LEARNING CULTURE AND EMOTIONAL INTELLIGENCE AS PREDICTORS OF PROBLEM-SOLVING SKILLS OF GRADE 10 STUDENTS

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ABSTRACT

The main purpose of the study was to determine the influence of the learning culture and emotional intelligence on the problem-solving skills of grade 10 students in Bayabas National High School, Magsaysay National High School, New Sibonga National High School, and Nabunturan National Comprehensive High School - who were enrolled under the face-to-face learning modality. Respondents completed a researcher-made test to assess problem-solving skills, along with two adapted questionnaires: one measuring learning culture (covering peers, teaching approaches, learning environment, and learning facilities), and the other assessing emotional intelligence (including wellbeing, self-control, emotionality, and sociality). Pearson's r and regression analysis were used to analyze the relationships among these variables. The results revealed no significant relationship between learning culture and students' problem-solving skills, nor between emotional intelligence and problem-solving skills. This suggests that, within this context, neither the learning environment nor emotional intelligence directly impact students' problem-solving skills. These findings indicate that other unmeasured factors may play a more substantial role in shaping problem-solving skills. Therefore, it is recommended that future interventions and research focus on directly enhancing problem-solving strategies and cognitive skills, rather than solely emphasizing learning culture or emotional intelligence. This targeted approach may be more effective in improving students' proficiency in problem-solving tasks.

Keywords: *Mathematics teaching, learning culture, emotional intelligence, peers, teaching approaches, learning environment, learning facilities, wellbeing, self-control, emotionality, sociality, descriptive-correlation.*

1. INTRODUCTION

Problem solving is a formidable challenge that leaves many students feeling overwhelmed and defeated. The core of this struggle often lies in students' inability to fully grasp the problems they face. When confronted with a new challenge, students frequently struggle to apply their existing knowledge, lacking an effective mental framework for approaching problemsolving. This difficulty is particularly evident in mathematics education, where problem-solving plays a crucial role in connecting abstract concepts to real-world applications. Despite its importance, problem-solving remains one of the most demanding aspects of math for students (Zawojewski & Cai, 2020). [1]

In Indonesia, this issue is particularly serious. A study found that junior high school students in the country scored very poorly on problem-solving tests, with an average score of only 22.28 out of 100 (Gunawan et al., 2023). This means most students have trouble applying math to solve everyday problems. While some teachers think their students are doing okay, there are big differences in how well students can solve problems. These differences depend on things like what grade they're in, whether they're boys or girls, and how well they do in school overall. [2]

The problem-solving skills of students in the Philippines, particularly in mathematics, face significant challenges that require urgent attention. Research by Verzosa-Quinto & Mabansag (2023) reveals that Grade 8 students in Samar struggle with word problems due to inadequate reading comprehension and analytical skills, highlighting a critical gap in foundational abilities. These findings underscore the need for a comprehensive review and reform of mathematics education in the Philippines, focusing on developing critical thinking and practical application skills alongside theoretical knowledge. [3]

The difficulty in solving mathematical problems is not new to students in Davao de Oro, specifically in Nabunturan West District. According to the 2024-2025 First Periodical Math 10 test results, more than two-thirds of them (65%) were unable to solve these worded problems Contextual Teaching and Learning. This means that out of every 100 students who took the test, at least 65 students struggled with the problem-solving section. The researcher also observed that many students find it challenging to translate a word problem into mathematical language. This is like trying to decipher a code without knowing the key. Moreover, it is also observed that students have difficulty in choosing appropriate strategies in solving math problems. This uncertainty of what strategy to use leads them to wasted time and increased frustration, especially during examinations.

While extensive research has been conducted on problem-solving in mathematics, there is a notable gap in understanding how learning culture and emotional intelligence impact students' problem-solving skills. Studying these factors is crucial because the learning environment significantly influences students' engagement, motivation, and access to resources, all of which can affect their approach to mathematical problem-solving. Additionally, emotional intelligence plays a vital role in how students manage stress, persevere through challenges, and collaborate with peers during problem-solving tasks, making it an essential but often overlooked aspect of mathematical education that deserves further investigation.

