Academic achievement in middle childhood: relationships with Emotional Intelligence and Social Skills[1]

Rendimiento académico en educación primaria: relaciones con la Inteligencia Emocional y las Habilidades Sociales

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Georgina Perpiñà Martí
Francesc Sidera Caballero
Elisabet Serrat Sellabona
Universitat de Girona

Abstract

Emotional intelligence (EI) and social skills (SS) have always been considered important for children's psychological and behavioural adjustment. However, during the last century they are receiving increasing attention for its influence in the academic setting too. The objective of this study is to analyse in depth the relationship of school performance with EI and SS. Especially we examine which specific dimensions of EI and SS are more related to academic achievement in mathematics and language. One hundred eighty students between 8 and 11 years old participated in the study. We administered the BarOn EI Inventory, the Social Skills Improvement System – Rating Scales (SSIS) and a test of mathematics and linguistic competences. The results showed that there is a relationship between EI and SS and academic achievement. The Interpersonal and Adaptability components of EI, together with the Communication and Cooperation factors of SS have showed to have the strongest impact on academic achievement. These findings point out the need to consider students' socioemotional competences in order to help them achieve all their academic and personal potential.

Key words: emotional intelligence, social skills, academic achievement, primary education, linguistic competence, mathematics competence.

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Resumen

La Inteligencia emocional (IE) y las habilidades sociales (HHSS) siempre se han considerado importantes para el buen desarrollo de los niños y niñas. No obstante, en los últimos años están recibiendo cada vez más atención, sobre todo en el campo educativo, por su influencia en el contexto escolar. El objetivo de este estudio es examinar detalladamente la relación entre el rendimiento académico y la inteligencia emocional y las habilidades sociales. Concretamente analizamos las dimensiones específicas de la IE y las HHSS que están más relacionadas con el rendimiento académico en lengua y matemáticas. Ciento ochenta alumnos de entre 8 y 11 años participaron en el estudio. Se administró el inventario BarOn, el SSIS-RS de habilidades sociales y una prueba de competencias matemáticas y lingüísticas. Los resultados demuestran que hay relación entre la IE y las HHSS y el rendimiento académico. Los componentes Interpersonal y Adaptabilidad de la IE, junto con los factores de Comunicación y Cooperación han demostrado tener el mayor impacto en el rendimiento de los alumnos. Estos resultados ponen de manifiesto la necesidad de tener en cuenta las competencias socioemocionales de los alumnos para ayudarlos a alcanzar su máximo potencial académico y personal.

Palabras clave: inteligencia emocional, habilidades sociales, rendimiento académico, educación primaria, competencia lingüística, competencia matemática.

Introduction

Finding ways to promote academic achievement among students has always raised great interest in the educational field. Because of this, it comes as no surprise that researchers have focused on identifying the most potential predictors of academic achievement in elementary and high schools in the last few decades. Among these factors, emotional intelligence and social skills have emerged as two of the variables that attracted most of the attention, aside from the intellectual or motivational ones.

Interest in emotional intelligence (EI) as an influence on academic success has appeared amid a passionate debate in the scientific field about the importance and the nature of EI (Parker et al., 2004a; Petrides et al. 2004). Numerous studies have related emotional intelligence to

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school achievement, from preschool to higher education (Extremera & Fernández-Berrocal, 2004; MacCann et al., 2020; Perera, 2016). Despite the dispersion of studies, their contributions indicate the existence of a relation between these two variables, either directly or mediated by different variables.

Focusing on social skills (SS), research has demonstrated that social and academic competence are also closely linked (Asle-Fattahi & Najarpoor-Ostadi, 2014; Eisenberg et al., 2010; Valiente et al., 2008). Learning is a complex individual process, but also a social one. In fact, social interaction is one of the key components for learning that allows cognitive growth. So mucho so, according to the Programme for International Student Assessment (PISA) around 50% of the differences in school success can be attributed to causes directly related to a social origin (Mudarra & García-Salguedo, 2016).

Therefore, the relationship between different aspects of EI and SS on the one side, and academic achievement on the other, seems pretty obvious. However, most of the studies analysing these associations have focused on adolescents and very limited work has been done with younger samples (Brouzos et al. 2014; Keefer et al., 2012).

