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Emotional intelligence and school climate in primary school children in Spain, Norway, and Poland

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Keywords

Clarity
Emotional care and reparation
Cross-cultural
School climate
Well-being

Abstract

Introduction: Emotional intelligence is defined as the ability to manage emotions effectively. It has a clear impact on the well-being of schoolchildren. A large body of studies has shown how emotional intelligence impacts on psychological and contextual variables, but less is known about how school context may influence in emotional development during childhood. The objectives of this research were to describe the level of emotional intelligence and school climate for schoolchildren in Primary Education in three European countries, to explore the association between school climate and emotional intelligence, and analyzing the moderating role of gender and country. Method: 1,104 schoolchildren participated (528 from Spain, 252 from Poland and 324 from Norway) (50.6% girls; M_{Age} = 10.49 years; *SD* = 1.3). Validated self-report in the three languages were used, *Trait Meta-Mood Scale-24 and Modified-Delaware School Climate Survey-Student*. Results: Descriptive analysis showed higher levels of emotional intelligence in Spanish schoolchildren and higher level of school climate. Girls showed higher levels of emotional repair compared to boys. Multiple multivariate regression models indicated the association between school climate and emotional intelligence. Gender and country did not moderate the relationship between school climate and emotional intelligence dimensions. Conclusions: This study highlights the importance of the quality of the climate in schools in different European regions to promote the level of emotional intelligence of boys and girls in Primary Education.

Inteligencia emocional y clima escolar en escolares de primaria de España, Noruega y Polonia

Palabras clave

Claridad
Atención y reparación emocional
Interculturalidad
Clima escolar
Bienestar

Resumen

Introducción: La inteligencia emocional se define como la capacidad de gestionar eficazmente las emociones. Tiene un claro impacto en el bienestar de los escolares. Un gran número de estudios ha demostrado cómo la inteligencia emocional influye en variables psicológicas y contextuales, pero se sabe menos sobre cómo el contexto escolar puede influir en el desarrollo emocional durante la infancia. Los objetivos de esta investigación fueron describir el nivel de inteligencia emocional y el clima escolar de los escolares de Educación Primaria en tres países europeos, explorar la asociación entre el clima escolar y la inteligencia emocional y analizar el papel moderador del género y el país. Método: Participaron 1,104 escolares (528 de España, 252 de Polonia y 324 de Noruega) (50.6% niñas, M_{edad} = 10.49 años; *DT* = 1.3). Resultados: El análisis descriptivo mostró mayores niveles de inteligencia emocional en los escolares españoles y mayor nivel de clima escolar. Las niñas mostraron mayores niveles de reparación emocional en comparación con los niños. Los modelos de regresión múltiple multivariante indicaron la asociación entre el clima escolar y la inteligencia emocional. El género y el país no moderaron la relación entre el clima escolar y las dimensiones de la inteligencia emocional. Conclusiones: Este estudio pone de manifiesto la importancia de la calidad del clima escolar en diferentes regiones europeas para promover el nivel de inteligencia emocional de los niños y niñas de Educación Primaria.

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Research has revealed that the way people process emotionally relevant information in complex situations is critical for healthy functioning and relationships (Rey & Extremera, 2014). Emotional intelligence (EI) is then seen as a potential protective mechanism for individuals when they face all types of stressful social events in all contexts, including school (Cañas et al., 2020). One of the most studied models of EI is the one proposed by Mayer and Salovey (1997), which contemplates various skills that gradually increase in complexity, so that each skill provides relevant information for the development of the next one (Fernández-Berrocal & Cabello, 2021). EI is defined as a system of mental abilities to access, perceive, understand, regulate, and process emotions to promote problem-solving in areas related to an individual's affect, or more specifically "(1) perceive emotions accurately, (2) use emotions to accurately facilitate thought, (3) understand emotions and emotional meanings, and (4) manage emotions in [oneself] and others" (Mayer et al., 2016, p. 291). These areas have also been methodologically named and specified in valid and reliable measurement instruments such as the Trait Meta Mood Scale (Fernández-Berrocal et al., 2004), which identifies them as emotional clarity, that includes perceive and use emotions, emotional attention that suppose understand emotions and emotional regulation, considering manage with them.

