Teaching intervention route to boost socio-emotional skills and academic performance

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Abstract

This article presents the findings of a research study aimed at characterizing the socio-emotional skills of primary school students and their relationship with academic performance, taking into account that academic performance is influenced by the physical environment of the learning process. The study was conducted at the Madres Católicas District Educational Institution in Barranquilla, Colombia, under a rationalist epistemological approach, a critical paradigm, and a deductive–inductive method. A mixed-methods design was used, structured in three phases: theoretical, empirical, and propositional. This manuscript focuses on the empirical phase, in which a Likert-scale questionnaire was applied to homeroom teachers. Data were analyzed using exploratory factor analysis, including the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity, in order to validate the instrument's structure across five dimensions: cognitive, attitudinal, skills-based, learning achievement, and learning assurance. The results show a significant relationship between the development of socio-emotional competencies—such as self-regulation, empathy, and communication—and improved academic performance. These findings support the systematic integration of emotional education into pedagogical practice as a key strategy to enhance learning outcomes and promote holistic student development.

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Introduction

In recent years, the recognition of socio-emotional skills as an essential component of human development has generated a growing interest in their integration into the formal education system. These skills, understood as the set of competencies that allow individuals to recognize and manage their emotions, establish healthy social relationships, make responsible decisions, and face the challenges of daily life, have become a fundamental axis of educational models aimed at the comprehensive education of the student (Bisquerra, 2007; Goleman, 1995). In the Latin American context, where significant gaps persist in terms of educational equity, poverty, school violence and dropout, the development of these emotional competencies represents not only a pedagogical need, but also a strategy to favor school permanence, improve academic performance and promote social cohesion.

In this scenario, the school is made up of tangible and intangible components, in terms of the physical space where the learning process takes place, it ceases to be only a space for the transmission of academic knowledge and is consolidated as a privileged environment for the development of the emotional, affective and social dimension of the human being. in view of the possibilities of being considered as an environment that generates comfort and safety.

Hence, current research agrees that the formation of skills such as emotional self-regulation, empathy, decision-making, and conflict resolution contribute significantly to improving the school environment, strengthening interpersonal bonds, and optimizing learning processes (Franco et al., 2017; Vera et al., 2021). However, in many school contexts, especially those that serve vulnerable populations, the socio-emotional dimension continues to be treated marginally or intuitively, without systematic planning that responds to the real needs of the students.

In Colombia, the Ministry of National Education has promoted in recent years various strategies aimed at strengthening emotional education, as part of its commitment to comprehensive education. Programs such as "Educapaz", "I am a Peaceful Generation" or the "National Plan for School Coexistence" have sought to provide institutions with tools to prevent violence, foster citizenship and promote emotional well-being. However, the effective implementation of these strategies requires contextualized processes, sustained over time and articulated with the curricula, which requires research that explores how these skills are manifested, how they can be evaluated and how they affect school results.

In the educational context, academic performance is influenced by different situations that occur in students, whether personal, motivational, due to their intellectual capacity, the family environment due to the accompaniment of parents or responsible guardians, the interference of the school from methodological and pedagogical processes and the execution of educational processes. as well as the physical atmosphere of learning; this is not only an architectural aspect, but also a fundamental pedagogical component that can make coexistence and peace programs viable, positively transforming the school climate and the integral development of children (Heredia & Cannon, 2017).

Academic performance is one of the most important components in the teaching-learning process, as it allows "measuring the results of pedagogical action" (Usán & Salavera, 2018, p. 98), or school achievements based on grades, which generates conflict situations for students such as stress, anxiety, demotivation, lack of attention, low self-esteem, it is imperative to delve into the socio-emotional skills that can precisely affect him.

As mentioned by Tacilla, Vásquez, Verde, and Colque (2020), academic performance is framed by determinants that affect the achievement of results, these have to do with skills, abilities, motivation, according to this approach, lack of skills and demotivation are the aspects that are emphasized on the student from a personal level, becoming one of the causes that affects their performance. From this framework, it is considered that socio-emotional skills represent an opportunity to improve academic performance to the extent that they allow integral development, academic performance and relational processes within the educational context, influencing these processes on students.

According to Pardilla (2020), limited personal skills are detrimental to both academic results and adult life; it also affects their emotions, feelings, and attitudes towards themselves, others, and the different disciplines or subjects under study. Regarding the link between socio-emotional skills and academic performance, and their relationship with physical space, there is a growing interest worldwide in the relationship between socio-emotional skills and academic performance, with research analyzing this link. A crucial aspect of

fostering these skills is the physical learning atmospheres, which directly influence students' emotional well-being and motivation.

In Latin America, for example, studies on socio-emotional skills and academic performance are presented, such as the case of Chile carried out by Vera, Cerda, Aragón, & Pérez (2021), who evaluated academic performance with the socio-emotional variables of students in vulnerable contexts, identifying those with better academic self-concept have better performance ($r=.235$; $p<.01$), and those who use self-regulation strategies obtain better grades ($r=.245$; $p<.01$).

In relation to the role of the teacher in the creation of an intervention route for the strengthening of socio-emotional skills that enhance academic performance in elementary school students, these actors are of great importance since they actively act as facilitators and are the ones who generate motivation or demotivation when planning pedagogical acts without taking into account socio-emotional skills; Aranda and Caldera (2018), in Mexico, state that in traditional or conventional education, in most cases it is boring and ineffective, it does not involve the personal part of the students, which affects socio-emotional skills and they assert the importance of a change towards pedagogies and strategies aimed at new technological changes. that overcome these difficulties in students.