Emotional Intelligence and Academic Achievement

Since the early 2000s there has been a general acceptance about the existence of two distinct constructs of EI (Austin et al., 2004; Livingstone & Day, 2005): a practitioner (e.g., Bar-On, 1997) and a scientific (e.g., Mayer & Salovey, 1997). This conceptualisation is consistent with the Petrides & Furnham's (2001) suggestion that EI can be divided into trait and ability EI. Both the practitioner and trait conceptualisations of EI rely on self-report measurements of perceived EI whereas the scientific and ability conceptualisations use performance-based measurements. Notwithstanding, a consensus has begun to emerge over the last few years that the two EI constructs are not antagonistic but complementary to one another, each reflecting a unique aspect of the individual's emotional functioning (e.g., Agnoli et al., 2012; Schutte et al., 2011).

The present study puts the focus on children's trait EI, because of two main reasons. Firstly, little work has concentrated on trait EI in childhood, especially in elementary school children. Secondly, trait

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EI captures what a child believes about her/his abilities (Petrides & Furnham, 2003), in contrast to ability EI that focuses on knowledge and abilities in the emotional domain. In other words, trait EI involves self-evaluations of one's own emotional knowledge and efficacy, that are personally meaningful, and may exert a significant influence on how a child manages emotionally challenging situations at school as well as on actions and decisions that are related to academic performance.

In the current study we used the Bar-On & Parker (2000) practitioner-oriented vision of EI. The BarOn model proposes that EI consists of four primary abilities: intrapersonal (the ability to recognize and express effectively one's own feelings and needs), interpersonal (the ability to understand others' emotions and engage in satisfying interpersonal relationships), adaptability (the ability to adapt to novel situations and solve problems of a personal or social nature), and stress management (the ability to cope with difficult and strong emotions and the ability to control impulsive behaviors).

Research investigating the relationship between trait EI and academic achievement has produced mixed findings. Some studies have supported the link, others have reported null results, and yet other studies have shown that the association is specific for some trait EI dimensions but not for others (Brouzos et al., 2014). These studies are very heterogeneous, not only because of the diversity of the emotional competences that are approached, but also because of the manner in which academic achievement is tested. So, despite fairly intensive research over the past years, the mechanisms underlying the relationship between trait EI and academic achievement in childhood are generally unknown (Keefer et al., 2012).

Research has started taking into account possible indirect routes through which trait EI may be exerting influence on academic performance. For example, trait EI has shown to predict important factors for a successful teaching and learning experience, such as critical thinking and collaborative learning (Fernandez et al., 2012), cognitive and affective engagement (Maguire et al., 2017) and creative skills (Sánchez-Ruiz et al., 2011). Past work has also shown that emotional self-efficacy enhances academic self-efficacy, which, in turn, improves academic performance (Hen & Goroshit, 2014). Many authors have argued that the reason trait EI is linked to academic outcomes is because it facilitates the adaptive coping and emotion regulation necessary to face academic stress (e.g.,

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Saklofske et al., 2012). However, it is also possible that the EI-academic performance association is attributable to the content of what is learned (MacCann et al., 2020). In this sense, emotional content is evidently more relevant to humanities-related subjects (where accurately portraying and evoking emotion can be part of the assessable content) as compared with mathematics (where the content is completely unrelated to emotions).

Focusing on primary education, Eastabrook et al. (2005) found a positive relationship between emotional intelligence and academic achievement. They divided a sample of school children, based on the end-of-year Grade Average Scores (GPA), into three groups: "above average," "average," and "below average". "Above average" children scored higher compared with the other two groups on the overall EI trait score (as measured by the EQ-i:YV scale), and on two of its subscales assessing interpersonal and adaptability skills. Similarly, Qualter et al. (2007) showed that high and average trait EI students achieved significantly better grades at the end of the school year compared with a group of children with lower trait EI scores in a primary school group.

Finally, in a later study, Brouzos et al. (2014) examined the relationship between trait EI with academic achievement in a sample of children aged 8 to 10 and 11 to 13. In the younger group, total EI was not significantly correlated with academic achievement; but at the subscale level, one of the EQ-i:YV subscales, adaptability, correlated positively with young children's average grade scores in Maths and Greek. Conversely, in the 11- to 13-year-old group, the results showed that children's total EI scores predicted performance in both academic subjects. At the subscale level, significant positive associations were found between the EI scales: stress management, intrapersonal EI, and adaptability skills with children's average grade in both academic subjects.

