# Multiple Intelligence and Emotional Intelligence as Predictors of Students' Engagement among Senior High School Students

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## ABSTRACT

This study dealt with the influence of multiple intelligence and emotional intelligence to students' engagement of senior high school students in Lorenzo S. Sarmiento Sr. National High School. The primary goal of the study was to determine the level of multiple intelligence, emotional intelligence, and students' engagement in terms of their respective indicators, the significant relationship between multiple intelligence and students' engagement, and emotional intelligence and students' engagement, and what domains of multiple intelligence and emotional intelligence substantially influence students' engagement. Also, this study utilized a quantitative-correlational design with 274 respondents among Senior High School Students in Lorenzo S. Sarmiento Sr. National High School. The average weighted mean, Pearson R, and multiple regression analysis were the statistical tools used in this study. Along with this, results showed a high level of multiple intelligence among Senior High School students in terms of interpersonal, intrapersonal, and verbal. In the same manner, the results also showed high level of emotional intelligence in terms of self-awareness, managing emotions, motivating oneself, empathy, and social skills. Likewise, result showed a high level of students' engagement in the Senior High School Students regarding behavioral engagement, cognitive engagement, and emotional engagement. In addition, there was a moderate correlation, and a significant relationship between multiple intelligence and students' engagement, and emotional intelligence and students' engagement. Hence, this led to the rejection of the null hypothesis. Also, all domains of multiple intelligence significantly influenced students' engagement, however four (4) out of five (5) domains of emotional intelligence significantly influenced students' engagement. Therefore, the students may continue to enhance their multiple intelligence and emotional intelligence enabling students to actively engage in their studies and contribute to academic excellence.

Keywords: GAS, Multiple Intelligence, Emotional Intelligence, Students' Engagement, Philippines

## INTRODUCTION

An international study led by the University of California Los Angeles (UCLA) and British universities discovered that a substantial forty percent (40%) of students globally frequently experienced boredom, with fewer than twenty percent (20%) actively engaging in classroom discussions, primarily due to a lack of interest and engagement (Subramainan & Mahmoud, 2020). Additionally, in the United States, it was found out that seventy-two percent (72%) of students reported decreased engagement during live lectures, struggled with staying connected to peers and instructors, and managing the pace of coursework (Hollister et al., 2022). Moreover, a study conducted at the University of London exposed that educators faced

significant challenges in students' engagement, influenced by trauma, exhaustion, and hopelessness, despite the lack of difference in teaching methods (Wu, 2022).

In the Philippines particularly at Kabankalan City, Multiple Intelligence (MI) resonated with many educators that gave an idea to create a relatively even distribution of students of different abilities and diverse educational needs and it was found out that teachers who based their instructional practices on multiple intelligence had more authentic classrooms, and students were more genuinely engaged in class (Badajos, 2020). To add, the significance of multiple intelligences in enhancing student engagement lay in the teacher's ability to challenge students by setting an effective standard for further achievement and assessing their progress (Padernal & Diego, 2020). Furthermore, studies by Gonzales and Montoya (2019) at Pangasinan State University found out that students should be able to identify and maximize their full learning potential using their dominant multiple intelligence in the entire learning process.

On the other hand, a study conducted at Manila by Lucero and Ocampo (2019) discovered that emotional intelligence was a vital factor for having success in social institutions, because it showed how an individual applied knowledge to different circumstances in life.  More so, emotional intelligence was important because it improved an individual's relationship with themselves and their relationships with other people (Conklin et al., 2022). Accordingly, Ybanez (2018) posited that emotional intelligence as handling relationship and knowing one's emotion were found out to be significantly and positively associated with students' engagement.

In the context of Davao City, a study conducted by Suguis and Belleza (2022) revealed a compelling insight that students were significantly more prone to disengagement and a lack of interest in class when they did not feel actively engaged in their school environment. Additionally, it was found out that there were prevalent problems of poor student engagement and a rising number of disengaged learners (Bendejo & Gempes, 2019). Furthermore, in Lorenzo S. Sarmiento Sr. National High School, the researchers had observed that some students opted to be isolated, did not possess interest in class discussions and disengage themselves from their peers and teachers.  Consequently, this research was dedicated to investigate the potential correlations between multiple intelligences and emotional intelligence towards students' engagement.