In these aspects, the family acts as a primary component in the development of socio-emotional skills, parents from their upbringing establish the guidelines for the process of forming their children; family conflicts exist in daily coexistence, but it depends on how they are assumed within the dynamics, according to Lee, Marshall, and Feinberg (2021). In accordance with the impact that socio-emotional skills have on academic performance, Gómez and Meza (2019) demonstrate that there are shortcomings in social skills, specifically in issues such as assertiveness, active listening and conflict resolution, lack of respect among peers, absence of cooperative and collaborative behaviors, non-compliance with behavioral norms, lack of coexistence, among others, all these consequences on the management of socio-emotional skills lead to difficulties in children's academic performance.

Hence the derivation of a study on which this article is based, which proposed to design a proposal for pedagogical intervention for the strengthening of socio-emotional skills that potentiate student academic performance, specifically in the District Educational Institution (IED) Madres Católicas de Colombia, considering that the potentiation of student performance is necessary since shortcomings are contemplated in the recognition and socio-emotional manifestation, beyond the teaching-learning process of content and knowledge.

Based on these premises, the purpose of this article is to characterize the socio-emotional skills of elementary school students in an urban public educational institution in Barranquilla, Colombia, and to analyze their relationship with the level of academic performance. This characterization is based on the recognition that school success cannot be explained solely by cognitive factors, but is profoundly influenced by emotional, attitudinal, social, and physical space variables. The research that supports it was developed under a rationalist epistemological approach, from a critical paradigm, with a mixed methodological design that allowed understanding school practices in their complexity.

The institution under study, IED Madres Católicas, serves a student population characterized by challenging social and economic conditions, which has shown difficulties both in academic performance indicators and in the dynamics of school coexistence. Faced with this context, the need arose to design a pedagogical proposal that, beyond intervening punctually in specific problems, would allow the socio-emotional component to be integrated into the school curriculum in a structured way. This is how the research initiative that supports this article was born, whose starting point was the identification and characterization of socio-emotional skills in students, as a basis for a subsequent educational intervention.

From a theoretical point of view, this work is based on the contributions of authors such as Bisquerra (2007), who argues that emotional education should occupy a central place in the school curriculum, just like the traditional areas of knowledge. The theory of emotional intelligence proposed by Goleman (1995) also offers a fundamental framework for understanding, establishing that emotional development directly influences processes such as attention, motivation, decision-making, and prosocial behavior, all of which are linked to learning.

Additionally, recent studies in school contexts have shown that there is a positive correlation between the development of socio-emotional skills and academic performance, especially in primary school students (Usán & Salavera, 2018; Vera et al., 2021). In the same way, from these contributions it is possible to ensure that an adequate physical environment can contribute to the

construction of a positive school environment, as well as a safe one in which students communicate their emotions and build relational bridges with their peers in a stable way.

The state of the art consulted reveals that, although there is abundant international literature on the impact of socio-emotional skills on learning, there is little research that addresses this relationship from a contextualized approach in public institutions at the basic level in Colombia. Most studies have focused on specific interventions or on secondary or higher education populations, leaving an important gap regarding how these skills manifest themselves in school childhood and what implications they have for daily pedagogical practice.

In this sense, this article contributes with empirical evidence to an emerging line of research that seeks to resignify the role of emotions in the educational process. Through the analysis of data collected through an instrument validated and applied to classroom teachers, the most developed socio-emotional dimensions and their association with school performance indicators are identified. This analysis will allow not only to better understand the emotional profile of students, but also to offer concrete inputs for the design of pedagogical strategies that integrate the emotional as a structural component of learning.

The study presented here is part of the empirical phase of broader research, structured in three phases: a theoretical phase focused on documentary review; an empirical phase aimed at characterization through validated instruments; and a propositional phase focused on the design of a pedagogical intervention route. In this article, only the results corresponding to the empirical phase are presented, in order to offer a precise and detailed reading of the current state of the students' socio-emotional skills and their relationship with academic performance, without yet addressing the intervention proposals derived from the diagnosis.
In summary, this research is based on a comprehensive understanding of the subject in its emotional, cognitive and social dimensions, recognizing that school education must transcend instructional logic and open space for human development in all its expressions. It is hoped that the findings shared here can serve as a basis for the strengthening of institutional policies, teacher training programs and classroom strategies that recognize emotional education as a way to transform learning and school life.

Methodology

This study is framed within a rationalist epistemological approach and a critical paradigm to investigate the relationship between socio-emotional skills and academic performance, considering school as a space for social transformation. The method used is based on two phases, theoretical and empirical, focusing on the empirical phase with a quantitative descriptive field design, looking for patterns and relationships in natural contexts, which cross the subjects, assuming a position committed to the improvement of school practices and equity in learning processes. which made it possible to characterize the relationship between students' socio-emotional skills and their academic performance, taking into account both their quantifiable manifestations and their relevance in specific contexts of social vulnerability.

The methodological approach made it possible to integrate the rigor of statistical analysis with a deep understanding of the school context. In particular, this article focuses on the empirical phase of the research, in which the quantitative component predominated through the application of structured instruments. It is

The research was carried out at the Institución Educativa Distrital Madres Católicas, an urban public school located in the city of Barranquilla, Colombia. The study population consisted of primary school teachers. A finite population of 60 teachers was used, who met specific criteria of institutional permanence and professional experience. Since the population was small and accessible in its entirety, we worked with the entire population, so the sample was equivalent to the population: 60 teachers. The inclusion criteria established to select the participating teachers were: (1) have at least one year of continuous experience in the educational institution; (2) be employed as classroom teachers during the school year in which the study was carried out.