Extending the research to high school students, Parker et al. (2004a) found that academically successful students had more advanced adaptability and stress management skills than their peers. A finding that is in line with a longitudinal study by Parker et al. (2004b) which determined that the intrapersonal ability, stress management and adaptability were the EI dimensions that best predicted academic achievement in the transition of students from high school to university.

Social Skills and Academic Achievement

An increasingly robust body of literature suggests that social skills and academic achievement are closely linked (Coplan et al., 2001; Denham et al., 2012; Eisenberg et al., 2010; Valiente et al., 2008; Wentzel et al., 2012). Well-developed social skills contribute to academic success and improve the learning environment for everyone. Students with these skills tend to pay better attention to speaker, work more cooperatively with others, ask for help when needed, and behave more responsibly in class (Caprara et al., 2000).

Social skills are learned behaviors that promote positive interactions while simultaneously discouraging negative ones when applied to appropriate social situations (Gresham & Elliott, 2008). The most common social skills behaviors include: Communication (taking turns and making eye contact during a conversation, using appropriate tone of voice and gestures, and being polite by saying 'thank you' and 'please'); Cooperation (helping others, sharing materials, and complying with rules and directions); Assertion (initiating behaviors, such as asking others for information, introducing oneself, and responding to the actions of others); Responsibility (showing regard for property or work and demonstrating the ability to communicate with adults); Empathy (showing concern and respect for others' feelings and viewpoints); Engagement (joining activities in progress and inviting others to join, initiating conversations, making friends, and interacting well with others); Self-Control (responding appropriately in conflict and non-conflict situations).

According to DiPerna & Elliott (2002) social skills can be considered as academic facilitators. This is, attitudes and patterns that allow the student participate and benefit of the classroom instruction, embracing factors such as motivation, interpersonal abilities, implication or study techniques (Welsh et al., 2001). Students who lack these skills are unlikely to meet their teachers' behavioral expectations and are at-risk for pejorative outcomes including poor school adjustment in the form of impaired relationships with teachers and peers, academic underachievement and high rates of disciplinary contacts (Walker & Severson, 2002). Finally, Akbaribooreng et al. (2015) suggest a significant positive relationship between social skills and academic performance in a group of high school students, exposing that pupils with high social competence tend to be more pro social and perform better in school.

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However, not all the SS affect school success in the same way. Many authors (Gresham, 2000; Lane et al., 2004; Lane et al., 2006) point out that self-control, cooperation, assertion and compliance with the rules, are the main SS related to academic achievement. Especially these ones have been studied in depth by Lane et al. (2010) and have been considered crucial for academic achievement.

In this line, Gresham et al. (2000) examined which social skills were rated as critical to classroom success by upper elementary school teachers. Their findings suggested that teachers view self-control and cooperation as more important than assertion skills. In another study of Mudarra & García-Salguero (2016) with high school teachers in Spain, apart from the ones described above (assertion, self-control and cooperation), they also include as very important for academic success, responsibility and extroversion. Especially, teachers consider that for academic achievement is crucial the ability to speak in an appropriate tone of voice (communication), defend themselves (assertion), being able to initiate conversations with their peers (extraversion) and express themselves in an appropriate language when one is contradicted and reach agreements and assume compromise in conflictive situations (self-control).

However, there is very little research in this area at primary school level. In Portugal two studies relate emotion understanding to academic achievement in elementary school (Silva, 2012; Rocha, 2016). In both studies, the results suggest some relation between emotion understanding and the grades obtained in Portuguese and mathematics. However, and according to the studies carried out by the latter, the influence that emotion understanding has in predicting academic achievement is affected by social competence, in a way that social competence is a mediator that facilitates the relationship with others.

Understanding which Social Skills are considered very important for the academic achievement of the students would provide proposals to prevent maladaptive behaviour, reducing the students vulnerability, optimizing social relationships -interactions with peers and teachers- and reaching better academic goals.

Present study

The present study aims to assess potential links between trait EI, SS and academic achievement in a primary school sample.

The study aims to extend previous research in the following ways. Firstly, we assessed our predictions with elementary students to analyse if the relationships found in older ages are the same in younger children. This would raise the possibility that the effects of trait EI may vary across educational levels as well as across subjects.

Secondly, the majority of previous studies have focused exclusively on overall EI and SS scores, and very few have explored the links between specific EI dimensions and SS factors with academic achievement. Thus, in this study it was considered important to examine the relative contribution of each of the individual dimensions EI on children's achievement at school.