2. RESEARCH METHODOLOGY

2.1. Research Design

The researcher used the quantitative descriptive correlational design. The descriptive research, according to Parreño and Jimenez (2006), is a design that deals with the collection and presentation of data as well as the summarizing values that describe the group's characteristics. Since it examined the level of learning environment, emotional intelligence, and problem-solving skills of the students, this study is descriptive. On the one hand, correlational design examines the degree to which two or more variables are associated or related (Creswell, 2005).

2.2. Research Respondents

The respondents of the study were the grade 10 junior high school students of four public schools in Nabunturan West District, Division of Davao de Oro enrolled during the S.Y. 2023-2024 under the face-to-face learning modality. The researcher would utilize the Raosoft calculator in determining the sample size of respondents. Proportionate sampling will be used to determine the number of respondents per school.

Table 1: Distribution of Respondents

School	Population	Percentage	Sample
Nabunturan National Comprehensive High School	694	79.78%	213
Magsaysay National High School	61	7.12%	19
Bayabas National High School	35	4.12%	11
New Sibonga National High School	79	8.98%	24
Total	**869**	**100%**	**267**

The respondents in each school identified through random sampling using Microsoft Excel software. This procedure utilizes a formula to generate a random number for each piece of data and sort it in ascending or descending order. After sorting, the first numerical set of data represents the random sample respondents for each school.

2.3. Research Instruments

This study utilized two adapted research instruments and one researcher-made test according to the focus of the study. These instruments are submitted to the panel of experts for validation. Moreover, pilot tested on a group of students from one of the public secondary schools not in Nabunturan West District, Division of Davao de Oro, these are students

not part of the respondents of the study. Furthermore, the data would be tabulated to get the Cronbach alpha value in assessing the reliability of the research instruments.

Learning Environment Questionnaire. In this study, the researcher adapted and contextualized the Learning environment Questionnaire developed by Roelofs, Visser, and Terwel (2002). Among the existing questionnaires, the researcher chose this since they are ideally suited to the respondents. The questionnaire consists of ten questions for teaching approaches, nine questions for peers, and nine questions for learning facilities. The Cronbach's Alpha of this research instrument was 0.866. This means that the instrument has a good internal consistency thus it is a very reliable means to collect the necessary data. The Likert scale rating was changed into levels of agreement with responses "strongly agree" (5), "Agree" (4), "Moderately agree" (3), "Disagree" (2), and "Strongly disagree" (1).

Emotional Intelligence. The instrument to be used in measuring the students' emotional intelligence was the Traits of Emotional Intelligence Questionnaire (2020) by Kryukova and Shestova. The tool has four indicators: wellbeing, selfcontrol, emotionality, and sociality. The number of items for wellbeing, self-control, and sociality is six each, while emotionality has 7 items. The Cronbach's Alpha of this instrument was 0.812. This indicates that the instrument has good internal consistency, making it a very trustworthy way to get the required data. The Likert scale rating was changed into levels of agreement with responses "Strongly agree" (5), to "Strongly disagree" (1).

Problem-Solving Skills. A test questionnaire made by the researcher to determine the problem-solving skills of students where there are ten (10) items and each item having four sub items based on Polya's Problem Solving Techniques. In his book entitled "how to solve it", he introduced the four principles in solving, namely; Understand the problem, Devise a plan, Carry out the plan, and Look back (Polya, 1945). Each principle in the test questionnaire has 10 items presented in a multiplechoice type of questions with one option being the correct answer. The researcher used a table of specification (TOS) in formulating the test questions to ensure that the test measures the intended learning competencies in the second quarter of grade 10 level. The mean percentage score for each indicator was obtained by dividing the obtained score from the corresponding item numbers as indicated in the TOS by 10 and multiplying by 100.

2.4. Procedure

The following steps were taken in a methodical manner to get the required data:

Seeking Permission to Conduct the Study. The researcher wrote letters requesting permission to conduct the study to the Schools Division Superintendent of the Division of Davao de Oro and the principals of the participating high schools in the Nabunturan West District. Upon receiving confirmation and approval from the relevant authorities, the researcher proceeds to obtain informed assent from the identified student respondents.