The technique used in this research was the survey, and the instrument, a questionnaire with a Likert scale and 5 response options, was designed to characterize five dimensions: (1) cognitive, (2) attitudinal, (3) skills, (4) learning concretion, and (5) learning assurance. The first three dimensions correspond to the characterization of socio-emotional skills, while the last two operationalize the concept of academic performance from a comprehensive perspective, considering both the acquisition and the maintenance of school achievements. The questionnaire was subjected to a rigorous validation process by expert judgment, made up of professionals in education,

psychopedagogy, and educational evaluation, who verified the relevance, clarity, and internal coherence of the items (Hernández et al., 2006).

Validity was applied by expert judgment and reliability was determined by Cronbach's Alpha Coefficient, from which a coefficient of 925 was obtained, which indicates that the instrument can be applied.

For the statistical analysis of the data, factor analysis was used in order to identify the underlying structure of the instrument and analyze the construct validity of each dimension. The Kaiser-Meyer-Olkin (KMO) and Bartlett sphericity tests were applied as indicators of the suitability of the data to be subjected to factor analysis. These procedures made it possible to reduce the dimensionality of the data based on an exploratory factor analysis and to verify the coherent grouping of the items according to their expected theoretical factors.

Each dimension was analyzed independently, allowing to establish the level of development of the skills and their relationship with the academic processes. The KMO values obtained in the five dimensions evaluated were between 0.75 and 0.81, which indicates a high suitability for factor analysis, according to the criteria of Kaiser (1974). Likewise, the statistical significance in the Bartlett tests ($p < 0.001$) confirmed the correlation between the items, which supports the internal consistency of the instrument. Finally, the confirmatory factor analysis is carried out with a second run of results with the support of the SPSS V25 statistical tool (2021), for the results of the teacher survey.

Results

The analysis of results focuses on the validation of the instrument designed to characterize the socio-emotional skills of students and explore their relationship with academic performance. To this end, an exploratory factor analysis (EFA) was initially applied in each of the dimensions included in the questionnaire: **cognitive, attitudinal, skills, learning concreteness** and **learning assurance**. The use of the KMO test (Kaiser-Meyer-Olkin) and the Bartlett sphericity test allowed to establish the structural validity of the instrument and the correlation between items within each dimension. After identifying the factors more clearly, a confirmatory factor analysis procedure is applied with the rotation method used is VARIMAX, which seeks to redistribute the variance along all the components in the load matrix.

Table 1: Initial exploratory analysis Factor A1-A6 variable Strengthening of socio-emotional skills

Factor A1	**Component/indicator**	**Item**
Knowing how to know	A 1.1 Acquisition of knowledge	1,2
	A.1.2 Transfer	3, 4
Factor A2	**Component/indicator**	**Item**
Knowledge mastery	A 2.1 Maintenance	5, 6
	A 2.2 Mental processes	7,8
Factor A3	**Component/indicator**	**Item**
Know-how	A 3.1 Application	9, 10
	A 3.2 Implementation	11, 12
Factor A4	**Component/indicator**	**Item**
Dexterity	A 4.1 Motor Skill	13, 14
	A 4.2 Occupational performance	15, 16
Factor A5	**Component/indicator**	**Item**
Knowing how to be	A 5.1 Appropriate emotional expression	17, 18
	A 5.2 Coping skills	19, 20
Factor A6	**Component/indicator**	**Item**
Knowing how to live together	A 6.1 Regulation of emotions and feelings	21,22
	A 6.2 Living with others	23,24

Note: The table contains the grouped factors of the variable Strengthening socio-emotional skills in an exploratory analysis. Source: Martínez and Sanjuan (2022)

Table 2. Initial exploratory analysis factor B1-B2 variable Potentialization of academic performance

Factor B1	**Component/indicator**	**Item**
Learning planning	B 1.1 Learning strategies, carrying out actions	25, 26
Factor B2	**Component/indicator**	**Item**
Execution	B 2.1 Appropriation of specific content	27
	B 2.2 Adaptation to reality and cognitive balance	28,29
	B 2.3 Evaluation and feedback	30
Factor B3	**Component/indicator**	**Item**
Management to improve learning	B 3.1 Decision-making	31
	B 3.2 Task Control	32
Factor B4	**Component/indicator**	**Item**
Institutional self-organization	B 4.1 Reality of the educational organization	33
	B 4.2 Synthetic index of educational quality	34

Note: The table contains the grouped factors of the variable potentiation of academic performance in an exploratory analysis. *Source: Martínez and Sanjuan (2022).*

Tables 1 and 2 show the grouping exercise initially carried out with the support of the SPSS V25 statistical tool (2021), the 34 items proposed in the questionnaire carried out to teachers were included. From this, the analysis of the Kaiser-Meyer-Olkin index (KMO) was carried out for each variable : socio-emotional skills and academic performance.