Finally, earlier research has, in most of the cases, operationally defined children's SS and EI either in terms of peer evaluations or by means of parents or teacher reports. In the current study, we opted for a more comprehensive assessment by asking directly to the children to get a better characterization of their behaviours and beliefs.

Specifically, the aims of the study are:

(i) Examine in depth the relationship of school performance with EI and SS.

(ii) Identify which specific dimensions of EI and SS are more related to academic achievement.

(iii) Explore if these relationships are different in maths and language.

Method

Participants

One hundred eighty primary education students aged between 8 and 11 years participated in the study (M = 9.67). There was a balance of boys and girls. The sample was recruited from two schools in the province of Girona, in Catalonia, Spain. Schools had similar characteristics in

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terms of students and both had two groups per grade. The sociocultural environment was also very similar, as they belong to the same neighbourhood. Table 1 shows the main characteristics of the sample.

TABLE I. Main descriptive data of the participants

Sample characteristics	***N* = 180**
Age, *M*, years	9.67
Sex, female, %	47.2
Grade, %	
3rd	48.1
5th	51.9
General Intelligence, *M (SD)*	18.5 (6.4)
Non-verbal Intelligence, *M (SD)*	9.6 (3.4)

In order to ensure that our sample size was sufficient to detect an adequate effect, we computed post hoc power analyses using G*Power 3.1 Software (Faul et al., 2007). Results revealed that our total sample size of 180 participants was sufficient to detect with a .99 power a medium effect size ($f^2 = .15$).

Procedure

Data collection took place at the school attended by the children, with the required written consent and authorization granted by the parents and the school board, and following the ethical principles of scientific research. The questionnaires were administered to all students in the mainstream classroom in two different sessions. The first one, which lasted one hour, included the assessment of emotional intelligence and social abilities, while the second one, which took place one week later, was devoted to test the linguistic and mathematics competences with a standardized test and lasted 90 minutes.

Measures

Emotional Intelligence. The Spanish version of the BarOn EQ-i:Yv (Bermejo et al., 2018) was used to evaluate the emotional competence of the students. In this self-report, students are asked to respond to the statement that best describes the way they feel, think, or act in most situations using a 4-point Likert-type scale, ranging from 1 (*very seldom or not true of me*) to 4 (*very often true or true of me*). The instrument consists of 60 items divided in four sub-scales: interpersonal EI (the ability to understand others' emotions and engage in satisfying interpersonal relationships; 12 items), intrapersonal EI (the ability to understand own emotions and communicate them to others; 6 items), adaptability (the ability to be flexible, realistic, and effective in problem solving and managing change; 12 items), and stress management (the ability to manage and control own emotions and to respond calmly to stressful events; 12 items). A high score on any individual ability scale (or the total score) reflects a high level of social and emotional competency. The total emotional intelligence is rated by an IQ score (M = 100, Sd = 15).

Social Skills. Social skills were rated with the Social Sills Improvement System (SSIS; Gresham & Elliott, 2008). The SSIS is a self-report normed test for children between the ages of 3 and 18 and includes domains in the areas of socials skills, problem behaviors, and academic competence. For the aim of our study, we only used the first one. The social skills part includes seven subscales: 7 communication items (e.g., making eye contact), 6 cooperation items (e.g., helping others), 7 assertion items (e.g., initiating behaviors), 6 responsibility items (e.g., showing regard for property), 6 empathy items (e.g., showing concern and respect for others), 7 engagement items (e.g., joining in activities) and 7 self-control items (e.g., responding appropriately in conflict and non-conflict situations), for a total of 46 items in the overall social skills domain. On each of the items, students rated the frequency of a particular social skill using a 4-point scale of *Never*, *Seldom*, *Often* or *Almost Always*. Total raw scores, general for social skills and of each subscale were used in the analyses.

