



# Enhancing emotional intelligence at school: Evaluation of the effectiveness of a two-year intervention program in Spanish pre-adolescents



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## ABSTRACT

The objective of the present study was to evaluate the effectiveness of a two-year intervention program to promote emotional intelligence (EI) at school. Participants were 228 primary school pupils between 10 and 11 years old. This study evaluated the effects of the intervention using a pre- and post-experimental design with a control group and four evaluation moments. EI was assessed with the EQ-i:YV questionnaire by Bar-On and Parker (2000), adapted to Spanish by Ferrándiz, Hernández, Bermejo, Ferrando, and Sáinz (2012). The results showed the effectiveness of the intervention, highlighting an increase in all the EI dimensions of the Bar-On model: intra-personal, interpersonal, stress management, adaptability, and general mood. These findings suggest that EI can be improved. Results are discussed, and recommendations are made for future implementation.

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## 1. Introduction

In recent years, there has been growing interest in the role of emotional intelligence (EI) in students' emotional health (Martins, Ramalho, & Morin, 2010; Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007), academic success (Costa & Faria, 2015; Perera & DiGiacomo, 2013, 2015), and emotional adjustment in school (Mavroveli & Sánchez-Ruiz, 2011; Petrides, Frederickson, & Furnham, 2004). However, promotion of EI in schools has been controversial because it challenges traditional "rationalist" views of education (Humphrey, Curran, Morris, Farrell, & Woods, 2007). Furthermore, research findings in this area have been inconsistent (Nelis et al., 2011; Nelis, Quoidbach, Mikolajczak, & Hansenne, 2009; Pool & Qualter, 2012), and some important questions remain unanswered, such as whether EI can be taught in school, and whether improved EI would have an impact on children's emotional health.

However, first it is important to define what is meant by EI. Matthews, Zeidner, and Roberts (2002) defined EI as a set of hierarchically organized core competences for identifying, processing, and regulating one's own emotions and those of others. In addition, Petrides et al. (2004) consider EI to be a constellation of emotional self-perceptions and a collection of personality traits related to people's perceptions of

their emotional abilities. Moreover, EI can be conceptualized as an ability or a trait (Petrides & Furnham, 2003).

Initially, there were two major EI conceptual models: the Salovey-Mayer ability model and the Bar-On model of emotional-social intelligence (ESI). The Salovey-Mayer model defines EI as "the ability to monitor one's own and others' emotions, to discriminate among them, and to use the information to guide one's thinking and actions" (Salovey & Mayer, 1990, p. 189). The Bar-On (1997) model defines EI as "an array of non-cognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures" (p. 14). The ESI model combines cognitive abilities characteristic of EI with emotional facets or dispositions related to EI as a trait. Currently, two other important models complete the main conceptual frameworks: Petrides model and Mikolajczak tripartite model. The Petrides model (2011), the dominant trait theory of EI in the psychological literature, defines EI as a constellation of emotional perceptions assessed via questionnaires and rating scales (Petrides, Pita, & Kokkinaki, 2007). The tripartite model (Mikolajczak, Petrides, Coumans, & Luminet, 2009) integrates EI as a set of abilities, skills and dispositions. This latter perspective is particularly useful and provides a theoretical basis for the examination of increases in EI due to intervention efforts.

In any case, EI is clearly an important factor that leads to positive outcomes for individuals by providing the ability to adapt successfully to stressful environments (Ciarrochi, Deane, & Anderson, 2002). The meta-analytic reviews by Schutte et al. (2007), Martins et al. (2010), and Sánchez-Álvarez, Extremera, and Fernández-Berrocal (2015)

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synthesize a large number of empirical studies that have measured the effects of EI on adaptive outcomes in children, such as quality of life, academic success, resistance to stress, health, well-being, and the quality of their social relationships. Moreover, research suggests that behavioral interventions, may affect EI as a pertinent outcome (McIlvain, Miller, Lawhead, Barbosa-Leiker, & Anderson, 2015; Ruttledge & Petrides, 2012).

Taking these results into account, many school-based interventions designed to promote EI have been created within the framework of socio emotional learning (SEL) (see meta-analysis by Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011 of 213 school-based programs). After analyzing these programs, Matthews, Zeidner, and Roberts (2002, 2007) indicated that the main gaps in EI programs are: (1) most of them lack a clear theoretical and methodological rationale; (2) they usually target only some EI dimensions and add a number of skills that are not considered parts of EI; (3) when evaluations exist, they are limited to teachers' subjective impressions; (4) they do not consider the long-term effects; and (4) few of the evaluations include a control group. In fact, in their review about the role of EI in the school context, Zeidner, Roberts, and Matthews (2002) point out that most intervention programs are not specifically designed to change EI, and very few systematic interventions meet the requirements for internal and external validity.

Based on the evidence proposed, in order to respond to some of the issues mentioned above and address these gaps, this research evaluates the effectiveness of a school-based emotional intelligence program in the Spanish context. This program is called *EDI: would you like to travel around the planet of emotions? (EDI Program)*. Based on Zeidner et al.'s (2002) specific guidelines for the development, implementation, and evaluation of EI intervention programs: (1) the EDI program was based on a solid conceptual framework: the Bar-On model, a teachable and learnable model described by Bar-On (2006); (2) program goals were carefully specified; (3) the educational and developmental context for program implementation was identified, specifically pre-adolescents in school; (4) the EDI program was fully integrated into the school educational and instructional curriculum; specifically, our program was implemented by trained psychologists during two academic years (5th and 6th grade of Spanish elementary education) in regular tutorial classes; (5) we made provisions for practicing and generalizing the domain of emotional skills across different types of behavioral performance; (6) we provided professional development for program personnel; and (7) we used robust, experimental, psychometric designs to assess program effectiveness.