In the case of the variable *socio-emotional skills*

Table 3. *Test and Bartlett Skills Dimension*

Prueba de KMO y Bartlett Dimension Cognitiva

Medida Kaiser-Meyer-Olkin de adecuación de muestreo		,671
Prueba de esfericidad de Bartlett	Aprox. Chi-cuadrado	30,194
	gl	15
	Sig.	,011

Table 4. *KMO and Barlett Test Cognitive DimensionKMO*

Prueba de KMO y Bartlett Dimensión Habilidades

Medida Kaiser-Meyer-Olkin de adecuación de muestreo		,716
Prueba de esfericidad de Bartlett	Aprox. Chi-cuadrado	76,513
	gl	21
	Sig.	,000

Table 5. KMO Test and Barlett Attitudinal Dimension

Prueba de KMO y Bartlett Dimensión Actitudinal

Medida Kaiser-Meyer-Olkin de adecuación de muestreo		,731
Prueba de esfericidad de Bartlett	Aprox. Chi-cuadrado	85,304
	gl	15
	Sig.	,000

Note: In original language (Spanish)

Within the variable socio-emotional skills, the KMO values of each dimension are determined as follows: for the cognitive dimension between 0.5 and 1 indicate that it is appropriate to apply factor analysis to the matrix of data under study. In the case of the data matrix we are analyzing, a KMO of 0.671 was obtained (see table 3). In the skills dimension, it presented a significance much lower than the 0.05 limit, since it was 0.00; additionally, a KMO of 0.716 was obtained (see table 4). The Attitudinal dimension presented a significance much lower than the 0.05 limit, since it was 0.00, Additionally, a KMO of 0.731 was obtained (see table 5). All these results indicate that the sample taken for the study is appropriate and that therefore the application of factor analysis can be continued.

Figure 1.
Sedimentation Graph Cognitive Dimension

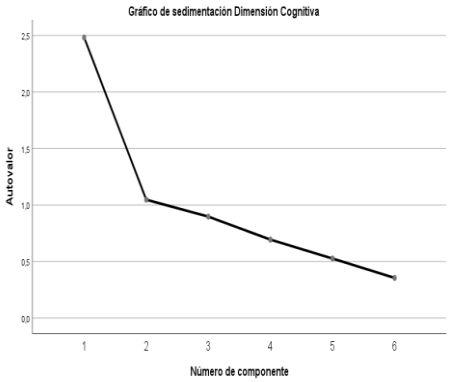
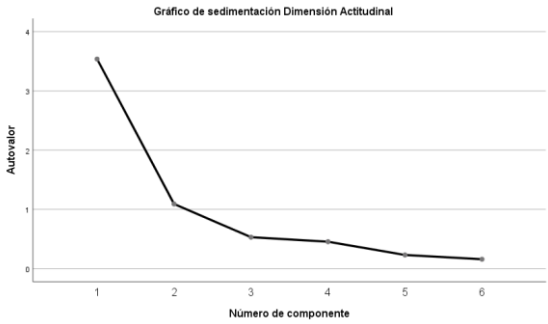


Figure 2.
Sedimentation Graph Skills Dimension

Figure 3
Sedimentation Graph Attitudinal Dimension



Note: In original language (Spanish)
Figures 1, 2 and 3 indicate the representation of the sedimentation graph of the socio-emotional variable. Components whose eigenvalues (eigenvalues) are greater than 1 (eigenvalues >1) are chosen. The figures indicate that two main components must be extracted from each one, which are those that meet the indicated requirement.
After this initial factor analysis, the confirmatory factor analysis of the first variable socio-emotional skills is carried out with the VARIMAX rotation method, with the following results:

Table 6.
Rotated Component Matrix D. Cognitive

Matriz de componente rotado[a]

	Componente 1	Componente 2
6. Las actividades cognitivas en el aprendizaje están amarradas a procesos de neurodesarrollo que facilitan en el estudiante tanto el conocimiento, como el dominio de éste desde su dinámica relacional.	,767	
7. El desarrollo de procesos cognitivos de orden superior en la escuela como la memoria, la atención, la percepción, el lenguaje, el pensamiento se da como parte de la enseñanza aprendizaje, cumpliendo dentro ésta una función específica.	,706	
4. La escuela garantiza tanto la aplicación como la transferencia del conocimiento como procesos de fortalecimiento académico y del saber	,648	
5. Las funciones mentales superiores posibilitan el mantenimiento del conocimiento a través de procesos de continuos de interiorización y de construcción.		,815
2. La adquisición de conocimiento es un proceso que forman parte de la actividad cognitiva, indispensable para el aprendizaje del estudiante.		,755
8. Las habilidades socioemocionales tienen un papel importante en el almacenamiento, recuperación de la información, afectan la forma de pensar del estudiante su memoria, atención y resolución de problemas.		,523

Método de extracción: análisis de componentes principales.
Método de rotación: Varimax con normalización Kaiser.[a]

a. La rotación ha convergido en 3 iteraciones.

Table 7.
Rotated Component Matrix D. Skills

Matriz de componente rotado Dimensión habilidades[a]

	Componente 1	Componente 2
13. El proceso de aprendizaje contiene destrezas de tipo sensoriomotor para la realización de acciones complejas, que complementa el conocimiento.	,884	
11. La educación tiene dentro de sus objetivos posibilitar la implementación del saber hacia el logro de propósitos como de metas, buscando el aseguramiento del buen desempeño.	,767	
15. La motivación como eje principal en la aplicación del conocimiento, permite en el estudiante generar la voluntad para ejecutar un óptimo desempeño.	,764	
14. El desarrollo de capacidades para el hacer incluye la destreza de componentes motores indispensables en la incorporación de contenidos que favorecen el desarrollo de habilidades socioemocionales desde el acercamiento, contacto con el otro.	,753	
9. La escuela es orientadora del desarrollo de las competencias, así como del desempeño del conocimiento desde una concepción pragmática.		,787
12. Las capacidades llevan a la aplicación del saber, de esta manera los estudiantes son competentes en la medida en que saben poner en práctica sus conocimientos.		,713
16. El desempeño ocupacional es uno de los objetivos a los que debe apuntar la incorporación de conocimientos en los estudiantes, a través del manejo de habilidades socioemocionales.		,611

Método de extracción: análisis de componentes principales.
Método de rotación: Varimax con normalización Kaiser.[a]

a. La rotación ha convergido en 3 iteraciones.