Although, there was a study on students' engagement in Lorenzo S. Sarmiento Sr. National High School, however, the researchers did not come across any study that was conducted specifically on the relationship of multiple intelligence and emotional intelligence to students' engagement in the school setting. This study aimed to identify factors that would contribute to students' engagement, specifically exploring how multiple intelligence and emotional intelligence related to students' engagement. The findings of this study would serve as a valuable resource for shaping effective students' engagement programs that prioritize multiple intelligence and emotional intelligence as essential factors. Hence, this investigation was undertaken withinthe educational context, with a specific focus on evaluating the role of multiple intelligence and emotional intelligence in enhancing student engagement.

## Research Objectives

This quantitative study described the influence of multiple intelligence and emotional intelligence on the students' engagement of senior high school students. Specifically, the study sought to answer the following objectives:

1. To determine the level of multiple intelligence of senior high school students in terms of:

    1.1 interpersonal;
    1.2 intrapersonal; and

1.3 verbal.

2. To determine the level of emotional intelligence of senior high school students in terms of:

    2.1 self-awareness;
    2.2 managing emotions;
    2.3motivating oneself;
    2.4 empathy; and
    2.5social skills.

3. To determine the level of students' engagement of senior high school students in terms of:

    3.1 behavioral engagement;
    3.2 cognitive engagement; and
    3.3 emotional engagement.

4. To determine the significant relationship between multiple intelligence and students' engagement among senior high school students.

5. To determine the significant relationship between emotional intelligence and students' engagement among senior high school students.

6. To determine which domains of multiple intelligence significantly influence students' engagement among senior high school students.

7. To determine which domains of emotional intelligence significantly influence students' engagement among senior high school students.

## METHODOLOGY

This study used a quantitative, non-experimental research design utilizing a correlational technique. This method was used when the objective was to describe the status of the situation as it existed at the time of the study in order to explore the causes of a particular phenomenon. In correlational research, it involved collecting data in order to determine whether the degree of a relationship exists between two more quantifiable variables (Gay, 2006).

**Population and Sample**

Simple random sampling was used in the selection of respondents. The subjects of this study were the 274 students at senior high school in Lorenzo S. Sarmiento Sr. National High School in the school year 2023-2024. They were considered as ideal respondents for this study as they offered insights into how multiple intelligence and emotional intelligence influence engagement, informing the development of targeted educational strategies.

**Statistical Tool**

The following statistical tools were utilized for the data analysis and interpretation.

**Mean.** This statistical tool was used to determine the level of multiple intelligence, emotional intelligence, and students' engagement among senior high school students at Lorenzo S. Sarmiento Sr. National High School.

**Pearson (r).** This statistical tool was used to determine the significance of the relationship between multiple intelligence and students' engagement and emotional intelligence and students' engagement among senior high school students at Lorenzo S. Sarmiento Sr. National High School.

**Multiple Regression Analysis**. This statistical tool is used to determine the influence of the multiple intelligence and emotional intelligence on students' engagement in Lorenzo S. Sarmiento Sr. National High School.

# RESULTS

## Level of Multiple Intelligence

Shown in Table 1 are the mean scores for the indicators of multiple intelligence among senior high school students in Lorenzo S. Sarmiento Sr. National High School with an overall mean of 3.85 and described as high with a standard deviation of 0.72. The high level could be attributed to the high rating given by the respondents in all indicators. This entails that the respondents' responses to the level of multiple intelligence are often manifested in terms of interpersonal, intrapersonal, and verbal.

The cited overall mean score was the result obtained from the following computed mean scores from highest to lowest: 4.03 or high for intrapersonal with standard deviation of 0.75; 3.77 or high for verbal with standard deviation of 0.83; and 3.75 or high for interpersonal with standard deviation of 0.59.

