



# TEACHER EMOTIONAL SUPPORT AND PARENTAL EXPECTATION AS PREDICTORS OF STUDENTS' ATTITUDES TOWARD LEARNING MATHEMATICS

Mary Rose G. Rentuya, LPT<sup>1</sup>, Paulino P. Tado, PhD<sup>2</sup>

<sup>1</sup>MAED Mathematics, St. Mary's College of Tagum, Inc., Tagum City, Davao del Norte, Philippines

<sup>2</sup>Graduate Education Faculty, St. Mary's College of Tagum, Inc., Tagum City, Davao del Norte, Philippines

Article DOI: <https://doi.org/10.36713/epra16135>

DOI No: 10.36713/epra16135

## ABSTRACT

This quantitative research, which employed descriptive and correlational designs, aimed to determine whether teacher emotional support and parental expectation predict students' attitudes toward learning mathematics. Using the simple random sampling technique, there were 351 Grade 7 students selected as respondents from four public secondary schools in Tagum City Division during the school year 2022-2023. This study used three adapted survey questionnaires to determine the level of teacher emotional support, parental expectation and students' attitudes toward learning mathematics. Data were treated using the Mean, Pearson-r, and multiple regression analysis. Findings suggested that teacher emotional support is always manifested, parental expectation is very evident and students' attitudes toward learning mathematics is well observed. Moreover, there is significant relationship between teacher emotional support and students' attitudes toward learning mathematics. Additionally, there is significant relationship between parental expectation and students' attitudes toward learning mathematics. Further, teacher emotional support does not significantly predict students' attitudes toward learning mathematics however, parental expectation significantly predicts students' attitudes toward learning mathematics. The study implies that factors beyond teacher emotional support and parental expectation may play a significant role in shaping students' attitudes toward learning mathematics.

**KEYWORDS:** mathematics education, teacher emotional support, parental expectation, attitudes toward learning, grade 7 students, descriptive and correlational research, regression analysis; Tagum City, Davao del Norte, Philippines

## INTRODUCTION

Attitudes of students can either help or hinder their ability to learn and persist with difficult tasks in a given subject (DET, 2021). Thus, it is an essential aspect of learning mathematics (Astalini et al., 2019). According to Mazana et al. (2019), mathematics can be affected by students' attitudes toward learning the subject. Attitudes toward learning mathematics often reflect a student's value, self-confidence, and enjoyment when it comes to the subject (Kennedy, 2019). However, many students would think poorly of it and they tend to be more inclined to have negative attitudes toward learning mathematics (Calabrese, 2016). Nevertheless, the emotional support from teachers (Kikas & Tang, 2018) and expectations from parents (Curran & Hill, 2022) can boost students' attitudes toward learning mathematics.

In India, high school students' attitudes toward learning mathematics were found unfavourable. The majority of the students lacked confidence and felt boredom in engaging in related tasks in the subject. Some also perceived the usefulness

of mathematics in life as less important (Abhilasha & Ahmed, 2020). Additionally, Chaudhary et al. (2019), revealed that the majority of Pakistani students exhibit unfavorable attitudes toward learning mathematics because they believe it is pointless. Also, they did not find mathematics to be easy and believed that it would not benefit them in their daily lives. Furthermore, more than 50% of Fiji students feared mathematics as a subject and displayed negative attitudes toward it (Chand et al., 2021).

A study conducted by Cerbito (2020) in Quezon City, Philippines showed that high school students demonstrated negative attitudes toward learning mathematics. The study results suggested that teachers can foster positive attitudes in students towards the subject by teaching fun and engagingly. In Nueva Ecija, the study of Subia et al. (2018) revealed that the majority of the survey respondents reported being afraid of mathematics problems and quickly giving up when unable to solve them. They also indicated that they find mathematics to be the most challenging subject.

## Footnote:

Rentuaya, M. R. G. & Tado, P. P. (2024). *Teacher Emotional Support and Parental Expectation as Predictors of Students' Attitudes toward Learning Mathematics*.