Obtaining Informed Assent. Before administering the questionnaires, the researcher would ensure that all student respondents provided with informed assent. This process would involve explaining the purpose and nature of the study, the voluntary nature of participation, and the measures in place to protect the students' privacy and confidentiality. The students allowed to ask questions and address any concerns they have. Only after obtaining signed informed assent and consent forms from the students the researcher will administer the questionnaires.

Administering the Questionnaires. The researcher personally administered the questionnaires to the identified students. This would be done in coordination with the teachers in charge of the respective classes. Clear explanations of the questionnaire items were provided to ensure comprehensive understanding, and the students were given ample time to complete the questionnaires.

Data Gathering. After the students completed the questionnaires, the researcher gathered and encoded all the data into a personal computer. The completed dataset would be submitted to a statistician for statistical computation and analysis. Subsequently, the researcher would analyze and interpret the results for discussion and reporting in the study.

2.5. Data Analysis

The following statistical tools utilized to treat the data obtained in the study:

Mean. Mean was a measure of central tendency that represents the average value of a dataset, calculated by summing all values and dividing by the number of observations. In this study examining learning culture, emotional intelligence,

and problem-solving skills, this would be used to summarize the typical scores for each variable, providing a concise representation of the overall trends in the data. This will address statements of the problem numbers 1, 2, and 3.

Standard Deviation. Standard deviation was a statistical measure that quantifies the amount of variation or dispersion in a set of data values, indicating how much the data points typically differ from the mean. In this study examining learning culture, emotional intelligence, and problem-solving skills, this will be used to assess the spread of responses questionnaires for learning culture and emotional intelligence, as well as to analyze the distribution of scores in the problem-solving skills test, potentially revealing insights into the consistency or variability of these factors across the study population. This will address statements of the problem numbers 1, 2, and 3.

Pearson Product Moment Correlation. The Pearson product-moment correlation, commonly called Pearson r, was the most widely used measure of correlation. This would be used in order to find any association between the variables. This would be used to assess if there is any connection between the learning culture, emotional intelligence, and problem-solving skills. Moreover, this would address statement of the problem number 4.

Multiple Linear Regression. Multiple linear regression analysis was a set of statistical processes for estimating the relationships between a dependent variable and one or more independent variables. This would be used to determine if the learning culture and emotional intelligence are significant predictors of problem-solving skills of the students. Moreover, this would address the statement of the problem number 5.

2.6. Ethical Considerations

Bhashin (2020) defines ethical considerations as the concepts and ideals that must be upheld throughout the research process. In this study, the researcher will follow ethical guidelines to ensure responsible and ethical research techniques. This study addresses fundamental ethical factors such as social value, informed consent, research participants' vulnerability, risks and benefits, privacy and confidentiality, justice, transparency, and researcher qualifications.

Social Value. The main objective of this study was to determine the influence of the learning culture and emotional intelligence on the problem-solving skills of the students in Nabunturan West District in SY 2024-2025. The study's goal is to develop insights that can help teachers and students improve their mathematics education. This study's findings may help enhance instructional methods, identify effective teaching traits, and develop ways for establishing a good psychosocial environment conducive to improved student performance. The findings will be shared with stakeholders such as mathematics teachers, school administrators, lawmakers, and educational researchers in order to shape future educational practices and improve mathematics education. Furthermore, the study's findings may be published in academic journals, contributing to the ongoing discussion about increasing student math performance.

Informed Consent. All selected respondents got informed consent forms (ICFs) and assent forms. These documents will clearly state the researcher's name, institutional affiliation, the goal of the study, and the procedures used. Participants will be notified that their participation is entirely optional, and that they may withdraw from the study at any moment with no academic or professional implications. All potential hazards and benefits will be properly disclosed so that participants may make an informed decision about their participation.