Table 1. Level of Multiple Intelligence

| Indicator | Mean | SD | Descriptive Level |
|---|---|---|---|
| Interpersonal | 3.75 | 0.59 | High |
| Intrapersonal | 4.03 | 0.75 | High |
| Verbal | 3.77 | 0.83 | High |
| Overall | 3.85 | 0.72 | High |

## Level of Emotional Intelligence

Shown in Table 2 are the mean scores for the indicators of emotional intelligence among senior high school students in Lorenzo S. Sarmiento Sr. National High School with an overall mean of 3.90 and described as high with a standard deviation of 0.64. The high level could be attributed to the high rating given by the respondents in all indicators. This entails that the respondents' responses to the level of emotional intelligence are often manifested in terms of self-awareness, managing emotions, motivating oneself, empathy and social skills.

The cited overall mean score was the result obtained from the following computed mean scores from highest to lowest: 3.99 or high for motivating oneself with standard deviation of 0.66; 3.94 or high for self-awareness with standard deviation of 0.65; 3.89 or high for empathy with standard deviation of 0.63; 3.87 or high for managing emotions with standard deviation of 0.59; and 3.80 or high for social skills with standard deviation of 0.66.

Table 2. Level of Emotional Intelligence

| Indicator | Mean | SD | Descriptive Level |
|---|---|---|---|
| Self-Awareness | 3.94 | 0.65 | High |
| Managing Emotions | 3.87 | 0.59 | High |

| | | | |
|---|---|---|---|
| Motivating Oneself | 3.99 | 0.66 | High |
| Empathy | 3.89 | 0.63 | High |
| Social Skills | 3.80 | 0.66 | High |

**Level of Students' Engagement**

Shown in Table 3 are the mean scores for the indicators of students' engagement among senior high school students in Lorenzo S. Sarmiento Sr. National High School with an overall mean of 3.90 and described as high with a standard deviation of 0.67. The high level could be attributed to the High rating given by the respondents in all indicators. This entails that the respondents' responses to the level of students' engagement are often manifested in terms of behavioral, cognitive, and emotional.

The cited overall mean score was the result obtained from the following computed mean scores from highest to lowest: 3.98 or high for behavioral engagement with standard deviation of 0.68; 3.94 or high for emotional engagement with standard deviation of 0.67; and 3.77 or high for cognitive engagement with standard deviation of 0.65.

Table 3. Level of Students' Engagement

| Indicator | Mean | SD | Descriptive Level |
|---|---|---|---|
| Behavioral engagement | 3.98 | 0.68 | High |
| Cognitive engagement | 3.77 | 0.65 | High |
| Emotional engagement | 3.94 | 0.67 | High |
| Overall | 3.90 | 0.67 | High |

**Significance on the Relationship between Multiple**

**Intelligence and Students' Engagement**

The results revealed that multiple intelligence versus students' engagement has a significant relationship. This result is due to a p-value of <.001, which is less than the 0.05 p-value. Hence, this led to the decision that the null hypothesis, which stated that there is no significant relationship between multiple intelligence and students' engagement among the senior high school students at Lorenzo S. Sarmiento Sr. National High School is rejected. Moreover, Pearson's R value, which is 0.623 further means that there is a moderate correlation between multiple intelligence and students' engagement.

**Significance on the Relationship between Emotional**

**Intelligence and Students' Engagement**

The results revealed that emotional intelligence versus students' engagement has a significant relationship. This result is due to a p-value of <.001, which is less than the 0.05 p-value. Hence, this led to the decision that the null hypothesis, which stated that there is no significant relationship between emotional intelligence and students' engagement among the senior high school students at Lorenzo S. Sarmiento Sr. National High School is rejected. Moreover, Pearson`s R value which is 0.661 further means that there is a moderate correlation between emotional intelligence and students` engagement.

**Multiple Regression Analysis of the Influence of Multiple Intelligence on Students' Engagement**

Using the Multiple Regression Analysis, the data revealed that the influence of multiple intelligence towards

students' engagement among senior high school students has f-value of 56.981 and corresponding significance p-value of <.001 which was significant.

