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Emotional Education and Academic Performance: A Quantitative Approach

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ABSTRACT

Emotional education has gained increasing attention in educational psychology due to its potential influence on students' academic outcomes. This study investigates the relationship between emotional education and academic performance in high school students using a quantitative methodology. A sample of 312 students aged 12 to 16 completed validated questionnaires that assessed emotional intelligence and academic performance. The results indicate a significant positive correlation between emotional competencies and academic performance, supporting the hypothesis that emotional education improves learning experiences and student outcomes. These findings suggest that integrating emotional education into curricula can serve as a strategy to improve academic outcomes.

Keywords: emotional education, emotional intelligence, academic performance, secondary education, quantitative analysis

Introduction

In recent years, interest in emotional education has grown significantly, especially in the school environment, where its potential to promote not only psychological well-being, but also students' academic performance is recognized (Bisquerra & Pérez, 2020). This educational approach is based on the idea that emotions are not alien to learning, but constitute an essential component of it. Various studies have shown that the way students manage their emotions directly influences their ability to concentrate, solve problems, set goals, and persevere in the face of difficulty (Extremera, Rey, & Sánchez-Álvarez, 2022).

Academic learning has traditionally placed the emphasis on the development of cognitive skills, leaving the emotional aspects of the student in the background. However, it has been shown that students with

higher emotional competencies tend to show higher levels of intrinsic motivation, self-regulation, and social skills, which has a positive impact on their school performance (Salavera, Usán, & Teruel, 2021). This educational paradigm shift has led to the development of social-emotional education programs in school contexts, which aim to explicitly teach skills such as emotional awareness, self-regulation, empathy, and responsible decision-making (Durlak et al., 2020).

From a neuroeducational perspective, it has been established that emotions affect the processes of attention, memory, and reasoning, fundamental cognitive functions for learning (Arias, Castillo, & Morales, 2021). The emotional brain and the rational brain work interdependently, and when students experience anxiety, stress, or demotivation, their ability to learn can be severely limited. For this reason, attending to the emotional component in the classroom becomes a key strategy not only for the well-being of students, but also to improve their academic results.

Despite the growing literature on emotional intelligence, there are still empirical gaps in relation to its practical application in school contexts and its direct link to academic performance. Many studies have adopted qualitative or theoretical approaches, but more quantitative evidence is required to establish robust statistical relationships between the variables involved (Thomas & Allen, 2020). In response to this need, the present study aims to quantitatively analyze the relationship between emotional education —measured through perceived emotional intelligence— and academic performance in secondary school students.

This analysis not only provides a more precise view of how emotions influence learning, but can also support the implementation of more comprehensive educational programs, aimed at the complete development of students' competencies. In addition, considering the post-pandemic context and the emotional impact derived from confinement and virtual teaching, the study of emotional education acquires even greater relevance in the design of current educational policies (Sánchez-Pujalte et al., 2021).

Theoretical Framework

1. Emotional Education: Definition and Approaches

Emotional education is a continuous and systematic educational process that aims to develop emotional competencies such as emotional awareness, self-regulation, emotional autonomy, social skills, and competencies for life and well-being (Bisquerra & Pérez, 2020). This is a key dimension in the integral formation of the human being, especially in the school context, where emotions influence both learning and interpersonal relationships (Méndez & Castaño, 2020).

This approach is based on a preventive and well-being-promoting perspective, beyond the treatment of specific emotional difficulties. In this sense, emotional education programs allow students to manage their emotions, increase their self-esteem, and establish healthy relationships with their peers and teachers (Fernández-Berrocal & Extremera, 2021).

2. Emotional Intelligence: Models and Components

Emotional intelligence (EI), understood as the ability to perceive, understand, manage and use emotions effectively, is one of the fundamental concepts on which emotional education is based. Among the most influential models is the skills model of Mayer and Salovey (1997), which has been expanded in educational applications in recent years. This model contemplates four branches: emotional perception, emotional facilitation of thought, emotional understanding and emotional regulation.

From an applied perspective, Goleman's model (1995, updated by Goleman & Davidson, 2020) adds socio-emotional competencies such as empathy, social skills, and self-motivation, emphasizing their relevance in the school environment. Recent research confirms that students with higher levels of EI have higher levels of resilience, self-efficacy, and academic performance (Ramos-Díaz et al., 2022).

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3. Emotional Education and Academic Performance

Numerous studies have shown a positive and significant relationship between emotional intelligence and academic performance. Emotional regulation, in particular, has been highlighted as a key factor in stress management, coping with frustration, and perseverance in the face of academic challenges (Extremera et al., 2022).