Note: In original language (Spanish)

Table 8.

Matrix of Rotated Component D. Attitudinal

Matriz de componente rotado Dimensión Actitudinal[a]

	Componente 1	Componente 2
24. La escuela en su desarrollo convivencial promueve la capacidad de aceptar así como apreciar las diferencias de los demás, incluidos los derechos, de igual modo la responsabilidad frente a los propios actos y los de los demás.	,914	
22. El saber convivir con los otros conlleva la capacidad de generar emociones positivas de manera tanto consciente como voluntaria para poder disfrutar de la vida al igual que la convivencia.	,888	
17. Dentro de los procesos educativos la expresión de las emociones debe propiciarse como parte del desarrollo integral del estudiante.	,588	,539
23. La convivencia escolar implica las relaciones tanto sociales así como las personales en donde se debe ser competente emocional al igual que socialmente.	,586	,511
18. La escuela es un espacio propicio para que los niños puedan expresar además de vivir de manera libre sus emociones.		,917
19. La escuela es un lugar donde se viven situaciones de conflicto al igual que retos, de los cuales los estudiantes aprenden a manejar dentro de los procesos convivenciales, afrontándolos desde lo actitudinal.		,895

Método de extracción: análisis de componentes principales.
Método de rotación: Varimax con normalización Kaiser.[a]

a. La rotación ha convergido en 3 iteraciones.

Note: In original language (Spanish)
According to Tables 6, 7 and 8, which explain the method of extraction by rotated component of the cognitive, skills and attitudinal dimensions and present the results framed in this variable as follows: As can be seen in Table 6, cognitive activities in learning are tied to neurodevelopmental processes that facilitate in the student both knowledge, as the mastery of this from its relational dynamics, to the development of higher-order cognitive processes in school such as memory, attention, perception, language, thought occurs as part of teaching-learning, fulfilling a specific function within it. The school guarantees both the application and the transfer of knowledge as processes of academic and knowledge strengthening, while the second factor is made up of three (3) aspects. In this grouping of items 4, 6 and 7 related to the Development of Competencies and Learning , a score ranging from 1 to 15 points is graded, with 1 being the lowest score and 15 the highest score obtained. If 1 to 3 points are obtained, the result indicates that the factor obtained a rating score of "Poor", if the result is 4 to 6 points, it obtained a rating score of "Insufficient", if it is 7 to 9 points, the rating score is "Fair", if it is 10 to 12 points, the rating score is "Good" and if 13 to 15 points are obtained, the factor obtained a score rating "Excellent".

These results are in agreement with those presented by Ndetei et al., (2022), who in their study demonstrated how training in life skills favors academic performance, at the end of their research they obtained superior results with a satisfaction index of 0.7, in the relationship they established between the instruments evaluated for the development of competencies and learning, considering that the improvement in methods of competency training makes it possible to improve learning performance.

As for the percentage of 46%, it indicates a trend towards the average of teachers who score this factor of Competence Development and Learning as regular, deficient and insufficient, as well as the study by Ndeti et al. (2022), who conclude about the lack of improvement in the academic part and attention problems, asserting that attention problems are associated with cognitive dysfunctions and are therefore less susceptible in life skills training (Ndeti et al., 2022, p. 6).
In the same way, this factor is related to Ausubel's theory (1983), where he highlights aspects of knowledge based on significant learning, where previous knowledge is associated with new knowledge, that is, there is a cognitive interaction, in addition to notions of neuroscientism are based on this theory (Moreira, 2020,

p. 23), where the contribution of neuroscience to learning is essential, For this reason, it is highlighted that teachers appropriate and recognize the concept of neurodevelopment and the commitment of higher-order functions in the dynamics of learning.

In Table 7, the first grouping is composed of four (4) items, while the second grouping is composed of three (3) aspects. Regarding this dimension and within it the ability to execute learning from the practical, it was possible to show that a percentage corresponding to 75.86% of the teachers value this factor in terms of Good and Excellent; however, 24.14% of the teachers weigh this factor with evaluations of Fair to Deficient; from 75.86% which is an extremely high percentage in terms of how they explain these components to the variable socio-emotional skills, where implementation, skills and occupational performance are prioritized over learning.

The results generated by the teachers indicate the importance of the application of the knowledge acquired through the achievement of goals, carrying out actions that complement it, the demand for student movement, manipulation, rapprochement with the other that favors the development of socio-emotional skills, in this sense it coincides with the conclusions generated by the authors Aranda and Caldera (2018) who establish that in education it is necessary to gamify the classroom, that is, develop strategies aimed at play, movement, intra- and interpersonal relationships that contain competition, cooperation between peers as well as playful learning activities that motivate, in turn, stimulate the socio-emotional development of students.

Within the same dimension, Competencies and Knowledge were considered, on which a percentage corresponding to 55.17% of the teachers value this factor in terms of Good and Excellent. However, 44.83% of the teachers weigh this factor with ratings of Fair to Deficient. According to this group of items, it can be said that school is the space to train students in the acquisition of knowledge for life, which is characterized by being useful and practical, schooling is the training ground to exercise skills, in practice over and over again until occupational performance is achieved. materialize knowledge in a comprehensive way.

According to the item with the highest average in this factor, which was 13 with .884 The learning process contains sensorimotor skills for the performance of complex actions, which complements knowledge, considering this aspect as basic in learning, it is in accordance with what was described by the author Pazmiño (2019), who in her research found that motor skills and abilities in primary school students are related to the learning process of reading and writing with a level of significance of p=0.031, which demonstrates the fundamental of sensory-motor skills in learning, the need to strengthen this aspect in the development and structuring of socio-emotional skills for the improvement of academic performance.