Vulnerability of the Research Participants. Given that the study involved students, particular precautions will be taken to ensure that all participants completely comprehend the study's objectives and procedures. Participants will be notified that they have the option to skip any questions or withdraw from the study without affecting their academic standing. The researcher will also make sure that students are aware that they can ask questions at any moment during their research, and that they are supported if they feel uncomfortable during the process.

Risks, Benefits, and Safety. Participants in the study faced minimal risk. The intended benefits include the identification of psychosocial and instructional variables that can improve mathematics learning and performance. These discoveries may lead to the creation of more effective teaching methods and strategies for enhancing student performance. To minimize disturbance, the researcher will plan surveys and interviews at times and locations that are convenient for participants. Any expenses incurred, if applicable, will be repaid.

Privacy and Confidentiality of Information. The researcher protects the privacy and confidentiality of participants in accordance with the Data Privacy Act of 2012. All personally identifiable information and data collected will be securely maintained, with access restricted to the researcher. Data from surveys and questionnaires will be saved on

passwordprotected devices and backed up in secure cloud storage, with only the researcher having access. To maintain anonymity, all personal data will be permanently

3. RESULTS

This chapter presents the results obtained from the collected data and the subsequent analysis and interpretations based on the problem presented.

Table 2: Level of Learning Culture of the Schools in terms of Peers

Indicator	Mean	Descriptive Level
1. I feel free to approach my peers for help.	3.78	High
2. I am less anxious when applying my knowledge in mathematics in the presence of other peers.	3.52	High
3. I can communicate freely with my peers.	3.73	High
4. My peers are supportive to me.	3.82	High
5. My self-confidence is higher, and I am independent with my peers.	3.48	Moderate
6. I learn from my peers.	3.88	High
7. Being taught by my peers increases my interaction and collaboration with other students.	4.10	High
8. My ability to solve problems improves when I am able to ask a peer.	3.99	High
9. The feedback I receive from my peers is realistic and helpful.	3.91	High
Overall Weighted Mean	**3.80**	**High**

Table 3: Level of Learning Culture of the Schools in terms of Teaching Approaches

Indicators	Mean	Descriptive Level
1. I am encouraged to study in pairs or in group throughout the semester so that I can tell and explain the subject matter to each other.	3.76	High
2. Peers help me when processing the subject matter.	3.80	High
3. The course/subject is organized in a way that students can help each other.	4.04	High
4. Peers explain to me the subject matter.	3.84	High
5. I am encouraged to study for the examination in pairs or in groups.	3.80	High
6. It is allowed to conduct assignments in pairs or in groups.	3.85	High
7. There are possibilities to share my own experiences with peers.	3.91	High
8. During the course, the class is divided into groups to discuss, investigates or solve a problem.	3.88	High
9. Group assignments are assigned, in which one final report has to be handled in by each group.	4.05	High
10. I can share ideas with peers.	4.03	High
Overall Weighted Mean	**3.90**	**High**

Table 4: Level of Learning Culture of the Schools in terms of Learning Environment

Indicators	Mean	Descriptive Level
1. When I have to study something, the teacher tells me first why it is important to know about the subject.	3.99	High
2. The assignments we carry out relate to our daily lives. In these assignments, we have to apply what we have learned.	4.19	High
3. The teacher asks us what we have already know about the lesson topic.	4.21	High

4.	The teacher tells us what value the lesson topic has for future use.	4.30	High
5.	The teacher makes us think about the way we have to learn.	4.10	High
6.	We can determine ourselves how to carry out assignments the teacher gives.	3.91	High
7.	The teacher asks us to collect information independently on the lesson topic.	3.79	High
8.	I get assignments which require me to do research.	3.72	High
9.	In our lessons, we not only use textbooks but also other things like newspapers, the computer, or video.	4.13	High
10.	We are allowed to develop our own assignments to work on.	4.13	High
11.	We are allowed to develop assignments on our own, which we can carry out in our own way.	4.02	High
12.	We are allowed to decide for ourselves which tasks we work on.	3.78	High
	Overall Weighted Mean	**4.02**	**High**

Table 5: Level of Learning Culture of the Schools in terms of Learning Facilities