According to a report from the guidance office in one of the public schools in Tagum City division, 23% of students had cases involving mathematics for the school year 2021–2022. Poor attitudes and fear of mathematics are some of the contributing causes. These students participated less in submitting activities because they lacked trust in their mathematical abilities. Similarly, his research in the city of Tagum, Palma (2021) found that the poor attitudes of most students in mathematics are alarming and warrant immediate attention. These students were not driven to provide answers or participate in math classroom activities.

The researcher felt compelled to work on this issue to identify the various components that can affect how students feel about learning mathematics. The significance of teacher and parent support in shaping students' attitudes toward learning mathematics, as well as their confidence and stability in learning a difficult and intimidating subject was investigated.

## OBJECTIVES

The main thrust of the research study was to determine whether teacher emotional support and parental expectation predictor of

## METHODOLOGY

### Research Design

This quantitative research utilized descriptive and correlational designs. The quantitative research is a method employing inquiry method that gathers numeric data through questionnaire, surveys and experiments (Coghlan & Brydon-Miller, 2014). This numerical data can be analyzed using statistical procedures (Creswell & Creswell, 2018).

Furthermore, the descriptive research design is a method uses to describe and analyse a phenomenon or variable without the involvement of manipulation or control. It focuses on gathering and analyzing data to gain insight into a particular topic, situation, or group, often through observation, surveys, or existing data analysis (Voxco, 2021).

In addition, correlational research design aims to explore the relationships between of two or more variables without manipulating either variable (Chiang, 2015). Regression analysis, which was also utilized in this study, examines the influence of one or more independent variables on a dependent variable. (Kuhn, 2020).

This study used descriptive design to describe the relationship between teacher emotional support, parental expectation, and students' attitudes toward learning mathematics of grade 7 students in Tagum City Division. Furthermore, the correlational approach was appropriate considering that this study tested the relationship between the variables and determine the influence among the indicators of the independent variables.

## SAMPLING DESIGN

In choosing the respondents, simple random sampling technique was used. Simple random sampling is a sampling strategy in which each component in a population has an equal probability of being selected by using an objective selection process (Simkus, 2023). The respondents of this study were the

attitudes toward learning mathematics of grade 7 students in Tagum City Division during the SY. 2022 – 2023. Specifically, this study sought answer to the following questions:

1. What is the level of teacher emotional support in terms of positive climate, teacher sensitivity and regard for adolescent perspective?
2. What is the level of parental expectation in terms of personal maturity, academic achievement and personal relationships?
3. What is the level of students' attitudes toward learning mathematics in terms of checking solution, confidence, enjoyment, use of IT in Mathematics learning, multiple solutions and usefulness of Mathematics?
4. Is there a significant relationship between (a) teacher emotional support and students' attitudes toward learning mathematics and (b) parental expectation and students' attitudes toward learning mathematics?
5. Do teacher emotional support and parental expectation significantly predict students' attitudes toward learning mathematics?

grade 7 students enrolled in four public schools in Tagum City Division during the school year 2022–2023. The total number of students enrolled was 4001. There were 693 from school A, 1440 students from school B, 969 students from school C, and 899 students from school D. A sample size of 351 students was determined using the Raosoft calculator with a marginal error of 0.05 and a confidence level of 95%. With that sample size, 61 students from School A, 126 from School B, 85 from School C, and 79 from School D were chosen.

## RESEARCH INSTRUMENT

This study collected data using three adapted instruments to assess students' perception on teacher emotional support, parental expectation, and attitudes toward learning mathematics.

Teacher Emotional Support was developed by Romano et al. (2020) and assesses three dimensions: positive climate, teacher sensitivity, and regard for adolescent perspective. Parental Expectation Survey was from Wang and Heppner's (2002) and is divided in three dimensions: personal maturity, academic achievement, and dating concerns.

