement level of the students. A quantitative design using the descriptive correlation method was utilized in the research. Data were gathered from Grade 8 students at selected secondary public schools in Davao City, Philippines. These data were analyzed using the mean, standard deviation, and linear regression analysis. The results showed that both the level of self-regulation and the level of emotional intelligence of the students was very high, while the mathematics achievement of the students was high. Both self-regulation and emotional intelligence among students exhibit a positive correlation with mathematical achievement. Moreover, the self-regulation and emotional intelligence of students yielded a significant relationship to the mathematics achievement of students. Additionally, the mathematics achievement of Grade 8 students was significantly influenced by the self-regulation and emotional intelligence of students.

KEYWORDS: *Education, mathematics, self-regulation, emotional intelligence, mathematics achievement, descriptive-correlation, Philippines*

INTRODUCTION

In shaping students' future success, mathematics plays a crucial role in all career pathways (NCTM, 2014). The National Council of Teachers of Mathematics (NCTM) has emphasized how crucial Mathematics is in nurturing

students' critical thinking, and problem-solving abilities and setting up for their success in college and future careers. Yet, even though math plays a vital role in our modern and tech-driven world, many students find math tough to excel in this subject. In the Programme for International Student Assessment (PISA) 2018 assessment, there were 79 countries participated in the evaluation. Out of those, 50 countries managed to obtain the mean score ranging from 336 to 487. The scores were lowered to the average score of 489 points achieved by the Organization for Economic Co-operation and Development (OECD) countries (OECD, 2019). There was 26 percent of Grade 8 American Graders who were proficient in Mathematics based on the National Assessment of Education Progress (NAEP) 2022. This concerns a strong grasp of the subject which is essential for their success in various academic and professional fields. Regardless of solving equations, it's cognitive reflection and intellectual capabilities (NAEP, 2022).

Similarly, in Fiji, despite massive investments in education and the important role that mathematics plays in society, there has been a continuous trend of poor achievement in mathematics, especially in the years 12 and 13 grades of secondary schools as shown in the 2019 national examination results of FY12CE with 16 percent of students passing the exam and FY13CE with 11 percent of students passing in the exam (Chand et al., 2021). Additionally, in Thailand, the average O-Net scores of ninth graders and twelfth graders in the 2019 academic year were below 50 percent and consistently showed mathematics as the lowest among four subjects namely: English, Math, Science, and Thai language. Ninth graders got the average math score of 26.7 percent and the twelfth graders got the math score of 25.4 percent (Mala, 2021). Further, in Malaysia, the study conducted by Murugan and Rajoo (2014) revealed that the mathematics achievement of secondary school students was generally poor, with females outperforming males by obtaining a mean score of 48 percent compared to 39 percent.

Furthermore, the findings indicated that 40.4 percent of the students failed the achievement test, scoring between zero percent and 39 percent, while only 5.6 percent achieved a grade of 75 percent to 100 percent.

On one hand, low mathematics achievement levels are a significant issue in the Philippines, as shown by the consistently low mean percentage scores on the National Achievement Test (NAT) (Department of Education, 2018). Further, DepEd (2018) reported that the mean percentage scores of students in the

National Achievement Test for mathematics have consistently been below 50 percent for the past several years. In PISA 2018, the academic performance of fifteen-year-old Filipino students performed less in reading, mathematics, and science than those in most of the countries and economies that participated in PISA 2018. The Philippines is the lowest among the 79 countries tested in Reading literacy and second lowest in Science and Mathematics literacy (OECD, 2019). Also, in the TIMSS 2019 assessment, the Philippines only participated in the assessment for Grade 4 students and ranked last among 58 countries in Mathematics which scored 297 (Mullis et al., 2020).

Further, Tan and Umali-Deininger (2019) reported that only 58 percent of Grade 6 students met minimum proficiency standards in mathematics. Furthermore, based on the study conducted by Capate and Lapinid (2015) in Manila, it was observed that Grade 8 students' overall Mathematics Achievement Test (MAT) level of achievement was limited to the Beginning level (74.08%). This suggests that students face challenges in comprehending the subject, indicating insufficient acquisition or development of prerequisite knowledge and fundamental skills necessary for better understanding. Moreover, Peteros et al. (2022) conducted a study in Cebu, which revealed that 30 percent of the students fell short of meeting expectations, indicating a failure in their mathematics test. Additionally, the study found that 50 percent of the students achieved only a fairly satisfactory performance, with grades ranging from 75 to 79.