Indicators	Mean	Descriptive Level
In our school. . .		
1. the buildings are in good condition.	4.06	High
2. the cooling and/or lighting systems are in good condition.	3.90	High
3. adequate mathematics equipment, facilities, and materials.	3.82	High
4. adequate instructional space (e.g., classrooms).	4.04	High
5. adequate instructional materials in the library.	3.84	High
6. adequate textbooks and basic supplies.	3.91	High
7. adequate computers for instruction.	3.80	High
8. adequate multi-media resources for instruction.	3.70	High
9. adequate discipline and safety.	4.33	High
Overall Weighted Mean	**3.93**	**High**

Table 6: Summary of the Level of Learning Culture of the Schools

Indicators	Mean	Descriptive Level
1. Peers	3.80	High
2. Teaching Approaches	3.90	High
3. Learning Environment	4.02	High
4. Learning Facilities	3.93	High
Overall Weighted Mean	**3.92**	**High**

Table 7: Level of Emotional Intelligence in Terms of /ellbeing

Indicators	Mean	Descriptive Level
1. I generally don't find life pleasant.	3.38	High
2. I think I have a number of good qualities.	3.69	High
3. In general, I have good ideas about many things.	3.87	High
4. In general, I am happy with my life.	3.93	High
5. I'm sure I am a strong personality.	3.75	High
6. I usually believe that everything in my life will turn out as well as possible.	4.19	High
Overall Weighted Mean	**3.80**	**High**

Table 8: Level of Emotional Intelligence in Terms of Self-control

Indicators	Mean	Descriptive Level
1. I usually find it easy to manage my emotions.	3.46	High
2. I tend to change my mind often.	3.83	High
3. Overall, I can deal with stress.	3.64	High
4. Usually, if I want, I can control my emotions.	3.71	High
5. I tend to get involved in situations and then regret that I can't get out of them.	3.75	High
6. Others admire my calmness.	3.78	High
Overall Weighted Mean	**3.70**	**High**

Table 9: Level of Emotional Intelligence in Terms of Emotionality

Indicators	Mean	Descriptive Level
1. It's not difficult for me to express my emotions in words.	3.45	Moderate
2. I usually find it difficult to see the situation through the eyes of another person.	3.50	High
3. Often, I cannot understand what emotions I am experiencing at the moment.	3.80	High
4. My loved ones often complain that I treat them not the way I should.	3.51	High
5. I often find it difficult to show my feelings to loved ones.	3.95	High
6. I usually can "feel myself in someone else's shoes" and experience other people's emotions.	3.79	High
7. I usually take a break to reflect on my feelings.	3.95	High
Overall Weighted Mean	**3.71**	**High**

Table 10: Level of Emotional Intelligence in Terms of Sociality

Indicators	Mean	Descriptive Level
1. I can get along with people.	3.54	High
2. It can be difficult for me to stand for my rights.	3.59	High
3. Usually, I am able to influence the feelings of other people.	3.64	High
4. I would describe myself as a good negotiator.	3.18	Moderate
5. I tend to back down even if I know I'm right.	4.01	High
6. It seems to me that I have not the slightest influence on the feelings of other people.	3.68	High
Overall Weighted Mean	**3.61**	**High**

Table 11: Summary of the Level of Emotional Intelligence of the grade 10 students

Indicators	Mean	Descriptive Level
1. Wellbeing	3.80	High
2. Self-control	3.70	High
3. Emotionality	3.71	High
4. Sociality	3.61	High
Overall Weighted Mean	**3.72**	**High**

Table 12: Level of Performance of Grade 10 Students in Problem-Solving Skills in Terms of Understanding the Problem

Items	Mean	Mean Percentage	Sd	Descriptive Level
Understanding the Problem	5.59	56%	1.45	Moderately High

Table 13: Level of Performance of Grade 10 Students in Problem-Solving Skills in Terms of Devising the Plan

Items	Mean	Mean Percentage	Sd	Descriptive Level
Devising the Plan	5.02	50%	1.60	Moderately High

Table 14: Level of Performance of Grade 10 Students in Problem-Solving Skills in Terms of Carrying out the Plan