This means that the usage of multiple intelligence influences the students' engagement among senior high school students in Lorenzo S. Sarmiento Sr. National High School since the probability is less than 0.05. The R squared of 0.388 implies that 38.8% of the students' engagement among senior high school students of Lorenzo S. Sarmiento Sr. National High School is influenced by the usage of multiple intelligence, while 61.2% remaining were not covered by the study and is influenced by other factors.

**Multiple Regression Analysis of the Influence of Emotional Intelligence on Students' Engagement**

Using the Multiple Regression Analysis, the data revealed that the influence of emotional intelligence towards students' engagement among senior high school students has f-value of 47.357 and corresponding significance p-value of <.001 which was significant.

This means that the usage of emotional intelligence influences the students' engagement among senior high school students in Lorenzo S. Sarmiento Sr. National High School since the probability value is less than 0.05. The R squared of 0.469 implies that 46.9% of the students' engagement among senior high school students of Lorenzo S. Sarmiento Sr. National High School is influenced by the usage of emotional intelligence, while 53.1% remaining were not covered by the study and is influenced by other factors.

# DISCUSSIONS

### Level of Multiple Intelligence

The respondents' level of multiple intelligence in Lorenzo S. Sarmiento Sr. National High School was high. This meant that the different multiple intelligences among senior high school students in Lorenzo S. Sarmiento Sr. National High School were often manifested. This further meant that their class often manifested the multiple intelligence approach in which the students were required to play an active role in the classroom, as to intrapersonal, which included fostering independent thinking, enhancing self-awareness, promoting personal responsibility for learning, and encouraging students to develop a deeper understanding; verbal, which meant when students enjoyed reading all kinds of materials. Thus, they were more likely to take notes in class to remember and understand the lessons from the teacher; and interpersonal, which meant that interaction between their co-learners effectively constructed their knowledge, and students were motivated to learn when they interacted with each other.

This result was in relation to the proposition of Ahvan and Pour (2018), in which the multiple intelligence of senior high school students contributed to an awareness of the self-knowledge and abilities of the students, as well as to the development and enhancement of their engagement and to be a reference for further study. This conforms to the statement of Torreon and Sumayang (2021), stating that multiple intelligence predicts pupils' academic success, and students engage well and develop their abilities when their school uses a variety of intelligence-based lessons. The findings further supported Sener and Cokcaliska's (2018) claim that combining learning styles with dominant intelligence according to Gardner's multiple intelligence enhances learning processes among the students.

### Level of Emotional Intelligence

The respondents' level of emotional intelligence in Lorenzo S. Sarmiento Sr. National High School was high. This means that the different emotional intelligence among senior high school students in Lorenzo S. Sarmiento Sr. National High School was often manifested. This further means that their class often manifested the emotional intelligence approach in which the students were required to play an active role in

the classroom, as to self-awareness, which signifies a heightened understanding of one's own emotions, strengths, weaknesses, and overall identity; motivating oneself, which is a strong inner drive that pushes students toward their goals, even when facing challenges; social skills, which involves the ability to engage in effective communication and interactions with classmates and others within the school; empathy, which means the capacity to genuinely share in the emotions of their peers, demonstrating a willingness to provide support and comfort; and managing emotions, which involves not only recognizing and understanding their own emotions but also effectively regulating and expressing them.

This result is in relation to the proposition of Iqbal et al. (2022), stated emotional intelligence was a main area in educational psychology and a key factor in the academic life of students and it dealt with deviant behavior through self-awareness and self-motivation, regulates emotional and social skills, and converts emotional energy into positive. Moreover, this connotes to the statement of Sharon and Grinberg (2018) posited that emotional intelligence (EI) reflects the general capacity to comprehend emotions (in ourselves and in others), to regulate emotions, and to cope effectively with emotional situations.