Research into the concept of EI has shown in recent decades that it is related to relevant aspects for children development such as physical and mental well-being, academic performance and school convivencia (that means fellowship between children, similar to coexistence) (Mayer et al., 2016). In this way, it has been proved that students with good levels of EI show low levels of psychological symptoms such as anxiety or stress and a greater facility for seeking positive emotions that improve their level of well-being (Fernández-Berrocal & Extremera, 2016; Megías-Robles et al., 2019; Sánchez-Álvarez et al., 2015). In addition, several studies showed that the development of empathetic and tolerant behaviors characteristic of a good level of EI in girls and boys favours more satisfactory peer relationships, which becomes a protective factor against bullying or cyberbullying situations (García-Sancho et al., 2014; Gómez-Ortiz et al., 2019; Gutiérrez-Cobo et al., 2017). In this line, literature review highlights that EI influence in school climate (Aguilar et al., 2019; Jiménez & Fajardo, 2010). However, how variables associated with the peer context may impact on EI development of schoolchildren have been less explored, and the results are not consistent, mainly if we consider the different dimensions of EI.

School climate is defined as a "pattern of students', parents', and school personnel's experience of school life that reflects norms, goals, values, interpersonal relationships, teaching, and learning practices, and organizational structures" (Cohen et al., 2009, p. 182). These authors identified four dimensions of school climate: safety, relationships, teaching and learning, and institutional environment. Thapa et al. (2013) endorsed these four dimensions in their review and added another dimension: school improvement. They considered these domains in order to review previous measures and create a psychometrically sound instrument to measure school climate. Despite the different approaches, research shows a relative consistency in the definition of this construct among review articles (Reaves et al., 2018), providing a solid support for continuing to build upon this framework.

Perceptions of school climate vary depending on students' gender: generally, boys report lower perceptions of school climate than girls (Bradshaw et al., 2010; Koth et al., 2008). In general, it has been found that girls reported better social support, school behavior, and teacher and peer support than boys (Romera et al., 2022; Wang & Dishion, 2012).

From a cross-cultural perspective, La Salle et al. (2021), in a study with students from 14 countries, found that approximately 30% of the nations met the criteria of being significantly different in relation to the different aspects that affect the perception of school climate. This means that, although the perceptions of students from different countries varied significantly on school climate in all dimensions, school climate is considered a cross-cultural construct, i.e., it has common characteristics even in educational contexts of different countries.

Research has highlighted the relationship between school climate and students' mental health and behavior. In this light, Weist et al. (2014) pinpointed the universal importance of the environment (school climate being part of it) in students' mental health and behavior. La Salle et al. (2021) also found a relationship between student-reported symptoms of mental health problems and their perception of school climate in most of the participants. Strategies to foster a positive school climate can then result in helping students learn to internalize the negative emotions they experience, analyze why they feel these negative emotions, and improve their social skills and EI (Trigueros et al., 2020).

However, few studies have paid attention to the effects of school climate in EI. This could be useful for designing intervention programs based on the improvement of socio-emotional competence, thus generating opportunities to improve school climate. This study builds on data collected in a European H2020 project, in which participated schools from Spain, Norway, and Poland. Considering participants from different countries would allow the results to be generalized. These three countries have some similarities, like a common individualistic culture and European educational policies to promote well-being, but differ in educational practices, what may be point of interest to explore understand children's emotional development. Although there are not, to our knowledge, previous studies that compare the effect of school climate on EI between these three countries, this study may be of interest to identify possible differences between countries with respect to gender and practices. These results may indicate the necessity to examine what characteristics led to more positive outcomes.

The present study

Previous research has explored the relationship between school climate and social behavior, but the impact on EI

remains unclear. It is also necessary to deepen the analysis of possible gender differences, given the moderating role of gender and country in social interactions and school violence (Falla et al., 2022; Yudes et al., 2022). Therefore, the aims of this study were: a) to describe the level of EI and school climate in Primary Education (aged between 9 and 12 years) of three European countries (Spain, Poland and Norway) b) to analyze the influence of school climate on dimensions of EI of schoolchildren; c) to explore the moderating role of gender and country on the effects of the school climate on EI. It is expected that girls show higher levels of EI than boys (H1). It is also expected that a better perception of school climate is related to a higher level of EI (H2) and that gender and country of schoolchildren are variables that moderate the relationship between the dimensions of EI and school climate, with girls with a higher perception of their classroom climate having a higher EI (H3).