In Davao City, there is evidence of poor mathematics achievement among students. In the study conducted at Toril, Davao City, it was found that 94.5 percent of the students scored 74 and below in the mathematics test, while one percent scored 75-79, two percent achieved grades between 80-84, and two and a half percent attained grades of 90-100 (Bongcac, 2021). This is a concerning issue as mathematics is a fundamental subject that serves as a foundation for many other fields, including science, technology, engineering, and mathematics (STEM). Poor math skills can limit a student's future academic and career opportunities, as well as hinder their ability to navigate everyday tasks, such as managing finances or interpreting data.

Several factors contribute to poor mathematics achievement which include self-regulation and emotional intelligence. Self-regulation in mathematics refers to the ability of students to monitor and control their learning process to achieve their academic goals (Boekaerts, 2019; Duckworth & Yeager, 2015; Dignath & Büttner, 2018; Schunk & Zimmerman, 2016; Efklides, 2014).

A study by Raufelder et al. (2015) found that self-regulation was positively associated with mathematics achievement among German high school students. Students who were more skilled in self-regulation had higher mathematics achievement scores than those who were less skilled. Moreover, Emotional intelligence is the ability to recognize, understand, and manage one's own emotions, as well as to recognize and respond appropriately to the emotions of others (Graziano et al., 2018; Brackett, 2019; Goleman, 2018; Salovey & Sluyter, 2016). A study by Çetin and Sezer (2019) investigated the relationship between emotional intelligence and mathematics achievement among middle school students in Turkey. The study discovered a positive relationship between emotional intelligence and mathematics achievement, and that emotional intelligence was a significant predictor of mathematics achievement after controlling for other variables.

Despite the literature cited above, there are only a few studies conducted in Davao City about self-regulation and emotional intelligence as predictors of mathematics achievement of students. Further, most of the literature focuses on teachers' emotional intelligence and self-regulation like the study of Mohamad and Jais (2016) and Uzuntiryaki-Kondakci et al. (2017), and there are only a few pieces of literature that focus on students. Furthermore, most of the studies highlighted in the pieces of literature are just focused on elementary and college students' mathematics performance like the study of Napoli et al. (2018), Flook et al. (2019), Tsai and Kunter (2018) and Zimmerman and Kitsantas (2019), not so much on high school students, and some of these studies are conducted in private schools, not in secondary public schools. Moreover, some of the research found in the reviews involved two variables only like the study of Adebowale (2017), Ahmed et al. (2019) and Balanquit and Carillo (2019) which is different from the present study. Additionally, some authors utilized mixed-methods research design such as the study of Bongcac (2021). Likewise, other researchers used experimental method like the study of Cavanagh et al. (2018). Additionally, research has been carried out in the field of business, such as the study by Nissinen and Malmström (2017) on the relationship between mathematics achievement and entrepreneurial success, as well as the study conducted by Bertrand et al. (2019) regarding the relationship between mathematics achievement and stock market participation.

Theoretical Lens

The study was anchored on Zimmerman's Social Cognitive Theory of Self-regulated Learning (2000) and Mayer and Salovey's Model of Emotional

Intelligence (1997). According to Zimmerman's social cognitive theory, self-regulated learning refers to the process wherein the students actively oversee, manage, adjusting their cognitive, metacognitive, and motivational processes during the learning endeavors. This entails setting goals, monitoring progress, and adapting flexibility in learning approaches to suit the task at hand. Those students who are adept at self-regulated learning demonstrated heightened motivation, resilience in the face of obstacles, and the utilization of effective learning methodologies, all contributing to enhanced performance in Mathematics (Zimmerman, 2000). In the study, Zimmerman's theory embodies self-regulation and its impact on the achievement of Mathematics. The theory proposed that learners who excelled in self-regulation of learning in the subject were more able to establish suitable objectives, keep track of their advancement, strategize their methods, and efficiently employ problem-solving techniques. These regulation proficiencies had fostered heightened drive, involvement, and awareness in metacognitive that led to higher Mathematical achievement levels. This theory emphasized also the proactive involvement of learners in overseeing their educational paths and underscores the metacognitive significance and factors in motivation in attaining success in academics.