In addition, social-emotional learning (SEL) programs have been shown to improve not only psychological well-being, but also academic outcomes, prosocial behavior, and reduction of problem behaviors (Taylor et al., 2020). These findings support the need to integrate emotional education into the school curriculum, especially at compulsory educational levels.

4. Neuroeducation and Executive Functions

From the field of neuroeducation, it has been argued that emotions directly influence executive functions such as attention, working memory, and inhibitory control, which are fundamental for learning (Immordino-Yang & Darling-Hammond, 2019). In this way, the development of emotional competencies not only benefits the school climate, but also enhances key cognitive skills for academic success.

Table 1. Main theoretical approaches on Emotional Education and Academic Performance

Author(s)	Approach / Model	Key Contribution
Bisquerra & Pérez (2020)	Emotional Competencies Model	It defines five basic competencies for emotional education in school contexts.
Mayer & Salovey (1997)	Skills model	It proposes a cognitive approach to EI based on emotional skills.
Goleman & Davidson (2020)	Mixed model of EI	It integrates emotional and social competencies, oriented to performance.
Extremera et al. (2022)	Meta-analysis on EI and performance	It confirms a significant correlation between EI and academic performance.
Taylor et al. (2020)	SEL Program Evaluation	Demonstrates positive impact on academic achievement and emotional well-being.
Immordino-Yang & Darling-Hammond (2019)	Neuroeducation	Relates emotions to executive functions essential for learning.

Methodology

1. Research Approach and Design

The present research adopts a **quantitative correlational approach**, with the purpose of analyzing the relationship between the variables emotional education and perceived emotional intelligence and the academic performance of secondary school students. This type of design allows statistical associations between variables to be identified without intentionally manipulating any of them (Creswell & Creswell, 2018). In addition, a **non-experimental cross-sectional** design was chosen, since data collection was carried out at a single time point (Hernández-Sampieri et al., 2022).

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2. Participants

The sample was composed of **312 students** between 12 and 16 years of age, belonging to three urban, public and private educational institutions, located in a medium-sized city in Latin America. A **stratified random sampling was used**, segmented by grade (from 1st to 4th year of secondary school) and gender, with the aim of guaranteeing equitable representativeness.

All participants had the authorization of their legal representatives through informed consent, and the study was approved by the corresponding institutional ethics committee.

Table 1. Distribution of the Sample by Course and Gender

Course	Male	Female	Total
1st Secondary	39	41	80
2nd Secondary	36	40	76
3rd Secondary	38	34	72
4th Secondary	41	43	84
Total	**154**	**158**	**312**

3. Data Collection Instruments

Two main instruments were used:

1. **Trait Meta-Mood Scale-24 (TMMS-24):** Validated self-administered questionnaire for adolescents in Spanish, developed to measure **perceived emotional intelligence** in three dimensions: emotional attention, emotional clarity, and emotional repair (Fernández-Berrocal et al., 2018). It has demonstrated adequate levels of reliability ($\alpha > .80$) in similar samples (Extremera et al., 2022).
2. **Average of school grades**: The **final average of the previous quarter was** obtained, delivered by the academic coordinators of the participating institutions, as an objective measure of academic performance.

Both instruments were digitized and applied in sessions organized in the schools themselves, guaranteeing the confidentiality and anonymity of the participants.

4. Procedure

The procedure consisted of three phases:

- **Phase 1: Institutional coordination**: Contact with school directors and signing of collaboration agreements.
- **Phase 2: Application of instruments**: Carried out in computer classrooms with supervision by researchers and teachers.
- **Phase 3: Statistical analysis**: The data were entered and filtered in SPSS v.27. Descriptive analyses, Pearson correlations, and linear regressions were performed to examine the relationship between emotional intelligence and academic performance.

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5. Data Analysis

The analysis included:

- **Descriptive statistics**: Mean, standard deviation, minimum and maximum for each variable.
- **Kolmogorov-Smirnov normality test** to confirm normal data distribution.
- **Pearson correlation** to identify linear relationships between variables.
- **Simple linear regression** to predict academic performance based on perceived emotional intelligence.

This methodological approach follows current recommendations for correlational studies with adolescents in school contexts (Arias et al., 2021; Méndez & Castaño, 2020).

Table 2. Variables, Instruments and Analyses Used

Variable	Instrument	Scale	Type of Analysis
Emotional intelligence	TMMS-24	Likert (1 to 5)	Descriptive, correlation, regression
Academic performance	Recording Notes	Scale 0–20	Mean and correlation with EI

Results

1. Descriptive Statistics

The descriptive analysis allowed us to identify the general levels of perceived emotional intelligence and academic performance in the total sample. On the TMMS-24 scale, participants scored an overall mean of 3.67 (SD = 0.48) on a scale of 1 to 5. The subdimensions with the highest scores were *emotional clarity* (M = 3.79, SD = 0.55) and *emotional repair* (M = 3.72, SD = 0.60), while *emotional attention* obtained a slightly lower value (M = 3.51, SD = 0.52).