When appreciating the Skills Factor 2 Competencies and Knowledge Dimension and in response to the assessment described above, it is possible to show that a percentage corresponding to 55.17% of the teachers value this factor in terms of Good and Excellent. However, 44.83% of the teachers weigh this factor with ratings of Fair to Deficient. According to this group of items, it can be said that school is the space to train students in the acquisition of knowledge for life, which is characterized by being useful and practical, schooling is the training ground to exercise skills, in practice over and over again until occupational performance is achieved. materialize knowledge in a comprehensive way. In this way, it can be elucidated that these values agree with those presented by Franco, Beja, Candeias (2017) who at the end of their research obtained superior results of strong correlation of $p < 0.001$, which was significant and positive in the evaluated indicators of social competence and school performance. However, the percentage of 44.83% is indicating that the school still needs to continue working on strengthening the processes of competencies and knowledge as a factor.

In relation to the theoretical contributions when establishing a relationship between this factor of competencies and knowledge, it can be stated that the results express the importance of the development of competencies in students, so that they can apply knowledge in context, make it useful in solving problems of different kinds and that students are able to carry knowledge to achieve results. achieve goals, this is in accordance with Piaget, who states that any individual who accesses formal operations would be able to solve any type of problem and the need to enhance cognitive development for this to happen (Piaget, cited in Perales, 1993, p. 173).

As can be seen in Table 8, the first factor is composed of four (4) aspects, while the second factor is composed of two (2) aspects, from which it can be said that the Attitudinal Dimension and within it the Knowing How to Live Together, it was obtained that 68.97% of the teachers value this factor in terms of Good and Excellent. however, 31.03% of the teachers weighted this factor with ratings of Fair to Deficient, which indicates that this factor of knowing how to live together significantly explains the variable socio-

emotional skills since the teachers consider that knowing how to live together and emotional expression towards others is fundamental in relationships with others.

The findings coincide with what was expressed by Cerda et al. (2018), who in their study find a direct influence between Positive Interpersonal Management (β – 435 and p < 0.001) and the Social Network of Peers (β – 424 and p < 0.001), these dimensions in correlation to academic performance.

The results of this factor in terms of the expression of positive emotions, social relationships, emotional and social competence, acceptance of oneself, of the differences of others, is in agreement with the author Bisquerra who also proposes the concept of emotional competencies that allow the individual to maintain successful interpersonal relationships, achieving socio-emotional skills (Bisquerra, cited in Oliveros, 2018, p. 100).

Regarding the Attitudinal Dimension and within it the Knowing How to Be, 62.06 % of the teachers value this factor in terms of Good and Excellent, although 37.94 % of the teachers weigh this factor with evaluations of Fair to Deficient. This is one of the factors that defines the variable from the regulation and expression of emotions, which is similar to what was proposed by Valenzuela and Portillo (2018), who in their data analysis state that in 56.69% of students are able to manage their emotions, acting from motivation and thinking directed by emotions and 33.71% present low emotion management.
In accordance with Bisquerra's approaches, this factor is similar to the management and regulation of emotions that are established in his definitions, with a direct association between cognition, behavior, and emotion (Bisquerra, cited in Oliveros, 2018, p. 101).

The results of the rotated component matrix table, where the attitudinal dimension is shown, there is evidence of an interrelation of the factors Knowing how to live DAF1 (Attitudinal Dimension Factor 1) and Knowing how to be, DAF2 (Attitudinal Dimension Factor 2), which are related from the emotion in accordance with the authors Caballo and Bisquerra, the first refers to the situational component, which is the context where socio-emotional skills are developed, framed by the situations that make it appropriate or not, determines social norms so that individuals will know how and in what way to behave with the situation (Caballo, 2007, p. 209). For his part, the author Bisquerra proposes socio-emotional skills from competencies, including appropriate emotional regulation and expression.
In the case of the *academic performance variable* , two dimensions are explored: learning realization and learning assurance, the analysis of the Kaiser-Meyer-Olkin index (KMO) was initially carried out, presenting the following results:

Table 9.

KMO and Bartlett D test. Completion of learning

Prueba de KMO y Bartlett Concreción del aprendizaje

Medida Kaiser-Meyer-Olkin de adecuación de muestreo		,768
Prueba de esfericidad de Bartlett	Aprox. Chi-cuadrado	38,946
	gl	6
	Sig.	,000

Table 10.

KMO and Bartlett D test. Learning assurance

Prueba de KMO y Bartlett Aseguramiento del aprendizaje

Medida Kaiser-Meyer-Olkin de adecuación de muestreo		,685
Prueba de esfericidad de Bartlett	Aprox. Chi-cuadrado	18,646
	gl	3
	Sig.	,000

Note: In original language (Spanish)
Tables 9 and 10 explain the KMO and Bartlett test measure of the dimension of learning concretization and learning assurance according to Kaiser-Meyer-Olkin (1970).

For the dimension Completion of learning, Bartlett's sphericity test presented a significance much lower than the 0.05 limit, since it was 0.00. Additionally, a KMO of 0.768 was obtained (see table 9). For the learning assurance dimension, Bartlett's sphericity test presented a significance much lower than the 0.05 limit, since it was 0.00, a KMO of 0.685 was obtained (see table 10). These results indicate that the data matrix is valid to continue with the factor analysis process and that the sample taken for the study is appropriate, therefore, the application of factor analysis can be continued.