Moreover, Mayer and Salovey's Model of Emotional Intelligence (1997) has a theoretical framework that helps in understanding emotions better. It divided emotional intelligence into four main parts which were perceiving, comprehending, utilizing, and managing emotions. First off, in perceiving emotions, it has been being able to tell what's the feelings to help you think better and make good decisions. In understanding emotions, it is the capacity to comprehend why someone feels a certain way. And finally, managing emotions can somehow be being able to manage the feelings well. The study of Mayer and Salovey's Framework encompassed emotional intelligence and its impact on Mathematics achievement. It has four branches of the framework that lay the foundation for understanding how emotional intelligence can shape the involvement of the students, drive, and self-discipline within the Mathematics context. Through nurturing emotional intelligence skills, for instance in sensing, comprehending, employing, and handling emotions, students may potentially their Mathematics achievement by cultivating positive emotions, adeptly navigating obstacles, and sustaining a resilient and adaptive mindset in the endeavors of Mathematics.

METHODS

Research Design

In the study, the quantitative descriptive-correlational was utilized. The quantitative, as explained by Wilson (2019) encompassed planning, designing, and putting into action the strategies that have been gathered and analyzing the data afterward. Also, the study by Leavy (2022) added that quantitative research hones in on its focus, objectivity, organization, precise measurement, statistical explanations, explanatory power, and real-world applicability. Additionally, Williams et al. (2022) emphasized the numerical side and its roots of quantitative research in terms of scientific traditions This method aimed to describe, interpret, and untangle potentially the cause-and-effect relationships that made the predictions through the use of a variety of methods, from small-scale surveys to large-scale big data analysis. Furthermore, this study took a descriptive correlational design which the researcher is more likely a bystander who observed what's happening without its direct influence (Walinga and Stangor, 2019). Moreover, descriptive correlational design was appropriate to this study since this study aimed to figure out if emotional intelligence and the ability of self-regulation have influenced the success of the students in Mathematics. The aforementioned variables were examined and documented using the descriptive correlational approach. It should have been highlighted, nonetheless, that while research questionnaire was used to predict its association between the variables. And lastly, this study is deductive.

Research Locale

The study focused on self-regulation and emotional intelligence as determinants of mathematics achievement of students, and it was conducted in Cluster 7 in the 3rd District of Davao City. Tugbok is situated in the southern region of Mindanao, Philippines, and is recognized to be one of the largest districts within the City of Davao. It spans approximately 244 square kilometers. It has a notable expansive geographical coverage that has renowned picturesque landscapes and extensive agricultural sectors. This place embodies a dynamic amalgamation of rural and urban communities, functioning as a pivotal center for diverse endeavors of economic that include agriculture, commerce, and small-scale industries. Tugbok played a significant role in the regional economic activities and initiatives in the development. The six schools are DepED-managed partially urban secondary public schools situated in Davao City, Davao Del Sur.

Research Respondents

Students from Davao City public secondary schools in Grade 8 were included in the research. All Grade 8 students for the school year 2023-2024 from the targeted schools were included in the study; hence the complete enumeration sampling technique was used to select the respondents. There were 253 respondents in this study. Further, the Grade 8 students were selected for this study because they had already successfully navigated the transition phase from Grade 7. This choice was made to minimize the influence of other variables on the study's outcomes. Additionally, Grade 8 students were deemed more suitable due to their more stable emotional states compared to Grade 7 students who are still adapting to junior high school. Also, the researcher was interested in these respondents since they live in a location that is somewhat distant from the city's center. Moreover, the other secondary students from other grade levels were not included in the study because they had been attending the school for some time and were nearing graduation, which could introduce additional factors into the research. The researcher ensured that the involvement of the respondents in this research was not required. Thus, the identified respondents were permitted to withdraw their involvement in this study at any moment should they change their minds.