Methods

Participants

The population consisted of 1,104 students (50.6% girls) in primary education from schools in Spain (n = 528; 48.1% girls; M_{age} = 9.94 years; SD = 0.87), Norway (n = 324; 50% girls; M_{age} = 10.33 years; SD = 1.1) and Poland (n = 252; 50% girls; M_{age} = 11.83 years; SD = 1.6), the sampling units being the teaching schools and the units of analysis the students. The age of the participants ranged from 8 to 12 years old (M_{age} = 10.49 years; SD = 1.3).

Spanish schools selected were public and charter, located in the province of Cordoba (in Andalusia, Southern Spain). In Poland, the schools from which the participants were drawn were publicly accessible and located in one of the major cities and its neighboring towns located in the western-central part of the country. In Norway, the schools that participated in the study were privately owned and belong to the municipality of Modum, located in southern Norway.

Instruments

To determine the level of EI, we used the *Trait Meta-Mood Scale-24* (TMMS-24; Fernández-Berrocal et al., 2004). This questionnaire consists of 24 items that are answered on a Likert-type scale 1-5. (1 = *Absolutely disagree*; 5 = *Absolutely agree*). These items assess three fundamental domains of EI, whose internal consistency, assessed through McDonald's Omega, was adequate: emotional attention (ω_h = .87) ("I usually care a lot about what I´m feeling"); clarity of feelings (ω_h = .86) ("I can always explain how I feel"); and mood repair (ω_h = .85) ("When I am angry I try to change my mood").

To asses school climate we used the *Modified-Delaware School Climate Survey-Student* (M-DSCS-S; Yang et al., 2013*)*. This self-report measure is composed of 17 four-choice Likert-type items (1 = *Strongly disagree*; 4 = *Strongly agree*). It has four factors that show adequate internal consistency as assessed through Macdonald's Omega: Teacher-student relations (ω_h = .84) ("Teachers care about their students"); student-student relations (ω_h = .84) ("Students are friendly toward most other students"); liking of school (ω_h = .64) ("I like this school"); fairness of school rules (ω_h = .71) ("Consequences of breaking school rules are fair"). The internal consistency for the complete instruments was also assessed through Macdonald's Omega (ω_h = .86). All the complete dimensions asses the school climate in the same direction, considering the relationships that can happen in a classroom and the importance of the school rules related with these relationships.

Procedure

Once the educational centers were selected, contact was established with them, sending the informative documentation and the request for authorization to the families beforehand. Participants also signed a consent form previously to data collection. During data collection, each of the classrooms was visited to carry out the survey, considering previously signed parental permission and informed consent from students as a criterion for participation. Schoolchildren were informed of the anonymous, confidential and voluntary nature of their participation. The average time taken to complete the questionnaire ranged between 30 and 40 minutes, during which time the researchers were present. The data collection was approved by the ethical committee of the University of Córdoba, AWF University in Poznan and SINTEF organization in Norway and is part of the European BOOST research project (ref. 755175), in which the selected schools participate and was carried out at the end of 2019.

Data analysis

In order to answer the first objective of this study, descriptive analyses were carried out, as well as tests for differences in means (Student's t-test, ANOVA test 3-way comparison, that was made with a Bonferroni correction of 0.05/3 = 0.0167 and not parametric test considering the data distribution). Cohen's d statistic (Cohen, 1992) was used to estimate the effect sizes of the differences between groups. In relation to the second objective, a Pearson correlation analysis was carried out to identify possible significant differences in the dimensions of EI depending on the school climate. Following the recommendations of Afifi et al. (2004), to determine whether an independent variable has an overall effect on the dependent variables, multivariate analyses were conducted in three steps. As a first step, gender and country were added to the model. Secondly, the three dimensions of EI and school climate were included, and in a third step, interactions between the dimensions of EI and school climate and gender were added to analyze the moderating role of gender in the associations between EI and school climate. For reasons of parsimony, only significant two-way interactions were reflected in the final multivariate model. To determine the signifi-

cance of the variables added to the model, the stepwise addition method was used with the variables resulting from the multivariate model, in which the model is compared considering changes in the multivariate Wilks' lambda test statistic. In a final step, linear regression was used, via the stepwise method, with those variables resulting from the multivariate model. The school climate instrument was considered as a single dimension for reasons of parsimony.