Linguistic and Mathematics competence. We used a standardized set of tests for children that are administered to all primary school students of Catalonia (Spain). Although there is a test for each of the main school subjects, we selected just two for the aim of our study: the

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Catalan (language) and mathematics ones. The tests used in this study were the version of the 2016–2017 academic year for 3rd grade and the version of 2011–2012 for 5th grade. These versions were selected together with the teachers of the participants to ensure that the tests had not been administered before to the students. The Catalan test of 3rd grade consisted of a narrative text with eight reading comprehension questions. From those, five were multiple-choice questions with four possible answer options, and three were open questions, in which they needed to write down a short answer. The 5th grade test consisted of a reading comprehension task and a writing exercise. In the reading task, students had to read a text and answer 12 questions (11 multiple-choice and one open question). In the writing exercise students had to write a short text of about 50 words. Both the reading comprehension task and the writing task were scored from 0 to 10, according to the correction criteria established by the Department of Education. Moreover, to ensure the maximum objectivity in the qualification of the writing task, the first author and another researcher not involved in the study evaluated the exercise, and the inter-rater agreement was calculated with the Cohen's Kappa statistic. The obtained value was $\kappa = 0.64$, showing a considerable accordance level (Landis and Koch, 1977). The average score of the two tasks was used as the global grade of linguistic competence. On the other hand, the mathematics test had the same format for both courses. It consisted of 5 activities based on daily situations with different type of exercises in each (multiple choice questions, chart interpretations, circle the correct drawing, etc.). Each student had one hour to finish each test and they were scored in a 0-10 scale to obtain a global grade of linguistic competence and mathematics competence. To get a global score of their performance in both subjects, the arithmetic mean between the both (linguistic and mathematics competence) was calculated and it was categorized as academic achievement.

Data analyses

Two sets of analyses (bivariate correlational analyses and regression analysis) were performed using the computer program IBM SPSS Statistics 25.

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Results

The means and standard deviations of each of the study measures are shown in Table 2.

TABLE II. Statistical measures of EI, SS and school competences scores.

Measure	M	SD	Min	Max
Total Emotional Intelligence	102.11	13.90	65	139
1. Intrapersonal	102.43	14.34	64	141
2. Interpersonal	102.72	13.96	56	131
3. Adaptability	101.21	15.09	54	137
4. Stress Management	98.57	14.34	60	133
Total Social Skills	103.86	12.61	66	128
1. Communication	14.69	2.85	4	18
2. Cooperation	16.86	2.99	7	21
3. Assertion	14.80	3.44	6	21
4. Responsibility	16.19	2.88	7	21
5. Empathy	13.95	2.82	5	18
6. Engagement	16.74	3.58	4	21
7. Self-control	11.62	3.74	3	18
School Competences	7.41	2.03	1.85	10
1. Maths score	7.35	2.03	1.5	10
2. Catalan score	7.46	2.43	1.3	10

Correlations among the various EI and SS variables and school competences scores were calculated and are presented in Table 3 As the table shows, the total EI and SS scores were significantly correlated with the language competence (Catalan grade) (EI: r = .198; SS: r = .158) but not with the mathematics one.

At a subscale level, adaptability and interpersonal EI were the EI components more related with the overall academic achievement.

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Especially adaptability emerged as the only factor that significant correlates with both subject scores (Catalan: r = .200; mathematics: r = .224), together with the interpersonal factor for language (r = .218) and the intrapersonal for mathematics, in this case negatively (r = -.153). So, most of the EI factors (all of them except stress management) had some kind of relation with academic achievement, either with mathematics or Catalan.

Regarding social skills, communication and cooperation were the SS components that significantly correlated (Communication: r =. 214; Cooperation: r = .269). Responsibility also showed a low significant correlation with the language score (r = .175).

TABLE III. Correlations between IE, SS and mathematics and Catalan competence scores.

Measures	Academic achievement	Maths Competence	Catalan Competence
Emotional Intelligence	.145	.054	**.198***
1. Intrapersonal	-.086	**-.153***	-.016
2. Interpersonal	**.175***	.086	**.218****
3. Adaptability	**.235****	**.200****	**.224****
4. Stress management	.079	.065	.077
Social Skills	.124	.061	**.158***
5. Communication	**.214****	**.159***	**.223****
6. Cooperation	**.269****	**.156***	**.316****
7. Assertion	-.044	-.086	-0.03
8. Responsibility	.125	.039	**.175***
9. Empathy	.083	.081	.071
10. Engagement	-.020	-.063	.019
11. Self-control	.096	.085	.089