Attitudes toward Learning Mathematics Questionnaire (ALM) developed by Wong and Chen (2011) and the dimensions measured are checking solution, confidence, enjoyment, use of IT in mathematics learning, multiple solutions, and usefulness of mathematics

## STATISTICAL DESIGN

The results of this quantitative study were interpreted and examined using the subsequent statistical methods:

**Mean.** The arithmetic mean, another name for this statistical tool, was calculated by dividing the sum of all values by the total number of values. Specifically, the level of teacher emotional support, parental expectation, and students' attitudes toward learning mathematics were all evaluated using this statistical method.



**Standard Deviation.** This statistical tool measured how spread out the data is about the mean. Specifically, the results of this statistical method were used to determine if the scores are normally distributed or around the mean.

**Pearson r.** The statistical relationship, or association, between two continuous variables, were evaluated using this statistical method. In particular, this statistical method were used to assess the significance of the relationship between the teacher emotional support and students' attitudes toward learning mathematics, as well as parental expectation and students' attitudes toward learning mathematics.

**Multiple Linear Regression.** The link between two or more independent variables and one dependent variable was estimated using this statistical method. In particular, this statistical method determined whether teacher emotional support and parental expectations are significant predictors of students' attitudes toward learning mathematics.

## RESULTS

1. Of the three indicators used to gauge the level of teacher emotional support, positive climate had the highest mean of 4.49 and standard deviation of 0.64, followed by teacher sensitivity Of 4.41 and SD of 0.60. It turned out that regard for adolescent perspective had the lowest mean of 4.33 and standard deviation of 0.66. For every indicator, the descriptive equivalent is very high. The descriptive equivalent gives teacher emotional support a very high overall mean of 4.41. This suggests that teacher emotional is always manifested.
2. Of the three indicators used to assess the level of parental expectation, personal maturity had the highest mean of 4.44, descriptive equivalent of very high and standard deviation of 0.49. Academic achievement, with a mean of 4.29 and standard deviation of 0.58, was rated second and had a very high descriptive equivalent. Personal relationship had the lowest mean, with a descriptive equivalent of high and a mean of 3.91 and standard deviation of 0.81. The overall mean of parental expectation is 4.21 which is very high. This implies that parental expectation is very evident.
3. Of the six indicators used to gauge the level of students' attitudes toward learning mathematics, usefulness of mathematics received the highest mean score of 4.15 and a standard deviation of 0.53. Checking solutions was next with a mean score of 4.06 and standard deviation of 0.55. On the third place was multiple solutions with a mean of 4.05 and standard deviation of 0.67. For the fourth place was enjoyment with a mean of 3.56 and standard deviation of 0.65. With a mean of 3.45 and standard deviation of 0.74 was IT and learning mathematics came in the fifth place. The lowest mean of 3.43 and standard

deviation of 0.84 was confidence. All indicators had a descriptive equivalent of high. The overall mean of students' attitudes toward learning mathematics is 3.78 which is high. This suggests that attitudes of students' toward learning mathematics are well observed.

4. The  $r$  – value of 0.280 shows that there is positive weak correlation between teacher emotional support and students' attitudes toward learning mathematics. The null hypothesis was rejected as the  $p$ -value of 0.000 is lesser than the significance level of 0.05. Likewise, the  $r$  – value of 0.504 shows a positive moderate correlation between parental expectation and students' attitudes toward learning mathematics. The null hypothesis was rejected as the  $p$ -value of 0.000 is lesser than the significance level of 0.05.
5. The  $p$  – value 0.000 shows that parental expectation influence students' attitudes toward learning mathematics. It was significant as the  $p$ -value of 0.000 is lesser than the significance level of 0.05 however, the  $p$  – value 1.103 shows that teacher emotional support does not influence students' attitudes toward learning mathematics. It was not significant as the  $p$ -value of 0.103 is greater than the significance level of 0.05. This implies that parental expectation influences students' attitudes toward learning mathematics however, teacher emotional support does not influence students' attitudes toward learning mathematics.