To illustrate the significant interactions resulting from the previous analyses, the simple slope test was calculated and plotted (Preacher et al., 2006). Data coding and analysis were performed with SPSS version 24 statistical package and the significance level adopted was .05.

Results

Descriptive analysis

Pooling all data from the three countries, the highest mean scores observed on the EI scale were found in the dimension of emotional repair (M = 3.72; SD = 0.86), followed by emotional clarity (M = 3.62; SD = 0.86) and emotional attention (M = 3.31; SD = 0.91). Considering the three subsamples by country, the highest mean for participants from Poland and Norway is in the dimension of emotional repair (M = 3.42; SD = 0.85; and M = 3.35; SD = 0.92, respectively), followed by emotional clarity (M = 3.20; SD = 0.82; and M = 3.20;

Table 1

Descriptive statistics and differences by country

Variable	N	M	SD	F	*p*	Comp.	*p*	*Dif. M*	*Cohen's d*
1				59.99	< .001				
Spain	496	3.6	0.74			Poland	< .001	.54	.03[a]
						Norway	< .001	.61	.04[a]
Poland	251	3.1	0.88			Spain	< .001	-.54	-.03[a]
						Norway	.633	.07	-.01
Norway	324	3	1			Spain	< .001	-.61	
						Poland	.633	-.07	
Total	1,072	3.3	0.91						
2				118.89	< .001				
Spain	507	4	0.64			Poland	< .001	.81	.05[a]
						Norway	< .001	.65	.05[a]
Poland	251	3.2	0.82			Spain	< .001	-.81	-.05[a]
						Norway	.105	.15	-.01[a]
Norway	324	3.3	0.92			Spain	< .001	-.65	-.05[a]
						Poland	.105	.15	.01[a]
Total	1,082	3.6	0.86						
3				49.73	< .001				
Spain	509	4	0.74			Poland	< .001	.56	.04[a]
						Norway	< .001	.44	.03[a]
Poland	251	3.4	0.85			Spain	< .001	-.56	-.04[a]
						Norway	.216	-.12	-.01[a]
Norway	324	3.5	0.92			Spain	< .001	-.44	-.03[a]
						Poland	.216	.12	.01[a]
Total	1,084	3.7	0.86						
4				99.122	< .001				
Spain	507	3.2	0.34			Poland	< .001	.45	.03[a]
						Norway	.002	.10	.01[a]
Poland	206	2.8	0.40			Spain	< .001	-.45	-.03[a]
						Norway	< .001	-.35	-.02[a]
Norway	324	3.1	0.45			Spain	.002	-.10	-.01[a]
						Poland	< .001	-.35	.02[a]
Total	1,084	3.1	0.43						

Note. 1 = Emotional attention; 2 = Emotional clarity; 3 = Emotional repair; 4 = School climate.
[a] Low effect size (< .50).

SD = 0.82) and emotional attention (*M* = 3.08; SD = 0.88; and *M* = 3.01; *SD* = 1.02). In Spain, the highest mean was observed for the emotional clarity dimension (*M* = 4.01; *SD* = 0.64), followed by emotional repair (*M* = 3.99; *SD* = 0.74) and emotional attention (*M* = 3.62; *SD* = 0.64). The mean comparison test showed that the Spanish sample presented the highest levels in the three dimensions analyzed, as well as in the school climate dimension (*M* = 3.02; *SD* = 0.34) (see Table 1).

Significant differences were observed between boys and girls in emotional attention, with girls having higher scores compared to boys, *t* (549, 1068) = -2.313, *p* < *.05* (d = -.01) (see Table 2).

The correlation analysis of the variables analyzed showed a positive relationship between all the dimensions of EI and school climate, highlighting the relationship between climate and emotional repair (see Table 2).

Multivariate regression model

Analyses of the general multivariate model showed significant relationships between school climate and the dimensions of EI (see Table 3). Gender was not significantly associated with the dependent variables. Country was significantly associated with EI in model 1, an association that remained statistically significant in successive models. In model 2, emotional attention, emotional clarity, and emotional repair were significantly associated with country and school climate. The interaction between country and school climate was significantly related to the dependent variables in model 3.