* p <.05; ** p <.01

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A stepwise linear regression analysis was conducted to investigate which components of EI and SS were more predictive of mathematics and Catalan scores. Table 4 shows the results of the regression analyses for mathematics. Model 1, including Adaptability, was statistically significant ($F(1,165) = 6.878$, $p < .010$), with an adjR^2 of .034. Model 2, which included the interpersonal factor of EI, was statistically significant ($F(2,164) = 8.165$, $p < .001$, with an adjR^2 of .079. In this case, both (Adaptability and Intrapersonal EI) were positive statistically significant predictors in the model, and the explained variance lightly changed (R^2 change = .051). Entering Engagement in the next step, the explained variance in maths score did not change significantly, (R^2 change of .022, Fchange $(2,163) = 6.951$, $p < .001$), though all the variables remained significant. Finally, the last model (4), adding communication, was the one that fitted best, explaining 16.5 % of the variance in maths score ($F(4,162) = 7.995$, $p < .001$, with an adjusted $R^2 = .144$. All the variables (Adaptability, Intrapersonal EI, Engagement and Communication) also remained as significant and positive predictors for maths score in the full model.

TABLE IV. Linear regression analysis between components of EI and SS and maths score.

Variables	β	Typ. Error	Beta	t	Sig	F	Adjusted R^2
Model 1							
Constant	4.729	1.030		4.592	.000	6.878	.034
EI-Adaptability	.026	.010	.200	2.623	.010		
Model 2							
Constant	7.130	1.282		5.562	.000	8.165	.079
EI-Adaptability	.036	.010	.272	3.476	.001		
EI-Intrapersonal	-.033	.011	-.236	-3.019	.003		
Model 3							
Constant	7.652	1.295		5.909	.000	6.951	0.97
EI-Adaptability	.044	.011	.333	4.012	.000		
EI-Intrapersonal	-.031	.011	-.222	-2.852	.005		
SS-Engagement	-.092	.045	-.165	-2.050	.042		

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Model 4							
Constant	6.031	1.361		4.431	.000	7.995	.144
EI-Adaptability	.043	.011	.326	4.037	.000		
EI-Intrapersonal	-.027	.011	-.197	-2.595	.010		
SS-Engagement	-.179	.052	-.322	-3.466	.001		
SS-Communication	.192	.061	.275	3.159	.002		

Table 5 shows the results of the regression analyses for the Catalan score. In this case, only one model was obtained. As seen, adaptability (EI) was the only component significantly related to the grade in Catalan ($F(1,165) = 9.281$, $p < .003$), with an adjusted R^2 of .048. This means that the model explained 4.8 % of the variance in the sample Catalan scores, or what is the same, participants' predicted Catalan score increases .036 points for each point of adaptability. In this case, compared with the correlations presented before, adaptability was the only factor that remained significantly associated with the Catalan score, since the rest of EI components and all the SS components disappeared.

TABLE V. Linear regression analysis between the components of EI and SS and Catalan score

Variables	β	**Typ. Error**	**Beta**	**t**	**Sig**	**F**	**Adjusted R^2**
Model 1							
Constant	3.852	1.218		3.163	.002	9.281	.048
Adaptability	.036	.012	.231	3.047	.003		

Discussion

The present research provided support for the relationship between EI and SS and academic achievement in a sample of primary school children. Especially, the Interpersonal and Adaptability components of EI, together with the Communication and Cooperation factors of SS, have showed to have the strongest relationship with academic achievement.

These findings give evidence that both EI and SS are related to the academic achievement of the students, an idea that is in line with previous research (Gresham et al. 2000; Lane et al., 2004; Mavroveli & Sánchez-Ruiz, 2011; Qualter et al., 2012). The involvement of the EI in predicting competence scores may be explained in terms of the benefit of managing and controlling emotions whilst problem solving. This is, students with higher EI levels are more able to regulate the negative emotions related to academic performance, such as anxiety, boredom or disappointment. On the other side, having adequate social skills, such as communication and cooperation is key to develop successful interactions in the school setting, which in turn, will end up with better academic performance.

In our study general EI score was related to language competence but not to the mathematics one, a finding that is in line with Petrides et al. (2004). This can be attributable to the content of what is learned, as humanities is more emotionally charged than mathematics.

Regarding the specific components, the fact that Adaptability and the Interpersonal factors have been the EI components more related to academic achievement is not surprising. The interpersonal component is related to social awareness and, therefore, students that have high scores on it are children who are good at listening and are able to understand and appreciate other's feelings (BarOn & Parker, 2000). As a result, a student with good interpersonal skills engages in satisfying social relationships, which in turn, facilitates a good classroom environment for learning. On the other hand, the component of Adaptability is defined by these authors as the ability to manage the change. Thus, it can be hypothesized that students with high adaptability scores are good at finding solutions for the problems they face, the difficulties they experience and the things they do not understand in the classroom.