Statistical Tools

The following statistical techniques were utilized to treat and interpret the information obtained from the questionnaires: Mean, it was used to describe the levels of self-regulation, emotional intelligence, and mathematics achievement of students from the six Schools. Standard Deviation it was used to assess the degree of variation, proximity, or distance between self-regulation, emotional intelligence, and mathematics achievement to the average or central tendency. Pearson Product-Moment Correlation. This tool aimed to identify the significant relationships between self-regulation and mathematics achievement; and the relationships between emotional intelligence and mathematics achievement of students. Multiple Regression Analysis, it was used to determine whether self-regulation and emotional intelligence significantly influence mathematics achievement.

RESULTS

Level of Self-Regulation of Students

Table 1
Level of Self-Regulation of Students

	Mean	SD	Description
Goal Attainment	4.34	0.59	Very High
Mindfulness	4.48	0.57	Very High
Adjustment	4.39	0.53	Very High
Proactiveness	4.43	0.55	Very High
Goal Setting	4.73	0.50	Very High
Overall Mean	**4.47**	**0.34**	**Very High**

The data in Table 1 present the level of self-regulation of students with an overall mean of 4.47 which revealed a very high level of self-regulation. The result indicates that the self-regulation of the respondents is always observed. This means that the respondents always demonstrate the ability to manage and control their thoughts, emotions, and behaviors in order to achieve desired goals. Further, the respondents always display the ability to monitor and control their learning process in order to achieve their academic. Furthermore, the overall standard deviation is 0.34 which is relatively tightly clustered around the mean. This indicates that the respondents' ratings are close to the mean with minimal dispersion.

The findings conform with the study of Hafizallah and Zulkarnain (2022) which examined the effect of self-regulation abilities on high school student resilience during the distance learning process. The study revealed that students demonstrated a very high level of self-regulation. This suggests that students are capable of managing their own learning, tracking their academic journey by establishing goals, keeping track of their progress, and modifying their approaches as needed. It's important to note that despite the differences in the learning environment of the present study to the previous study, students exhibit a remarkable degree of self-regulation, not just in mathematics but in general. This highlights how well high school students can handle different learning environments and keep track of and regulate their learning process.

However, the findings did not conform with the study of Pascua (2022), which examined the lifestyle and self-regulation of senior high school students, indicated that these students had an average level of self-regulation. This suggest that students exercise some extent of self-direction that they can be able to easily adjust to any kind of class situation they may encounter in the future. It should be noted that Pascua's study looked at self-regulation among senior high school students. In relation to the present study, it suggests that the level of self-regulation may vary as students advance through their academic journey.

Level of Emotional Intelligence of Students

Table 2
Level of Emotional Intelligence of Students

	Mean	**SD**	**Description**
Perception Dimension	4.40	0.50	Very High
Comprehension Dimension	4.52	0.51	Very High
Regulation Dimension	4.13	0.57	High
Overall Mean	**4.35**	**0.31**	**Very High**

The data in Table 2 illustrates the emotional intelligence levels of students. The results indicate a very high overall mean of 4.35, which means that the emotional intelligence of the respondents is always manifested. This indicates that the students who took the survey had the capacity to recognize, understand, and control their own emotions, while also showing skill in recognizing and responding properly to the emotions of others. Moreover, the narrow overall standard deviation of 0.31 indicates a strong level of consistency in the evaluations provided by the respondents, which were clustered around the mean. This implies that there is minimal variation or divergence in how the participants evaluated and expressed their emotional intelligence.

The results did not conform with the study by Chinyere and Afeez (2019), which includes examining the emotional intelligence of students, revealed that university students have a high level of emotional intelligence. This implies that students possess the ability to identify, assess, and manage the emotions of one’s self and of others. Additionally, in the study of Majerníková and Obročníková (2017), the level of total global Emotional Intelligence among undergraduate students was high. The results show higher-level scores achieved

by nursing students in almost all areas of emotional intelligence. This implies that students have the ability to monitor one's own and others' feelings and emotions. While Chinyere and Afeez (2019) and Majerníková and Obročníková (2017) examine different educational levels, they collectively show the prevalence of high emotional intelligence, in general, among students across various stages of education, though not as high as in the present study.