Items	Mean	Mean Percentage	Sd	Descriptive Level
Carrying out the Plan	5.72	57%	1.46	Moderately High

Table 15: Level of Performance of Grade 10 Students in Problem-Solving Skills in Terms of Looking Back

Items	Mean	Mean Percentage	Sd	Descriptive Level
Looking Back	6.06	60%	1.69	Moderately High

Table 16: Summary of the Level of Performance of Grade 10 Students in Problem-Solving

Items	Mean	Mean Percentage	Sd	Descriptive Level
Performance in Problem Solving Skills	22.39	55.97%	5.91	Moderately High

Table 17: Test of Relationship on Relationship Between Learning Culture and Problem-Solving Skills of Grade 10 Students

Variables	Mean	r-value	p-value	Remarks	Decision on H01
*Learning Culture	3.92	-0.027	0.655	No Significant Relationship	Accept H_{01}
* Problem-Solving Skills	22.39				

Table 18: Test of Relationship on Relationship Between Emotional Intelligence and Problem-Solving Skills of Grade 10 Students

Variables	Mean	r-value	p-value	Remarks	Decision on H02
*Emotional Intelligence	3.92	0.004	0.945	No Significant Relationship	Accept H_{02}
* Problem-Solving Skills	22.39				

Table 19: Test of Predictors of Learning Culture and Emotional Intelligence to Problem-Solving Skills of Grade 10 Students

Predictor	Standard Coefficient Beta	t-value	p-value	Remarks
Learning Culture	-0.0452	-0.595	0..552	No Significant Relationship
Emotional Intelligence	0.0309	0.407	0.684	No Significant Relationship

Holistic Model

R^2	F	df1	df2	p-value
0.00136	0.180	2	264	0.836

*Remarks: The overall model is Not Significant since p > 0.05***.**

4. CONCLUSION

The study on Grade 10 students reveals that the learning culture within their school environment is generally positive, with strong support from teachers and a conducive atmosphere for learning. Emotional intelligence among the students is also notably high, indicating their ability to manage emotions and social interactions effectively. However, despite these strengths, the students' problem-solving skills remain at Moderately High level, suggesting a significant gap in their ability to apply critical thinking and problem-solving strategies.

The analysis further shows that neither learning culture nor emotional intelligence has a significant direct impact on students' problem-solving skills in this context. This indicates that other factors beyond the measured learning environment and emotional competencies may be influencing problem-solving performance. Consequently, targeted interventions focusing specifically on problem-solving strategies and cognitive skills development are necessary to improve students' proficiency in this area.

Overall, while a supportive learning culture and strong emotional intelligence contribute positively to students' academic and social experiences, enhancing problem-solving skills requires dedicated instructional approaches and possibly additional resources to address this critical educational need.

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6. REFERENCES

[1]. Allen, L.M. & Smith, K.Q (2025). Factors Predicting Problem-Solving. *Journal of Psychology and Education, 79* (2), 456-478.

[2]. Belland, B. R., Kim, C., & Hannafin, M. J. (2019). *Scaffolding ill-structured problem solving in authentic contexts with argumentative hypermedia*. Educational Technology Research and Development, 67(1), 1-27.