Univariate regression models

Table 4 shows the univariate statistics of the linear regression analyses in the three proposed models for the dimensions of emotional clarity, emotional attention, and emotional repair. Considering emotional attention and school climate, the linear regression analyses showed statistically significant results ($F = 1.595$, $df = 158$, $p < .001$). Based on the significance of the change in R^2, model 2 was selected, with R^2 value of .139. To confirm the validity of the model, the independence of the residuals was analyzed. The Durbin-Watson statistic yielded a value of 3.332, confirming the absence of positive (values close to 0) and negative (values close to 4) autocorrelation.

Considering emotional clarity and school climate, the linear regression analyses showed statistically significant results ($F = 4.012$, $df = 158$, $p < .001$). Based on the significance of the change in R^2, model 2 was selected, with R^2 value of .228. To confirm the validity of the model, the independence of the residuals was analyzed. The Durbin-Watson statistic yielded a value of 3.650, confirming the absence of positive (values close to 0) and negative (values close to 4) autocorrelation.

Considering emotional repair and school climate, the linear regression analyses showed statistically significant results ($F = 3.339$, $df = 158$, $p < .001$). Based on the significance of the change in R^2, model 2 was selected, with R^2 value of .232. To confirm the validity of the model, the independence of the residuals was analyzed. The Durbin-Watson statistic yielded a value of 3.744, confirming the absence of positive (values close to 0) and negative (values close to 4) autocorrelation.

Table 2

Correlations and descriptive statistics by gender

	Gender differences									
Variables					Boys		Girls		*t*-student	
	1	2	3	4	*M*	*SD*	*M*	*SD*	*t*	*d*
1. EA	1				3.2	0.91	3.4	0.92	-2.13*	-.01
2. EC	.56**	1			3.6	0.85	3.6	0.86	-.220	0
3. ER	.44**	.62**	1		3.7	0.84	3.7	0.90	-.796	0
4. SC	.25**	.36**	.45**	1	3.1	0.43	3.1	0.42	-.668	0

Note. EA = Emotional attention; EC = Emotional clarity; ER = Emotional repair; SC = School climate.
*$p < .05$. **$p < .01$.

Table 3

Multivariate general linear model for emotional intelligence dimensions

	Model 1		Model 2		Model 3	
	Wilks Λ	F	Wilks Λ	F	Wilks Λ	F
Gender	.99	2.675**	.99	2.675**	.99	2.675**
Country	.93	10.051***	.93	10.051***	.93	10.051***
School climate			.61	2.128***	.61	2.128***
Gender × school climate					.83	1.041
Country × school climate					.84	1.443**

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 4

Coefficients of the Linear Regression model for the dimensions of attention, clarity and emotional repair

	Emotional Atention			Emotional Claruty			Emotional Repair		
	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2	β
Model 1	.098	.097**		.129	.128**		.098	.097**	
Gender			.073*			.013			.073*
Country			-.306*			-.360**			-.306*
Model 2	.142	.139**		.230	.228**		.142	.139**	
Gender			.068*			.005			.068*
Country			-.276**			-.316**			-.276**
School climate			.448**			.320**			.448**
Model 3	.142	.139*		.230	.230		.142	.139*	
Gender			.067*			.004			.067*
Country			-.325**			-.481*			-.325**
School climate			.196*			.269**			.196*
Country × School climate			.050			.167			.050

Note. $\Delta R^2 = R^2$change.
*$p < .05$. **$p < .001$.

Gender and country did not have a significant related variable in all models (see Table 4).

Discussion

The first objective of this study was to describe the level of EI and school climate in a sample of primary school students from three European countries (Poland, Norway, and Spain), considering possible differences according to gender and context. According to the first objective, the level of EI was measured based on three dimensions that have been extensively studied in various studies: emotional attention, emotional clarity, and emotional repair (Fernández-Berrocal et al., 2004). It has been observed that the dimension with the highest scores considering the data from the three countries is emotional repair, followed by emotional clarity, while emotional attention is the one with the lowest score. This is also true for the Polish and Norwegian sub-samples, while the Spanish data showed a higher level of emotional clarity, followed by emotional repair and emotional attention. This seems to suggest that Primary School pupils generally show adequate levels of EI, considering the descriptive nature of the measurement instruments used, which implies an adequate mastery of their emotions and their management. In the case of the Spanish sub-sample, the lower score in the dimension of emotional repair, which is considered a flexibility mechanism that allows the person to interrupt and regulate negative emotional states and prolong positive ones, should perhaps be interpreted as a lower capacity to modulate the meaning of their emotions. This result may be due to a lower time to social and emotional education in this country, according to cross-cultural studies (Scott, 2019). Emotional repair is a complex ability that requires specific school attention to help children to put in practice, mainly at this age of development in the transition from childhood to adolescence.