Regarding academic performance, measured by the general average of the quarter (scale from 0 to 20), the mean was 15.74 (SD = 1.98), which indicates an acceptable academic performance according to local educational standards.

Table 1. Descriptive Statistics of Key Variables

Variable	Mean (M)	Standard deviation (SD)	Minimal	Maximum
Emotional care	3.51	0.52	2.00	4.83
Emotional clarity	3.79	0.55	2.10	5.00
Emotional repair	3.72	0.60	1.90	5.00
Academic performance	15.74	1.98	10.20	19.40

2. Correlation Analysis

Pearson's correlation analysis revealed positive and statistically significant relationships between the dimensions of emotional intelligence and academic performance. The subdimension with the highest correlation was **emotional repair** ($r = .52$, $p < .001$), followed by **emotional clarity** ($r = .48$, $p < .001$) and **emotional attention** ($r = .34$, $p < .01$).

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These results coincide with recent research that indicates that the ability to manage emotions (emotional regulation) has a direct relationship with academic performance, as it facilitates concentration, conflict resolution, and adaptation to the school environment (Extremera et al., 2022; Ramos-Díaz et al., 2022).

Table 2. Correlations between Emotional Intelligence and Academic Performance

Variable	1	2	3	4
1. Emotional care	1			
2. Emotional clarity	.58**	1		
3. Emotional repair	.51**	.64**	1	
4. Academic performance	.34**	.48**	.52**	1

Note: **p** < .01

3. Simple Linear Regression

A simple linear regression analysis was performed to assess the predictive capacity of emotional intelligence (EI) on academic performance. The model was statistically significant, $F(1, 310) = 97.82$, $p < .001$, explaining **24.2% of the variance** in academic performance ($R^2 = .242$).

The regression coefficient for total EI was **B = 1.86**, indicating that for each additional point in the total EI score, an increase of 1.86 points in the student's academic average is expected. This finding is in line with the results reported by Taylor et al. (2020) and Arias et al. (2021), who point out that strengthening emotional skills favors school performance, even in populations at academic risk.

Table 3. Results of the Linear Regression Model

Predictor Variable	B	EE	Standardized Beta	t	p
Emotional intelligence	1.86	0.19	.492	9.89	<.001
Constant	7.02	1.24	—	5.66	< .001
R^2 = .242					

4. Gender Differences

A Student's t-test was performed to compare EI scores and academic performance between men and women. No statistically significant differences were found in total EI ($t = 1.45$, $p = .15$), but there were in the emotional attention subscale, in which women scored slightly higher ($t = 2.34$, $p < .05$). Regarding academic performance, no significant differences were observed by gender ($t = 0.92$, $p = .35$).

Conclusions

The findings of this research confirm the existence of a **significant and positive relationship between perceived emotional intelligence and academic performance** in secondary school students, which coincides with the results obtained in recent studies in different educational contexts (Extremera et al., 2022; Ramos-Díaz et al., 2022). **Emotional regulation**, in particular, emerged as the component with the greatest predictive weight, suggesting that the ability to manage one's own and others' emotions acts as a buffer against academic stress and as a facilitator of learning (Taylor et al., 2020).

In this sense, emotional education should not be considered an optional complement within the curriculum, but an **essential transversal competence** that enhances not only the psychosocial well-being of students, but also their academic performance. Integrating systematic emotional education programs into curricula could contribute to improving school results and promoting a healthier, more empathetic, and resilient educational environment (Bisquerra & Pérez, 2020).

In addition, the evidence obtained in this study supports neuroeducational theories that argue that emotions and cognitive processes are deeply interrelated. Emotions not only condition motivation and attention, but also influence the development of key metacognitive skills for academic success (Immordino-Yang & Darling-Hammond, 2019).

However, the study has some **methodological limitations**. The cross-sectional design prevents establishing causal relationships, and the use of self-reported measures can introduce social desirability biases. In addition, the sample was limited to students from a specific region, which reduces the generalizability of the results. Future research should consider longitudinal and experimental designs, incorporate direct classroom observations, and expand the sample to different sociocultural contexts.

Finally, the results have important **implications for education policies**. Including training in emotional competencies in teacher training and school curricula can be an effective way to reduce school dropouts, improve coexistence, and promote the comprehensive development of students (Sánchez-Pujalte et al., 2021). The scientific evidence is becoming clearer: teaching students to manage their emotions not only makes them happier, but also more successful in their educational trajectories.

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