## Level of Students' Engagement

The respondents' level of students' engagement at Lorenzo S. Sarmiento Sr. National High School was high. This means that different kinds of students' engagement were manifested among senior high school students. This also elicits the fact that students consider students' engagement a crucial aspect of learning and achievement in academic contexts. This result is symmetrical with the work of Cavanagh et al. (2020), in which students are more likely to participate actively when they feel a sense of identity and a sense of belonging that takes into account their varied backgrounds and promotes inclusivity and connectedness. Moreover, the standpoint of Lei et al. (2019) also indicates that they are likely to be more attentive, participative, and receptive to instruction during classes and also suggests that they are eager to acquire new skills, apply knowledge, and demonstrate their abilities in various areas related to their program. Furthermore, the viewpoint of Bond et al. (2020) is also providing students opportunities to participate more actively in the learning community reflects positively on student engagement.

## Significance on the Relationship between Multiple

## Intelligence and Students' Engagement

The present study reveals a significant relationship between multiple intelligence and students' engagement among senior high school students in Lorenzo S. Sarmiento Sr. National High School. This implies that multiple intelligence influences students' engagement among the students of senior high school, which can be seen in the data. This confirms the main anchored theory of this study, the Triarchic theory by Sternberg and Clarke (1986), which claims that individuals possess various cognitive abilities, some of which align with multiple intelligences, and these diverse intellectual strengths can potentially influence students' engagement in learning. Inclined to the outcome, Torreon and Sumayang (2021) study says multiple intelligences can predict academic success and students engaged well and develop their abilities when their schools use a variety of intelligence-based lessons. These attributes of multiple intelligence can have influence on students' engagement in an organization.

## Significance on the Relationship between Emotional

## Intelligence and Students' Engagement

The present study reveals a significant relationship between emotional intelligence and students' engagement among senior high school students in Lorenzo S. Sarmiento Sr. National High School. This implies that emotional intelligence influences students' engagement among the students of senior high

school, which can be seen in the data. This confirms the main anchored theory of this study, the Triarchic theory by Sternberg and Clarke (1986), which claims that individuals possess various cognitive abilities, and these diverse intellectual strengths can potentially influence students' engagement in learning. Inclined to the outcome, Tripathy (2018) which stated that developing emotional intelligence through its numerous components, which enhance students` engagement. These attributes of emotional intelligence can have influence on students' engagement in an organization.

**Multiple Regression Analysis of the Influence of Multiple Intelligence on Students' Engagement**

Using the Multiple Regression in JASP Software, the data revealed that the multiple intelligence and students' engagement among the senior high school students has a significant influence. Only 38.8% of the students' engagement among senior high school students of Lorenzo S. Sarmiento Sr. National High School is influenced by the usage of multiple intelligence. The overall results of the multiple intelligence predict students' engagement among senior high school students. Therefore, the significance level of hypothesis of multiple intelligence and students' engagement among the senior high school students is rejected.

Correspondingly, this result supports the analysis of Yavich and Rotnitsky (2020), which have pointed out that the students apply what they learn in the classroom by using the specific multiple intelligences have significant influence can enhance the students' engagement by which combined effectively enhances the overall learning process. Moreover, the perspective of Reeve et al. (2004) stated that to boost students' engagement by the use of multiple intelligence that empowers students for becoming more confident and engaged learners. To boot, the attestation of Candler (2018), in which by incorporating multiple intelligences within instructional strategies keeps students engaged and gives students the potential to be avid learners in all subjects.

**Multiple Regression Analysis of the Influence of Emotional Intelligence on Students' Engagement**

Using the Multiple Regression in JASP Software, the data revealed that the emotional intelligence and students' engagement among the senior high school students has a significant influence. Only 46.9% of the students' engagement among senior high school students of Lorenzo S. Sarmiento Sr. National High School is influenced by the usage of emotional intelligence. The overall results of the emotional intelligence predict students' engagement among senior high school students. Therefore, the significance level of hypothesis of emotional intelligence and students' engagement among the senior high school students is rejected.