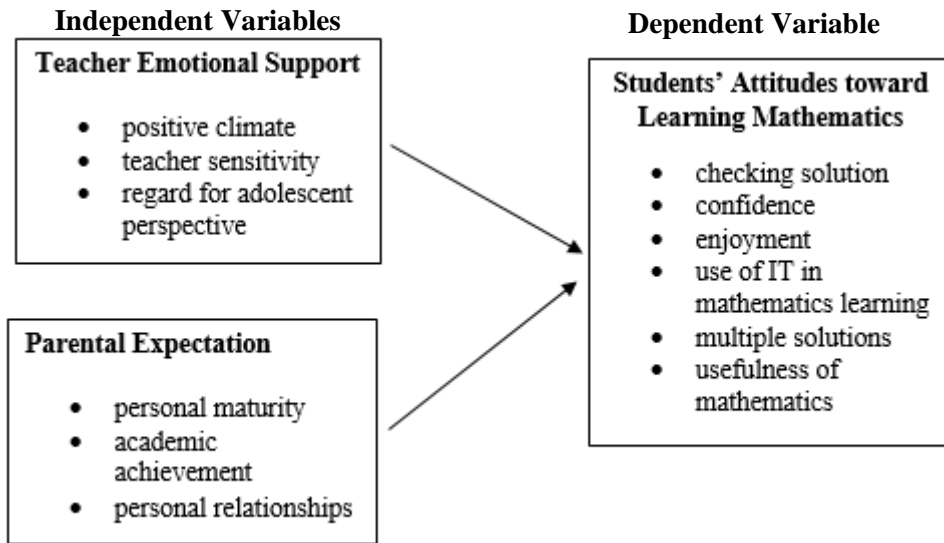
## SUGGESTION

Students are encouraged to adopt a positive mind-set, practice regularly, and seek support when needed to improve their math skills. Teachers play a crucial role in understanding students' attitudes toward math and providing tailored support to motivate them. Emotional support from teachers is essential for students' well-being and academic success. Parents are urged to emphasize the relevance of math in everyday life and support their child's efforts in learning math while maintaining realistic expectations. Future researchers can use the study's findings to evaluate the effectiveness of educational interventions, with a focus on understanding the causal relationships between teacher support, parental expectations, and students' attitudes toward learning math.

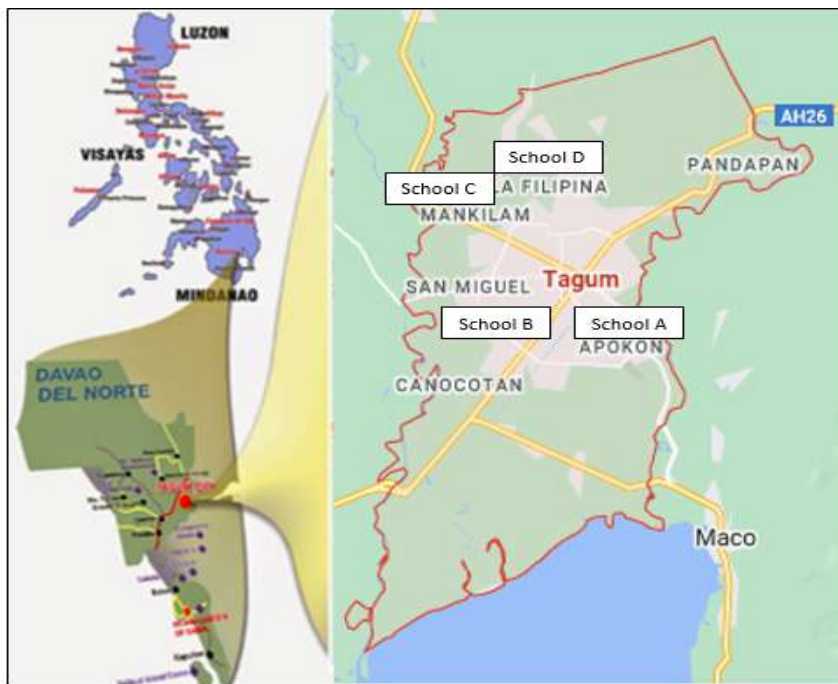
## CONCLUSION

Teacher emotional support is always manifested. Parental expectation is very evident. Students' attitudes toward learning mathematics is well observed. There is significant relationship between teacher emotional support and students' attitudes toward learning mathematics. Additionally, there is significant relationship between parental expectation and students' attitudes toward learning mathematics. Parental expectation influences students' attitudes toward learning mathematics however, teacher emotional support does not influence students' attitudes toward learning mathematics.