Figure 4.
Sedimentation graph D. Completion of learning

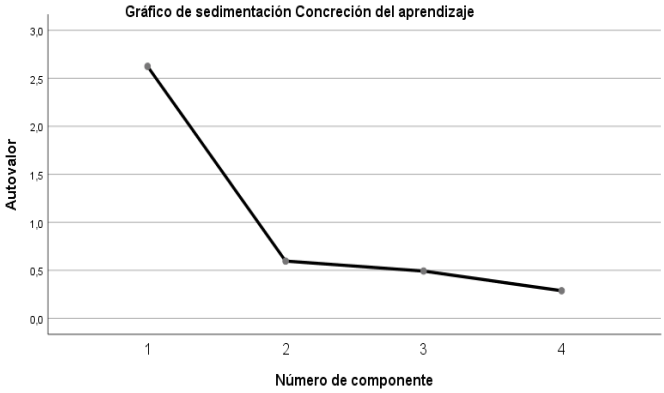
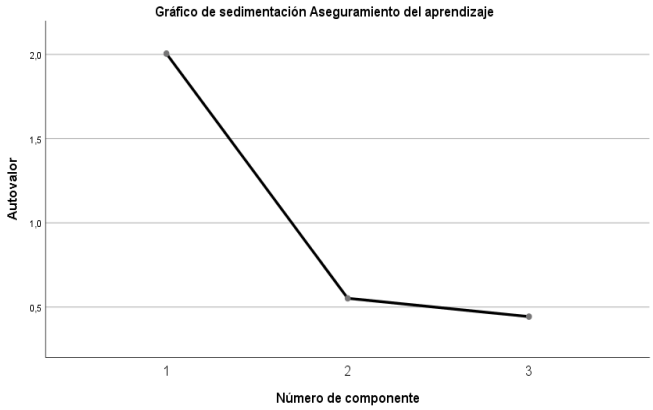


Figure 5.
Sedimentation graph D. Completion of learning



Note: In original language (Spanish)

Figures 4 and 5 show the sedimentation graph representation of the dimensions learning concretion and learning assurance. These show the components whose eigenvalues (eigenvalues) are greater than 1 (eigenvalues >1). The figures indicate that a main component must be extracted for both cases, which is the one that meets the aforementioned requirement.

After this initial factor analysis, the confirmatory factor analysis of the second variable academic performance was carried out with the VARIMAX rotation method, with the following results:

Table 11.

Factor load matrix of the D. learning concretion

Matriz de componente Concreción del aprendizaje[a]

	Componente 1
28. El equilibrio a nivel del pensamiento favorece el aprendizaje desde lo cognitivo además de lo emocional permitiendo la adaptación de los nuevos esquemas de aprendizaje con la realidad existente.	,870
29. La adaptación a la realidad en el proceso educativo significa que se logran autorregular en los estudiantes los esquemas de aprendizaje, permitiendo el desarrollo de acciones al igual que de operaciones conceptuales interdependientes.	,824
26. El desempeño académico refleja una congruencia con las habilidades socioemocionales, en la medida que el estudiante como ser integral en desarrollo, se desenvuelve tanto en lo cognitivo como lo emocional.	,799
30. La evaluación es el proceso a través del cual se observa, recoge, analiza información relevante con respecto al aprendizaje de los estudiantes con la finalidad de reflexionar, tanto para emitir juicio de valor como para tomar decisiones oportunas además de pertinentes para el mejoramiento de la dinámica de enseñanza aprendizaje, teniendo de apoyo la retroalimentación, como forma de estimular a los estudiantes desde lo socioemocional.	,742

Método de extracción: análisis de componentes principales.

a. 1 componentes extraídos.

Note: In original language (Spanish)

Table 12.

Factor load matrix of D. Learning assurance

Matriz de componente Aseguramiento del aprendizaje[a]

	Componente 1
33. La organización educativa en su conjunto tiene la capacidad de reorganizarse al igual que adecuarse, de acuerdo a su horizonte institucional, asumiendo una interacción dinámica dentro del contexto, de este modo todos los miembros de la comunidad educativa también son partícipes de los procesos de formación integral de los estudiantes, contribuyendo en la organización, gestión de los procesos que en ella se generan.	,841
32. El refuerzo de los aprendizajes desarrollados en el aula de clase se sustenta en las tareas a casa, en donde se pretende afianzar los conocimientos adquiridos, como estrategia de control además de evaluación sobre el desempeño académico que permite al estudiante transferir el conocimiento a su contexto, al igual que fortalecer el componente socioemocional desde la interacción con la familia.	,821
34. La institución educativa debe propender a la mejora de su calidad educativa atendiendo a los componentes del índice sintético de la calidad educativa, con la revisión de los resultados de las pruebas saber, lo que determina a su vez el desempeño académico de los estudiantes.	,790

Método de extracción: análisis de componentes principales.

a. 1 componentes extraídos.

Note: In original language (Spanish)

Tables 11 and 12 explain the method of extraction by rotated component of the dimensions learning concretization and learning assurance.

However, regarding the variable Enhancement of Academic Performance in relation to the Realization of Learning, it was evidenced that a percentage corresponding to 62.07% of the teachers value this factor in terms of Good and Excellent. However, 37.93% of the teachers weigh this factor with ratings from Fair to Deficient. These values agree with those presented by Martínez, Tobón, and López (2019) who at the end of their research obtained results on the relationship between emotional intelligence and academic performance classified according to the number of subjects failed +4 SD = 4.62, students without loss of subjects SD = 6.23, with a significance of $p < .05$, thus considering that emotional intelligence from the dimensions of perception, comprehension and regulation are significantly associated with academic performance.