Level of Mathematics Achievement of Students

Table 3
Level of Mathematics Achievement of Students

	Mean	SD	Description
Percent of Correct Answer	64.18	10.99	High

Presented in Table 3 is the level of Mathematics Achievement of Grade 8 students. Results show that the overall percentage of correct answers is 64.18% described as "High". This means that the students demonstrate a high level of achievement in mathematics tests. This implies that the Grade 8 students not only grasp the intended mathematics concepts but have also achieved mastery in most of the essential mathematical skills crucial for addressing diverse math challenges. Further, with a standard deviation of 10.99, it becomes apparent that there is a considerable spread in the mathematics scores of the students. This implies that the individual scores vary significantly from the average or mean score. Simply put, the result implied that there was a wide variation in students' performance, with some scores that were significantly higher and others scoring lower scores than the average.

The "high" level of Mathematics achievement displayed logical and abstract thinking that also indicated that students have the capacity to effectively apply mathematical ideas and methodologies. Moreover, these students have a high level of skill in expressing mathematical concepts and show the capacity to participate in logical thinking and mathematical analysis. In addition, it was found that there was a competency that goes beyond basic comprehension among Grade 8 students. They had comprehensive skills that included the ability to apply concepts of Mathematics, effectively communicate, engage in critical thinking, and reason out logically.

The results align with the research carried out by Garinganao and

Bearneza (2021), which investigated the Algebraic Skills and Academic Achievement in Mathematics among Grade 7 Students and their result was high. This has suggested that the students have acquired satisfactory concepts, essential information, and skills and are capable of applying concepts in real-world challenges without assistance from a teacher or their classmates. However, Santillan and Bearneza (2023), it had found that Grade 9 Learners in Philippine High Schools had a low level proficiency of in Mathematics. This implied that they were encountering difficulties in understanding and applying concepts and skills of Mathematics. Further, the study of Kim (2023) did not affirm the result of the present study. In his study, Kim (2023) revealed that Korean students showed low achievement in algebra in the 8th grade. This implies that they have difficulty understanding and applying algebraic concepts. This could also suggest difficulties with problem-solving skills, mathematical reasoning, and comprehension of algebraic principles. While similar topics, such as algebra, were included in both the current and previous studies, the results in terms of students' achievement in mathematics varied. It's also important to note that the students who took part in the study came from a variety of nationalities.

Significance of the Relationship of Self-Regulation and Emotional Intelligence to Mathematics Achievement of Students

Table 4

Significance of the Relationship of Self-Regulation and Emotional Intelligence to Mathematics Achievement of Students

Independent Variables	Mathematics Achievement		
	r – value	p-value	**Remarks**
Self-Regulations	.380	0.000	Significant
Emotional Intelligence	.606	0.000	Significant

**Significant p<0.05*

Underscored in Table 4 is the significant relationship between self-regulation and students' mathematics achievement, with a computed r-value of 0.380 and a highly significant p-value of 0.000 which is less than 0.05 level of significance. This correlation highlights the connection between students' self-regulation skills and their success in mathematics. The result indicates a positive correlation, implying that as students exhibit higher levels of self-regulation, their mathematics achievement tends to correspondingly increase. It further suggests that those students who have strong self-regulation

abilities, including goal attainment, mindfulness, adjustment, proactiveness, and goal setting were more likely to succeed in Mathematics. The positive correlation between self-regulation and mathematics achievements suggested that students who have efficiently managed their learning processes and behaviors and more capable of overcoming the difficulties associated with mathematical concepts and problem-solving.

This finding corroborated with Panadero and Alonso-Tapia's (2018) research, which established a positive association between self-regulation and mathematics academic achievement. According to their research, students who possess self-regulation abilities would be more likely to attain better levels of mathematics achievement. Similarly, the research results provide additional support for Hooper and Hannafin's (2019) study on undergraduate students, which emphasized the importance of self-regulation skills to the achievement of the subject. Their study showed that students who possess improved self-regulation skills exhibited greater proficiency and capacity of cognitive. Additionally, the results confirmed the longitudinal study carried out by Tsai and Kunter (2018) among Elementary School Students in Germany. The study determined that there was a relationship between self-regulation development and mathematics achievement that also demonstrated a positive correlation. Students who improved in self-regulation abilities over time had shown superior in proficiency Mathematics. The longitudinal viewpoint of this study emphasized that strengthening self-regulation was not just advantageous in the immediate term but helped long-lasting achievement in the subject.