In terms of SS, Communication and Cooperation were the components that stood out as more important for academic achievement. Communication is integral to effective academic collaboration. Pupils who have good communicative skills are able to discuss and exchange ideas effectively with their teachers and peers, which is the basis of the learning process. Cooperation, in turn, means being able to work together, engage in teamwork, having abilities to solve conflicts and valuing others' tasks. Nowadays that achievement in academic settings increasingly requires performance not only in individual tasks, but also in collaborative environments (project-based methodologies, problem-

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based learning, etc.), it is obvious that cooperation skills may help to perform better in schools.

Emotional Intelligence

Focusing in each of the subjects in particular, we have seen that Adaptability stood out as the emotional component more related to the language score. In practical terms, Adaptability is conceptualized as reality testing, flexibility, and problem solving (BarOn & Parker, 2000). Therefore, it makes sense that, during the reading exercise, students may use mainly this ability to follow successfully the passages of the story: using strategies to validate regularly if they understand or not what is happening in the story, and thus continue reading or go back to reread any of the paragraphs. Moreover, this component of Adaptability and its associated flexibility might enable students to put themselves in the shoes of each character and empathize with them, being able to answer correctly to questions about feelings and/or emotions (*What was the intention…? Did Mr. Hopper feel satisfied?...)* as well as more implicit questions, whose answers are not directly found in the text. Regarding the writing task, this ability would help to consider the characteristics of the receiver of the text and consequently adapt the register to them.

The fact that the Interpersonal and Intrapersonal components of EI did not predict significantly the Catalan score might seem contradictory, given that this subject requires constant interaction with others and the ability to understand and express feelings. A possible explanation is that at age 8-10, the linguistic curriculum involves many elements (such as spelling, punctuation and grammar) which do not appear to rely on interpersonal and intrapersonal skills (Jordan et al., 2010).

In the case of mathematics, Adaptability and Intrapersonal (in a negative way) were the EI components more related to its score. In the mathematics context, Adaptability can be described as the students' capacity to adapt in order to deal with novelty or change in their mathematics schoolwork: altering the way they think about a problem, changing the way they try to solve it, or down regulating their emotions (e.g., reducing anxiety, frustration) when considering the mathematics problem. The nature of mathematics involves students consistently learning and applying new knowledge in a variety of very different topics that often require

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unique skills (Collie & Martin, 2017). Thus, Adaptability is required on a regular basis in order for students to learn and engage effectively with mathematics.

We have found that Adaptability was a predictor of the scores of language and mathematics. In this sense, our results are in line with the ones from Brouzos et al. (2014) and Hogan et al. (2010), which also identified Adaptability as the most important EI factor for academic achievement.

The scores on the Intrapersonal EI component were negatively related to the students' academic achievement in mathematics. The intrapersonal factor involves the knowledge and labelling of one's own feelings (BarOn & Parker, 2000). In the subject of mathematics, which is usually a subject that requires a lot of concentration and attention, it could be useful to not think about or consider the own feelings and emotions and be stuck on them. The students who have low levels of intrapersonal factor usually are more reserved and can use their cognitive resources to the task instead of revolving around their feelings.

Social Skills

Focusing on social skills, Engagement and Communication were the components more associated with the scores in mathematics, however the first one in a negative way too. This is in line with previous research (Ackerman et al., 2001; Furnham et al., 1998).

According to Gresham et al. (2000), Engagement include facets related with social interaction such as joining activities in progress and inviting others to join, initiating conversations, making friends, and interacting well with others. By this definition we can deduce that Engagement is closely related to extraversion. The negative link between Engagement and mathematics achievement may be a result of less engaged students spending less time socializing and more time focused on their tasks. Furthermore, according to Chamorro-Premuzic & Furnham (2003) a lower level of engagement may present an advantage when students are expected to give convergent answers (such as in mathematics) rather than divergent ones (such as in language).

Regarding Communication, students who have good communication skills are able to explain adequately their answers and results, present

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alternative strategies to solve problems, are receptive when others explain their points of view and respect turns when talking. When the students discuss with other students and teachers, and consider other points of views about concepts, theorems, principals and the underlying processes involved in solving them, they are strengthening their understanding and internalizing in a better way the concepts that have been worked.