The results of Table 11 of the rotated component matrix, which shows the Learning Completion factor (CA1), show an interrelation in all items: 26. 28. 29 and 30, which are related from academic performance, the relational and emotional aspect, with analogies with Vygostky's theory in that learning is the product of processes of social interaction with others, precedes development, therefore, it is part of the experience, the culture, being the product of collaborative work (Ávila and Alfonso 2012, p. 163); thus, academic performance that derives from cognitive processes is the result of this type of interaction. In addition, Piaget's contributions are consistent in the approaches referred to cognitive adaptation and balance, establishing learning processes through mental schemes given by processes of assimilation and accommodation (Piaget, cited in Meece, 2000, p. 102).

The results of Table 12 of the rotated component matrix, which shows the Learning Assurance factor (AA1), show an interrelation in all the items which are related from academic performance, evaluation, family commitment and the dynamics of improvement of the educational quality of the institution, which is based on what is stated by the authors Escorza and Cannon (2017), who establish that academic performance should not only be measured quantitatively but also qualitatively, since there are different factors that influence and affect academic performance, such as: family factors, from support, personal factors with motivation, school factors, from infrastructure, methodologies, teaching practices, evaluation, which complement each other, giving positive or negative results of academic performance. On the other hand, from Ausubel's theory, learning is consolidated from the meaning given to it, thus, previous information is connected with new information to determine to the extent that it is relevant and available in the cognitive structure of the subject (Ausubel, 1983, p. 2).

Regarding Learning Assurance, it was particularly obtained that 55.17% of the teachers value this factor in terms of Good and Excellent. However, 44.83% of the teachers weigh this factor with ratings of Fair to Deficient. These values are in contrast to what Díaz and Salas (2019) found, who at the end of their research obtained in the results regarding academic performance and homework support by parents that 83% of teachers consider that there is no parental support in the realization of commitments and tasks and 17% consider that, if there is support.

Summary of findings

The results of the confirmatory factor analysis show that the dimensions proposed in the questionnaire (cognitive, attitudinal, skills, learning concreteness and learning assurance) are grouped in a coherent way and adequately explain the theoretical variables analyzed.

Within the socio-emotional skills dimension, factors related to the practical application of knowledge, the implementation of skills, and knowing how to live together were highly valued by teachers, standing out as relevant predictors of school performance. In particular, a strong correspondence was observed between motor skills, occupational performance, and emotional regulation.

Regarding the dimension of academic performance, the analysis confirmed two essential factors: the realization of learning, where planning and evaluation are integrated; and learning assurance, which incorporates decision-making, task control, and institutional commitment. Teachers identified a clear association between socio-emotional development and improvement in academic processes, both in terms of performance and sustainability of learning.

Discussion

The confirmatory factor analysis allowed validating the internal structure of the instrument, confirming the relationship between the socio-emotional and academic dimensions proposed in the theoretical model. In the cognitive dimension, the results reinforce the idea that attention, memory and reasoning processes are deeply influenced by emotions and social skills, in line with the proposals of neuroeducation.

In the skills dimension, empirical evidence indicates that socio-emotional competencies such as the practical execution of knowledge and the development of sensorimotor skills contribute significantly to

learning. This supports the approaches of authors such as Goleman and Bisquerra, who point out that the effective implementation of knowledge is mediated by emotional and relational factors.
Regarding academic performance, the confirmatory analysis showed that both planning and securing learning depend to a large extent on skills such as self-regulation, empathy and decision-making. These conclusions are aligned with previous studies that highlight the role of emotional competencies in the consolidation of significant learning and in the construction of successful school trajectories.

Conclusions

Based on the analysis carried out, it is concluded that the strengthening of socio-emotional skills significantly influences the academic performance of students in basic primary education. The cognitive, attitudinal and practical dimensions showed that aspects such as emotional regulation, empathy, decision-making and affective expression have a direct impact on the way students face school challenges.

The factors confirmed through factor analysis reveal that the realization and assurance of learning cannot be understood in isolation, but in interaction with socio-emotional competencies. This interdependence suggests the need to integrate emotional education into pedagogical practices as a cross-cutting strategy.
The findings support the importance of designing pedagogical interventions that not only address the cognitive component, but also strengthen relational and emotional processes in the classroom. Likewise, the central role of the teacher as a mediator of significant experiences that favor integral human development is evident.

On the other hand, the results highlight the role of physical environments in the learning process as facilitators of socio-emotional development. A structured, safe, and emotionally positive school environment contributes significantly to students feeling motivated, regulating their emotions, and strengthening their interpersonal relationships, which directly affects their academic performance.

Finally, it is recommended to continue with research that deepens this relationship and evaluates the impact of specific emotional intervention strategies on academic achievement at different levels of the educational system.

In particular, it is concluded that:

1. The **cognitive, attitudinal and skills** dimensions reflect a high internal consistency, indicating that skills related to emotional self-regulation, empathy, communication and decision-making are observable and measurable in the school environment.
2. The dimensions associated with **academic performance** (completion and assurance of learning) also present statistical adequacy, which supports the premise that students who demonstrate higher levels of socio-emotional skills tend to obtain better school results, as they have personal resources that allow them to effectively face the challenges of learning.
3. The approach to socio-emotional skills from a pedagogical perspective not only favors the integral development of the student, but is also a key strategy for improving their academic performance.
4. It is necessary to continue strengthening teacher training in socio-emotional competencies, as well as to incorporate these skills systematically into the curricula, given their proven impact on school achievement.

This study, focused on characterizing students' socio-emotional skills and their relationship with academic performance, contributes with empirical evidence to the consolidation of more comprehensive educational practices, focused on human development and not exclusively on academic results.

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