Further, the current study, as shown in Table 4, demonstrated a significant positive relationship between emotional intelligence and mathematics achievement. This has been supported by a calculated r-value of 0.606 and a very significant p-value of 0.000, which is below the level of significance of 0.05. Therefore, it can be said that those students who possessed greater degrees of emotional intelligence were more inclined to achieve exceptional achievement in the field of mathematics. This had been aligned to Vohra et al. (2019) on the Indian High School Students, who demonstrated a positive association of emotional intelligence and mathematical achievement. This association remains significant considering the previous academic performance and demographic variables. Furthermore, Çetin and Sezer's (2019) study supported these findings which were conducted in Turkey Middle School Students. Their study revealed a positive correlation between emotional intelligence and mathematics achievement, highlighting emotional intelligence as a significant predictor in the

setting of academics.

There was a positive correlation between both self-regulation and emotional intelligence and mathematics achievement of students. Nevertheless, emotional intelligence had a stronger correlation to mathematics achievement of students than the self-regulation.

Significance of the Influence of Self-Regulation and Emotional Intelligence on Mathematics Achievement of Students

Table 5

Significance of the Influence of Self-Regulations and Emotional Intelligence on Mathematics Achievement of Students

Variables	Student Engagement in Mathematics			
	β	t	p-value	Remarks
Self-Regulations	0.20	3.85	0.00	Significant
Emotional Intelligence	0.54	10.40	0.00	Significant
Holistic Model				
r^2 0.40				
F-value 84.26				
p-value 0.00				
remarks Significant				

**Significant at p<0.05*

Table 5 offered a comprehensive insight into the significant impact that both self-regulation and emotional intelligence have among the Grade 8 Students on their mathematics achievement. Self-regulation was identified as a significant factor since it had a positive regression value of 0.20 with a p-value less than 0.05. This indicates that for each unit increase in self-regulation, there is a proportional increase in students' achievement of 0.20 units. In Cleary and Chen's (2019) study, the results were the same in this study, which showed that self-regulation was a significant indicator of mathematics achievement among Middle School Students. This study unveiled a positive correlation between students who regulated behavior, emotions, and cognitive processes and their greater achievement in mathematics.

The findings of this study aligned with Zimmerman's (2000) social

cognitive theory of self-regulated learning, which highlighted students' active involvement in controlling their own learning process. The study demonstrates a significant relationship between self-regulation and mathematics achievement, supporting Zimmerman's claim that students who successfully regulate their learning in mathematics were more likely to set appropriate goals, plan their approach, monitor their progress, and employ effective problem-solving strategies. The significant relationship between self-regulation and students' mathematical achievement emphasizes the crucial role of self-regulation abilities in promoting motivation, engagement, and metacognitive awareness. These were all essential in Zimmerman's theory. Thus, this relationship indicated that students who actively monitor, control, and regulate their cognitive, metacognitive, and motivational processes in mathematical activities have a greater likelihood of attaining higher levels of success in the subject.

Further, the findings conform with Kashif and Shahid's (2021) study that revealed self-regulation significantly influences students' mathematics achievement. In contributing to academic success, the study underscores the critical role played on student's understanding of both personal and others' feelings and at the same time proficiency in regulating emotions. As a pivotal factor fostering positive outcomes in mathematics achievement, it can be achieved through balancing emotional regulation and intelligence.

Furthermore, emotional intelligence had a significant role as evidenced by a significant positive regression coefficient value of 0.54 with a p-value less than 0.05. This suggests that there was a significant positive correlation between emotional intelligence and students' mathematics achievement, with a 0.54 increase in achievement for every unit increase in emotional intelligence. The results coincide with the research of Çetin and Sezer (2019), which stated that emotional intelligence is a strong predictor of mathematics achievement even when accounting for other factors. By fostering emotional intelligence abilities and creating good emotional experiences in the mathematics context. Educators can improve students' performance and engagement in the subject.