Future studies, limitations and implications

Although finding interesting associations between EI and SS and academic performance, these were quite weak. The fact that previous studies done with older students (high school and university level) found stronger relationships between EI and academic achievement (Mayer & Cobb, 2000; Parker et al., 2004a,b; Petrides et al., 2004) may be due to the development of EI. This is, emotional intelligence develops with age and experience; therefore, the lower scores and the lack of some associations found compared to previous studies may be explained by this fact: the immaturity of emotional competencies, and the need to develop them (Zins & Elias, 2007). Also, the lack of significant correlations between academic achievement and total EI and SS scores in the present study can be explained by the mixture of positive, negative and negligible relationships observed between academic achievement and the different subscales. Finally, the weaknesses of the correlations may also be because these constructs act as moderators instead of having a direct effect in the school field. In the same manner, personality characteristics were not taken into consideration, which would have been important, seeing that some authors argued that intelligence and personality are better predictors of academic achievement than emotional and social competences (e.g. Barchard & Christensen, 2007). Another variable that could be analysed in future studies are teacher-children relationships. Different studies reveal that this type of relationships as well as the affective relation between them is important to the comprehension of school achievement (Pasta et al., 2013) and the development of social and emotional competences (Franco et al., 2017). Future research could have into account these variables when studying the relationship between EI and SS regarding academic achievement, to have a more completed perspective of their influence.

Despite our promising results, there are some methodological limitations that should be taken into account when interpreting them. First, the emotional intelligence and social skills of the participants were evaluated through self-report instruments. Some authors have arguments against the use of self-report methods with children because they make them to show themselves in a more desirable social way (Matthews et al., 2007). Another limitation is the characteristics of the sample. Specifically, it would have been beneficial to have a larger sample that represented students from a wider range of grades. This would have allowed observing developmental trends in these relationships. However, now that some preliminary work has been done laying the foundation for predictive pathways between SS and EI on one hand, and academic achievement on the other, a hypothesized causal model could be constructed and tested in future studies.

Some practical implications may be suggested from the study contributions. First, the need to carry out a comprehensive education in schools that addresses the promotion of not only academic but also social and emotional competences. For this reason, improving emotional intelligence among teachers should also be a fundamental element. Therefore, teacher programs in higher education institutions should start instilling elements of emotional intelligence in its curriculum as well as providing activities and continuous training to actual teachers to help them develop these competences. Regarding SS, they can also be taught or enriched in the school environment, through adequate learning experiences (García-Sáiz & Gil, 1995). This could prevent maladaptive behaviours, enhance social relationships and satisfying interactions between teachers and students, and therefore promote a better academic achievement. Finally, with the current trends in the school system, which emphasizes the students' ability to express themselves and have an active role in the teaching and learning process, it is mandatory that a student acquires good interpersonal communication skills. In fact, nowadays group activities are being more and more used as an assessment and learning practice, so managing the social relationships and interpersonal conflicts of the group may become really important. For this reason, schools should attempt to embed these qualities within the content that is taught and assessed.

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Conclusion

The present study has found relationship between specific aspects of EI and SS and school performance. Especially, the results showed that in language (Catalan) Adaptability is the most important emotional factor, whereas, in mathematics apart from Adaptability, Intrapersonal (in a negative way) is also crucial, together with the social skills of Communication and Cooperation.

This investigation contributes to the existent literature about EI and SS in the school context in different ways. First, it is the first research, to our knowledge, that not only focuses its attention in the possible influence of the EI and SS in the performance of a subject, but also determines how each of the specific components of EI and SS are related to them. In second place, we observed that several components of the EI and SS, to a greater or lesser extend, are related to school achievement, highlighting the importance of social and emotional competences in the school context. Finally, our study has been one of the very few in testing the relationship between EI and SS and academic achievement in primary education students, demonstrating that the relationships found in older students, are already present from very young ages.

To sum up, the current results suggest that those students who are equipped with certain social and emotional skills benefit of better academic performance. Thus, schools should promote these factors and skills among students in order to help them achieve all their potential.

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Contact address: Georgina Perpiñà Martí. Universitat de Girona, Departamento de Psicología. Plaça Sant Domènec, 3, 17004 Girona. E-mail: georgina.perpinya@udg.edu