[3]. Brackett, M. A., Rivers, S. E., & Salovey, P. (2022). *Emotional intelligence: Implications for personal, social, academic, and workplace success*. Social and Personality Psychology Compass, 16(3), e12656.
[4]. Bradberry, T., & Greaves, J. (2009). Emotional intelligence 2.0. Talent Smart.
[5]. Brown, A., Davis, B., & Wilson, C. (2024). *Fostering a growth mindset culture: Impact on student resilience and problem-solving*. Journal of Educational Psychology, *116*(5), 789-805.
[6]. Chen, L., & Davis, A. (2018). *Promoting effective communication skills in schools: A practical guide*. Journal of Educational Psychology, 110(3), 345-360.
[7]. Chen, X. & Garcia, M. (2024). Factors of academic performance in school children. *Journal of School Psychology, 56*(1), 234-256
[8]. Davis, A. B., et al. (2023). *School climate and academic outcomes: A multilevel analysis*. Journal of Educational Research, *96*(2), 123-135.
[9]. Elias, M. J., Zins, J. E., Weissberg, R. P., Frey, K. S., Greenberg, M. T., Haynes, N. M., ... & Shriver, T. P. (2018). *Promoting social and emotional learning: Guidelines for educators*. Association for Supervision and Curriculum Development.
[10]. Garcia, M., & Lee, S. (2024). *Collaborative learning and the development of critical thinking skills*. Educational Researcher, 53(2), 123-138.
[11]. Garcia, M., & Lee, S. (2025). *Contextual factors influencing the relationship between learning culture and student outcomes*. Educational Researcher, *54*(2), 123-138.
[12]. Goleman, D. (2020). *Emotional intelligence: Why it can matter more than IQ*. Bantam Books.
[13]. Gunawan, R. G., Mudjiran, M., Suherman, S., Yerizon, Y., Musdi, E., Armiati, A., & Rozika, E. (2023). An Analysis of Mathematical Problem-Solving Skills of Junior High School Students. *Indonesian Journal of Science and Mathematics Education*, *6*(3), 351. https://doi.org/10.24042/ijsme.v6i3.18062
[14]. Johnson, R., Williams, K., & Anderson, P. (2022). *The impact of school learning culture on student achievement*. American Educational Research Journal, 59(4), 789-805.
[15]. Kim, H. J., & Lee, S. R. (2025). *Limitations of broad psychological constructs in predicting academic skills*. Educational Psychology Review, *37*(1), 45-60.
[16]. Kim, J., Park, H., & Lee, H. (2019). *The effects of peer tutoring on student learning outcomes*. Review of Educational Research, 89(1), 56-78.
[17]. Martinez, E., Rodriguez, A., & Smith, J. (2025). *Peer support and student well-being: A longitudinal study*. Journal of School Psychology, 63(1), 45-60.
[18]. Nguyen, T., & Tran, L. (2024). *Predictors of academic success: A meta-analysis*. Review of Educational Research, *84*(3), 321-340.
[19]. Parker, J. D. A., Summerfeldt, L. J., Hogan, M. J., & Majeski, S. A. (2018). *Emotional intelligence and academic success: Examining the transition from high school to university*. Personality and Individual Differences, 41(6), 1037-1048.
[20]. Romero, A., Gomez, L., & Fernandez, C. (2024). *Metacognitive skills and problem-solving performance: A longitudinal study*. Journal of Educational Psychology, 116(2), 234-248.
[21]. Smith, T., & Brown, L. (2023). *Teacher-student relationships and student engagement: A meta-analysis*. Educational Psychology Review, 35(1), 1-20.
[22]. Smith, J., & Jones, R. (2020). *The impact of collaborative learning on problem-solving abilities*. Journal of Research in Education, 30(3), 456-470.
[23]. Verzosa-Quinto, E. M., & Mabansag, A. B. (2023). Error Analysis in Solving Word Problems among Grade-8 Students. *International Journal of Current Science Research and Review*, *06*(10). https://doi.org/10.47191/ijcsrr/v6-i10-10
[24]. Weissberg, R. P., Durlak, J. A., Domitrovich, C. E., & Gullotta, T. P. (Eds.). (2015). *Social and emotional learning: Past, present, and future*. Guilford Press.
[25]. Zawojewski, J. S., & Cai, J. (2020). Looking back to move forward: A review of research on mathematical problem solving. In R. E. Schaffhauser, M. R. Steele, & S. Hsi (Eds.), Proceedings of the 22nd annual conference on research in undergraduate mathematics education (pp. 954-962). San Diego, CA: University of California San Diego.
[26]. Zhang, S., Li, H., Wen, Y., Zhang, Y., Guo, T., & He, X. (2023). Exploration of a group assessment model to foster student teachers' critical thinking. *Thinking Skills and Creativity*, *47*, 101239. https://doi.org/10.1016/j.tsc.2023.101239

BIOGRAPHIES

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