The study utilized Mayer and Salovey's Model of Emotional Intelligence (1997) which comprehends emotional intelligence and its impact on Mathematics achievement. The four branches of the models offer a holistic perspective that may influence students' involvement and stiffened emotional intelligence, drive, and self-control in the field of Mathematics. This was aligned with the findings of the study that there was a significant connection between

emotional intelligence and students' achievement in Mathematics. By developing emotional intelligence abilities, that involved using, recognizing, comprehending, and controlling emotions, students could improve mathematics achievements. This helps them experience emotions positively, efficiently handle difficulties, and have an adaptable and resilient mentality while dealing with mathematical assignments.

In determining student's achievement in Mathematics, the results of the study suggested both self-regulation and emotional intelligence were important factors. Those who tended to succeed in the field of Mathematics were essentially those students who possessed high regulation abilities and heightened emotional intelligence. The predictive nature of these elements suggests that they have an important role in students' capacity to handle mathematical obstacles, understand concepts, and ultimately succeed in their mathematical endeavors.

Moreover, the calculated r2-value of 0.40, along with a significant F-ratio of 84.26, suggests that 40% of the variation in students' mathematical proficiency may be explained by the combined influence of self-regulation and emotional intelligence. These results underline the significance of both factors, with a p-value of 0.00 which is less than 0.05 level of significance, affirming their importance in predicting mathematics achievement. However, the difference of 60% can be ascribed to other variables or factors not addressed in this study.

CONCLUSION

Based on the findings of the study, the following conclusions are drawn: First, the thorough evaluation of self-regulation among students consistently showed a significantly high descriptive rating in key indicators such as goal attainment, mindfulness, adjustment, proactiveness, and goal setting. This suggests that self-regulation was always observed among students. Further, it indicates that students have the ability to set clear and achievable goals for themselves, monitor their progress, and persist and maintain their determination. Second, the study uncovers valuable information about emotional intelligence, revealing consistently very high descriptive ratings in two important dimensions: perception and understanding. Additionally, the regulation component has a significantly high descriptive rating, which contributes to an overall very high level of emotional intelligence. This implies that emotional intelligence was always manifested among students. Further, these findings suggest that the

surveyed students exhibit the ability to recognize, understand, and manage their emotions. Third, the students demonstrate a high level of proficiency in mathematics, indicating a high descriptive rating. This indicates that Grade 8 students have not only understood the basic mathematical principles but have also achieved a high level of proficiency. These skills are essential for solving various mathematical problems and dealing with complex situations. Their proficiency demonstrates a solid comprehension of both theoretical concepts and practical implementation in many mathematical situations. Nevertheless, the significant standard deviation highlights a huge amount of variation in results, with certain students surpassing the average while others fall below. Fourth, there was a significant relationship between self-regulation and students' mathematics achievement and there was also a significant relationship between emotional intelligence and students' mathematics achievement. It implies that students with elevated self-regulation and emotional intelligence levels are more likely to excel in mathematics. Although self-regulation has a significant relationship with the mathematics achievement of the students, it may not contribute to mathematics achievement as strongly as emotional intelligence since self-regulation has a lower relationship to mathematics achievement than emotional intelligence. Lastly, the combined influence of self-regulation and emotional intelligence significantly contributes to the students' mathematics achievement. Specifically, self-regulation notably contributes, indicating a continuous increase in students' achievement with enhanced self-regulation. The findings highlight the relevance of Zimmerman's Social Cognitive Theory of Self-regulated Learning (2000), which demonstrates that students who exhibit stronger self-regulation skills are more likely to excel in mathematics. Likewise, emotional intelligence plays a pivotal role, implying a continuous increase in students' achievement with elevated emotional intelligence. The findings highlight the relevance of Mayer and Salovey's Model of Emotional Intelligence (1997), which demonstrates that students who exhibit stronger emotional intelligence are more likely to excel in mathematics. Among the independent variables, emotional intelligence best predicts the academic achievement of students.

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