Fortunately, this result supports the analysis of Kumar (2020), which have pointed out that by prioritizing emotional intelligence in students, and its focus is expected to result in improved student engagement and equip them with valuable skills for both personal and professional aspects of life. As indicated by Maiquez et al. (2018), students' emotional intelligence plays a pivotal role by enabling them to understand their emotions and effectively navigate their educational journeys, ultimately fostering increased student engagement. Furthermore, in other perspective of Delhi (2019), emotional intelligence emphasizes a person's intellect and focuses on how they control and manage their emotions and how they express them healthily and constructively.

# CONCLUSION

The findings of the study are used to draw conclusions. The level of multiple intelligence among students of senior high school in Lorenzo S. Sarmiento Sr. National High School is high for interpersonal, high for intrapersonal, and high for verbal, thus the overall mean is high for the level of multiple intelligence. On the other hand, the level of emotional intelligence among students of senior high school in Lorenzo S. Sarmiento Sr. National High School is high for self-awareness, high for managing emotions, high for motivating oneself, high for empathy, and high for social skills, thus the overall mean is high for the level of

emotional intelligence. The level of students' engagement among senior high school students of Lorenzo S. Sarmiento Sr. National High School is high for behavioral engagement, high for cognitive engagement, and high for emotional engagement, thus the overall mean is high for the level of students' engagement. Moreover, the findings opposed the theoretical assumption of no significant relationship between multiple intelligence and students' engagement and emotional intelligence and students' engagement among senior high school students of Lorenzo S. Sarmiento Sr. National High School.

Contrary to the assumption, the study concludes that multiple intelligence and students' engagement and emotional intelligence and student's engagement were positively correlated. That was, change in the level of multiple intelligence and emotional intelligence affects the level of students' engagement. Further, there are three out of the three domains in multiple intelligence and there are four out of five domains in emotional intelligence significantly influence the students' engagement of senior high school students in Lorenzo S. Sarmiento Sr National High School.

# REFERENCES

1. Andreani, W. (2018). Emotional Intelligence, Self-Esteem and Academic Achievement: A Case Study, English Department Students. Humaniora, 3(1), 98. https://doi.org/10.21512/humaniorav3i1.3239
2. Astuti, E., Sri, W., Sri, K. & Kasmui. Journal Of Education and Learning,(2019). 13(4),502-209.
3. Badajos, L. M., & Diego, C. V. (2020). Practices of Multiple Intelligence Instruction and Teaching Performance of Public Elementary School Teachers. Philippine Social Science Journal, 3(2), 59-60. https://doi.org/10.52006/main.v3i2.274
4. Bordei, S. (2018). How can one possibly determine the multiple intelligences? Journal Plus Education, 18(2), 204-212. https://doi.org/10.24250/jpe/2/2017/SB
5. Clarke, A. M., & Sternberg, R. J. (1986). Beyond IQ: A Triarchic Theory of Human Intelligence. British Journal of Educational Studies, 34(2), 205. https://doi.org/10.2307/3121332
6. Deci E. L., Ryan R. M., Guay F. (2013). Self-determination theory and actualization of human potential. In McInerney D. M., Marsh H. W., Craven R. G., Guay F. (Eds.), International advances in self research. Theory driving research: New wave perspectives on self-processes and human development (pp. 109–133). IAP Information Age Press.
7. Ferrero, M., Vadillo, M. A., and León, S. P. (2021). A valid evaluation of the theory of multiple intelligences is not yet possible: problems of methodological quality for intervention studies. Intelligence 88:101566. Doi: 10.1016/j.intell.2021.101566
8. Morgan, H. (2018). An analysis of gardners theory of multiple intelligence. Roeper Review, 18(4), 263–269. https://doi.org/10.1080/02783199609553756
9. Santos, A., Wang, W., & Lewis, J. (2018). Emotional intelligence and Career decision-making difficulties: The mediating role of career Decision self-efficacy. Journal of Vocational Behavior, 107, 295-309.https://doi.org/10.1016/j.jvb.2018.05.008
10. Zarrintaj, A., Z.S.Z. Sharifah, H. Abdul Samad and S. Mahyar, 2013. Relationship between awareness, knowledge and attitudes Towards environmental education among secondary school students in Malaysia. World Applied Sciences Journal, 22(9): 1326–1333.