**FIGURES**



**Figure 1. Conceptual Framework of the Study**



Source: <https://www.google.com/maps/>

**Figure 2. Map of Tagum City, Davao del Norte**

**TABLES**

**Table 1. Level of Teacher Emotional Support**

Indicators	Mean	SD	Description
Positive Climate	4.49	0.64	Very High
Teacher Sensitivity	4.41	0.60	Very High
Regard for Adolescent Perspective	4.33	0.66	Very High
Category Mean	4.41	0.53	Very High



**Table 2. Level of Parental Expectation**

Indicators	Mean	SD	Description
Personal Maturity	4.44	0.49	Very High
Academic Achievement	4.29	0.58	Very High
Personal Relationship	3.91	0.81	High
Category Mean	4.21	0.48	Very High

**Table 3. Level of Students' Attitudes toward Learning Mathematics**

Indicators	Mean	SD	Description
Checking Solutions	4.06	0.55	High
Confidence	3.43	0.84	High
Enjoyment	3.56	0.65	High
IT and Learning Mathematics	3.45	0.74	High
Multiple Solutions	4.05	0.67	High
Usefulness of Mathematics	4.15	0.53	High
Category Mean	3.78	0.46	High

**Table 4. Significance of the Relationship between Teacher Emotional Support and Parental Expectation for Students' Attitudes toward Learning Mathematics**

Variables Correlated	r	p-value	Decision on H <sub>0</sub>	Decision on Relationship
Teacher Emotional Support and Students' Attitudes toward Learning Mathematics	0.280	0.000	Rejected	Significant
Parental Expectation and Students' Attitudes toward Learning Mathematics	0.504	0.000	Rejected	Significant

**Table 5. Regression Analysis on the Teacher Emotional Support and Parental Expectation for Students' Attitudes toward Learning Mathematics**

Independent Variable	Unstandardized $\beta$ Coefficients		Standardized Coefficients		p-value	Remarks
	B	Std. Error	Beta	t		
(Constant)	1.558	0.217		7.165	0.000	
Teacher Emotional Support	0.072	0.044	0.083	1.633	0.103	Not significant
Parental Expectation	0.452	0.049	0.469	9.236	0.000	Significant

R=0.510    R square=0.260    F-value= 61.037    p=0.000

**REFERENCES**

- Abhilasha, M., & Ahmed, S. (2020). Students' Attitude towards Mathematics and Their Mathematics Achievement: A Study of Secondary School Students. *Meitei Pangal Community of Manipur. Gravida Review Journal*, 6(12), 73-86. <https://www.studocu.com/ph/document/western-philippines-university/building-and-enhancing-new-literacies-across-the-curriculum/grj-2940-dddd/40163112>
- Astalini, A., Kurniawan, D. A., Darmaji, D., Sholihah, L. R., & Perdana, R. (2019). Characteristics of Students' Attitude to Physics in Muaro Jambi High School. *Humanities and Social Science Reviews*. <https://doi.org/10.18510/hssr.2019.7210>
- Calabrese, V. M. (2016). *The Effects of Emotional and Instrumental Support on Students' Mathematical Attitudess*. Honors College. 371. <https://digitalcommons.library.umaine.edu/honors/371>
- Cerbito, A. F. (2020). Comparative Analysis of Mathematics Proficiency and Attitudes toward Mathematics of Senior High School Student. *Online Submission*, 10(5), 211-222. <https://doi.org/10.29322/IJSRP.10.05.2020.p10125>
- Chand, S., Chaudhary, K., Prasad, A., & Chand, V. (2021). Perceived Causes of Students' Poor Performance in Mathematics: A Case Study at Ba and Tavua Secondary Schools. *Frontiers in Applied Mathematics and Statistics*, 7. <https://doi.org/10.3389/fams.2021.614408>