Thus, the current study extends previous research in at least four ways. First, we focused on all the emotional intelligence dimensions, based on the Bar-On model (intrapersonal skills, interpersonal skills, managing emotions, adaptability and general mood), rather than on only one specific component of EI. Some studies have shown that emotionally and socially intelligent behavior can be enhanced in school based on the Bar-On model. In this framework, the "Self-Science Curriculum" developed by Stone-McCown, Jensen, Freedman, and Rideout (1998) has been applied in the United States in the past few years. The study by Freedman (2003) with 12-year-old children has shown the potential of this training, and the results indicate that the children's EI increased significantly after one year of an ESI-enriching curriculum. Second, we used a quasi-experimental design with assignment to an intervention or control group in order to examine intervention effects. Third, we compared the effects of one intervention year and the effects of two intervention years. Fourth, to the best of our knowledge, the present study is the first to use this theoretical model and a rigorous evaluation design in Spanish elementary school students. In the Spanish context, the INTEMO program was based on the ability model and addressed to secondary students (Castillo, Salguero, Fernández-Berrocal, & Balluerka, 2013; Ruiz-Aranda, Salguero, Cabello, Palomera, & Berrocal, 2012).

The main goal of our study is to investigate the effectiveness of a two-year EDI intervention. More specifically, using a controlled design, we test the impact of the program on the different EI dimensions. The available research suggests that it is possible to improve EI (Bar-On, Maree, & Elias, 2007; Freedman, 2003). Thus, we hypothesize the following: (1) the intervention will increase participants' EI dimensions, measured at the end of the first intervention year; (2) the effects of the training will be present after six months; (3) a second intervention year will further improve the emotional intelligence dimensions; (4) without the intervention, the EI dimensions will not increase over time.

## 2. Methods

### 2.1. Participants

A total of 311 individuals initiated this two-year longitudinal study, and 83 individuals dropped out of the study during the first year. Thus, the final sample consisted of 228 children, 124 males (54.4%) and 104 females (45.6%). Their ages ranged from 10 to 11 years ( $M = 10.32$ ;  $SD = 0.47$ ). All the participants were in the fifth grade at five public elementary schools in the province of Valencia (Spain). With regard to nationality, 85.5% ( $n = 195$ ) were Spanish, and 14.5% ( $n = 33$ ) were immigrants from Asia (30.3%,  $n = 10$ ), South America (12.1%,  $n = 4$ ), Eastern Europe (24.3%,  $n = 8$ ), Arab countries (33.3%,  $n = 11$ ). In addition, 18.4% ( $n = 42$ ) were Spanish Roma,<sup>1</sup> and 26.8% of the participants ( $n = 61$ ) had learning disabilities.

A total of 182 children (79.8%) from all the public schools in a municipality (a total of 4 schools) participated in the EDI program (group intervention). These children were all of the pupils in fifth grade in the public school system in this municipality. The students in the four public schools do not differ in age or sex. However, one of the schools presents a higher percentage of immigrant students and students with learning difficulties because of its more peripheral situation (see Appendix A for socio-demographic data for each school). Contact was made with all the schools from a neighboring municipality with similar socio-demographic characteristics. Three of them decided to participate, but two decided to drop out of the study after the first assessment. Thus, a total of 46 children (20.2%) were evaluated and participated in the longitudinal study as a control group. To avoid selection bias and confirm that the intervention and control groups were not different at baseline, homogeneity analysis was performed. Tests for homogeneity revealed no significant differences between groups at time 1 (baseline): age ( $t(226) = -0.03$ ,  $p = 0.98$ ), gender ( $\chi^2(1, N = 228) = 0.00$ ,  $p = 0.99$ ), nationality ( $\chi^2(1, N = 228) = 0.026$ ,  $p = 0.87$ ), Spanish Roma ethnicity ( $\chi^2(1, N = 228) = 0.394$ ,  $p = 0.53$ ), and learning difficulties ( $\chi^2(1, N = 228) = 0.013$ ,  $p = 0.909$ ) (see Table 1).

Participants were assessed at four points in time: before the intervention (baseline), at the end of the first intervention year (approximately six months later), at the beginning of the second intervention year (approximately six months later), and after the second intervention year (approximately six months later).

### 2.2. Measure

Emotional Intelligence was assessed using the Spanish version of the Emotional Quotient Inventory (EQ-i:YV, Bar-On & Parker, 2000), adapted to Spanish by Ferrándiz, Hernández, Bermejo, Ferrando, and Sáinz (2012). The EQ-i:YV is a 60-item self-report measure of emotional

<sup>1</sup> The social situation of the Spanish Roma population is heterogeneous, and it is an error to associate this ethnic group with social exclusion. The schooling of Roma children is practically normalized, but the frequency of school absenteeism and premature abandonment are a cause for concern. These phenomena are compounded in secondary education, especially for girls. In addition, the presence of Roma in post-compulsory studies is infrequent. Therefore, the adult Roma population has lower education levels than the population as a whole (Laparra, 2011). In our sample, 59.5% of Roma children have learning difficulties ( $n = 25$ ).

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