Regarding the gender of the participants, it was observed that girls had the highest mean scores in the dimensions of EI measured, finding statistically significant results for the dimension of emotional attention. Although both boys and girls have a good level of EI based on the scores obtained, differences in development throughout the transition from childhood to adolescence may explain the higher means for girls, since they are the ones who begin to perceive pubertal and psycho-evolutionary changes before boys (Mónaco et al., 2017; Pastor, 2016). These results are in line with those obtained by Pastor (2016), which indicated a better ability of girls to perceive and understand emotions.

The results show that building a better school climate impacts in all of the dimensions of EI, according to H2. Although previous studies highlighted that EI impacts positively on social relationships and school climate, these results give support to a bidirectional association in that having positive interactions with students and teachers and school engagement promotes children's emotional health. Further longitudinal analyses are required to explore this result deeply, but recent research seem to indicate that peer behavior impacts on children socioemotional development (Romera et al., 2021; Wong et al., 2021).

In relation to the variables related to the dimensions of EI with school climate considering the gender and country of the participants, although the results are in agreement with previous research indicating a relationship between the level of EI and school climate, regression analyses did not indicate that these variables can be considered as moderators of the relationship between these two complex constructs. Although previous research considers that the gender of schoolchildren influences the perception of their relationships with others and, therefore, school climate, considering that being a girl condition the level of EI (Bradshaw et al., 2010; Koth et al., 2008; Wang & Dishion, 2012), no such evidence has been found in the present study.

The importance of participants' gender in relation to specific dimensions of EI in relation to school climate would therefore not confirm the third hypothesis posed.

Likewise, the cultural perspective of this study, based on data from several European countries, offers a vision of the importance of addressing educational models that are committed to a socioemotional education that allows boys and girls to develop relationships with their peers and with all members of the educational community that allow for a harmonious and healthy coexistence. Although there are educational differences (while not significant) between countries, they belong to an individualistic culture, characterized by a greater promotion of individualistic values. It should be relevant to consider other cultures that promote collectivism in their schools. This study also confirms the suitability of measuring EI based on different dimensions, as already indicated in previous studies (Fernández-Berrocal et al., 2004; Vilareces et al., 2018). And the absence of differences between countries could explain, according to similar results (Domínguez-España et al., 2020), the importance of developing EI through the different programs being implemented in different countries.

However, this study is not free of limitations, such as those associated with the use of self-report as a measurement instrument that can always contain social desirability biases. Similarly, we could mention as a limitation the size of the sample, which is not representative of the European population. On the other hand, longitudinal research would allow a better understanding of the causes and nature of the relationships established in the model presented. Another limitation is related to some values in the R^2 models, which explain a low percentage of the variance of the dependent variable. Therefore, it would be convenient to test other moderators that could be affecting this relationship. Additionally, results about dimensions of EI should be considered with cautions because some the reliability of the instrument with the sample of study was low in one of their dimensions. Thus, as future lines of study, we propose to carry out a longitudinal study to check the stability of the models obtained and thus establish causal relationships between EI and school climate. Similarly, having a representative sample of the European population could allow us to generalize results regarding the level of EI, which could be considered for the development of intervention proposals to improve the level of this construct and the improvement of school climate and coexistence in educational centers. This could also contribute to the prevention of phenomena of risk of school violence (Moya-Solís & Moreta-Herrera, 2022).

As conclusion, this study highlights the main role of social relationships and the attention to the norms to live together into the schools to promote an emotional and healthy development. These results are very relevant, not only for the educational impact but also because it has been developed in children from different countries. There are few studies that consider early school ages (Kutnick et al., 2007). This study also contributes to highlight the need that school programs pay attention to emotional processes, and possible differences between girls and boys, that significantly contribute to academic results and mental health (Gamal et al., 2017).

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Conflict of interest

The authors have no conflicts of interest to declare.

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