6. Chaudhry, A. Q., Malik, M., & Rafiq, N. (2019). Attitude of Students about Learning Mathematics at Elementary Level. *Journal of Elementary Education*, 29(1), 109-120. [https://pu.edu.pk/images/journal/JEE/PDF/8\\_v29\\_1\\_19.pdf](https://pu.edu.pk/images/journal/JEE/PDF/8_v29_1_19.pdf)
7. Chiang, I. A. (2015). *Correlational Research*. Pressbooks. <https://opentextbc.ca/researchmethods/chapter/correlational-research/>
8. Coghlan, D. & Brydon-Miller, M. (2014). *The SAGE Encyclopedia of Action Research*. SAGE Publications Ltd, 1(2) <https://doi.org/10.33524/cjar.v16i1.181>
9. Creswell, J.W., & Creswell, J.D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*: Sage, 5.
10. Curran, T., & Hill, A. P. (2022). Young People's Perceptions of Their Parents' Expectations and Criticism are increasing over Time: Implications for Perfectionism. *Psychological Bulletin*, 148(1-2), 107-128. <https://doi.org/10.1037/bul0000347>
11. DET. (2021). *Assess the Attitudes, Motivations, and Dispositions of Your Students*. Victoria State Government. <https://www.education.vic.gov.au/school/teachers/teachingresources/practice/improve/pages/eitassessattitudes.aspx>
12. Kennedy, L. (2019). *How Attitude towards Math Impacts Student Achievement*. <https://www.prodigygame.com/main-en/blog/attitude-towards-math/>
13. Kikas, E. & Tang, X. (2019). Child-Perceived Teacher Emotional Support, Its Relations with Teaching Practices, and Task Persistence. *European Journal of Psychology of Education*, 34, 359-374. <https://doi.org/10.1007/s10212-018-0392-y>
14. Kuhn, G. (2020). *What is Regression Analysis in Market Research?* Market Research Company. <https://www.driverresearch.com/market-research-company-blog/what-is-regression-in-market-research/>
15. Mazana, Y. M., Suero Montero, C., & Olifage, C. R. (2019). Investigating Students' Attitude towards Learning Mathematics. *International Electronic Journal of Mathematics Education*, 14(1), 207-231 <https://doi.org/10.29333/iejme/3997>
16. Romano, L., Tang, X., Hietajärvi, L., Salmela-Aro, K., & Fiorilli, C. (2020). Students' Trait Emotional Intelligence and Perceived Teacher Emotional Support in Preventing Burnout: The Moderating Role of Academic Anxiety. *International Journal of Environmental Research and Public Health*, 17(13), 4771. <https://doi.org/10.3390/ijerph17134771>
17. Simkus, J. (2023). *Simple Random Sampling Method: Definition & Examples*. *Simply Psychology*. <https://www.simplypsychology.org/simple-random-sampling.html>
18. Subia, G. S., Salangsang, L. G., & Medrano, H. B. (2018). Attitude and Performance in Mathematics I of Bachelor of Elementary Education Students: A Correlational Analysis. *American Scientific Research Journal for Engineering, Technology, and Sciences (Asrjets)*, 39(1), 206-213. [https://asrjetsjournal.org/index.php/American\\_Scientific\\_Journal/article/view/3821](https://asrjetsjournal.org/index.php/American_Scientific_Journal/article/view/3821)
19. Voxco. (2021). *Quantitative Research*. Voxco. <https://www.voxco.com/blog/quantitative-research-examples/>
20. Wang, L. & Heppner, P. (2002). Assessing the Impact of Parental Expectations and Psychological Distress on Taiwanese College Students. *Counseling Psychologist - COUNS PSYCHOL*. 30, 582-608. <https://doi.org/10.1177/00100002030004006>.
21. Wong, K. Y., & Chen, Q. (2011). *Nature of an Attitudes toward Learning Mathematics Questionnaire*.