

Positive Attitude Program's Impact upon Self-Concept across Childhood and Adolescence

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Abstract

This study aims to analyze the differential impact of social and emotional learning programs between Portuguese elementary and middle school students, and to clarify developmental and gender differences in children and adolescents self-concept. The sample included 2682 students, 1,237 elementary students (4th grade; $M_{age} = 9.24$; $SD = 0.72$) and 1445 middle school students (7th to 9th grade; $M_{age} = 13.30$; $SD = 1.32$). Self-report questionnaires were administered before and after intervention. Multilevel linear modeling with a repeated measures design was used to evaluate the effects of the program on self-concept. Results show significant intervention gains in *social* and *emotional self-concept*, which differ by grade level (elementary students benefited more). There were also differences between genders, boys showed more benefits in *social self-concept* and girls in *emotional self-concept* as well as a smaller decrease in *academic self-concept*. Participation in the programs led to more pronounced gains for elementary school students.

Keywords: self-concept, gender differences, developmental trajectories.

Resumo

Este estudo teve como objetivo analisar o impacto diferencial de dois programas de aprendizagem socioemocional de alunos portugueses do 1.º e 3.º ciclo, bem como clarificar as diferenças de género e desenvolvimento no seu autoconceito. A amostra 2682 alunos, 1237 do 4.º ano; $M_{idade} = 9.24$; $DP = 0.72$) e 1.445 de 7.º ao 9.º ano ($M_{idade} = 13.30$; $DP = 1.32$). Foram aplicados questionários de autorrelato antes e depois da intervenção. Para avaliar os efeitos dos programas foram utilizados modelos lineares multinível. Os resultados mostram aumentos significativos no *autoconceito social* e *emocional* nos grupos de intervenção, com os alunos de 4.º ano a beneficiarem mais. Também foram encontradas diferenças entre géneros, os rapazes apresentam maiores ganhos no *autoconceito social*, e as raparigas no *autoconceito emocional*, assim como uma diminuição menor no *autoconceito académico*. A participação nos programas conduziu a aumentos mais pronunciados nos alunos de 4.º ano.

Palavras-chave: autoconceito, diferenças de género, diferenças desenvolvimentistas.

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Introduction

Schools have an important role to play in raising healthy children by fostering not only their cognitive development, but also their social and emotional development (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Accordingly, there is an increased focus on how healthy and normal individuals can get the most from school and life, making mental health promotion a social and economic priority. Consistent with this emphasis, having higher self-concept is valued as a desirable outcome (Craven & Marsh, 2008), as research on self-concept has placed it as protective factor against psychological problems (Garaigordobil, Pérez, & Mozaz, 2008; O'Mara, Marsh, Craven, & Debus, 2006). According to the Organization for Economic Co-operation and Development, self-concept "has important benefits for motivation and for the way in which students approach learning tasks" (OECD, 2003, p. 11).

In the field of mental health promotion in schools, Social and Emotional Learning (SEL) programs have proven to produce positive effects on attitudes about self and others, and to contribute to pro-social behavior, improved academic performance on achievement tests, as well as reductions in conduct and internalizing problems (Durlak et al., 2011; Sklad, Diekstra, deRitter, Ben, & Gravesteyn

2012). Knapp, McDaid and Parsonage (2011) also concluded that these interventions are among those with best cost-benefit ratio in mental health promotion. Haney and Durlak (1998), in a meta-analysis, had concluded that primary prevention programs which are not focused upon self-concept may have an impact on it ($ES = .09$), and presently many SEL program have self-concept enhancement as one of their aims. The meta-analysis conducted by Durlak et al. (2011) and Sklad et al. (2012) seemed to be in line with the reports by Haney and Durlak (1998) but with higher effect sizes (0.23 and 0.46, respectively) However, it must be taken into consideration that Durlak analyzed self-concept results within a category of student outcomes they titled attitudes that grouped, self-concept, self-efficacy, school bonding, and conventional beliefs about violence as a single outcome variable, whereas Sklad grouped self-concept with self-efficacy.

Self-concept

Self-concept was defined by Shavelson, Hubner and Stanton (1976) as "a set of perceptions that a person holds about him or herself based on personal assessment and feedback from significant others, reinforcements and attributions about one's behavior." Several authors (Craven & Marsh, 2008; Delgado, Inglés, & Garcia-Fernández, 2013; Shavelson et al., 1976) con-

sider self-concept a central element in shaping personality, as well as an indicator of personal satisfaction and psychological well-being.

There was some debate concerning the structure of self-concept (Craven & Marsh, 2008; O'Mara et al., 2006), with early empirical research not providing a theoretical definition or adopting a unidimensional perspective, undifferentiated across social, academic, physical, and other domains, which hindered the comprehension of the construct. Presently, most researchers use a multidimensional perspective of self-concept, based on the multidimensional hierarchical model of self-concept, proposed by Shavelson et al. (1976), that places perceptions of personal behavior in specific situations at the base of the hierarchy, inferences about self in broader domains (social, emotional and academic) in the middle of the hierarchy, and a global, general self-concept or self-esteem at the apex.

Self-concept is widely acknowledged as an important construct, particularly in Educational Psychology (Craven & Marsh, 2008), where it is considered a central indicator of school adjustment (Wang & Fredricks, 2014), due to its high association to psychosocial adjustment in adolescence (Fuentes, García, Gracia, & Alarcón, 2015; Rodríguez-Fernández, Droguett, & Revuelta, 2012). Numerous empirical studies have also established the influence of self-concept over

several academic, social and behavioral outcomes, such as school engagement (García, Gracia, & Zeleznova, 2013; Veiga, García, Reeve, Wentzel, & García, 2015), goal orientation (Inglés, Martínez-Monteagudo, García-Fernández, Valle, & Castejón, 2015), prosocial behaviour (Inglés, Martínez-González, García-Fernández, Torregrosa, & Ruiz-Esteban et al., 2012), social competence (Coelho, Marchante, & Sousa, 2015; Fuentes et al., 2015), and healthy lifestyles (Pastor, Balaguer, & García-Merita, 2006), as well as an important indicator of the quality of parent-child relationships (Rodrigues, Veiga, Fuentes, & García, 2013; Rodríguez-Fernández et al., 2012). Self-concept is also important because it influences the low expression of psychopathological symptoms, impulsivity and aggression towards peers (Garaigordobil et al., 2008).

Additionally, several dimensions of self-concept have been linked through numerous empirical studies to behavioral and psychological outcomes in the school context. *Academic self-concept* has a close connection to achievement (Coelho, Sousa, & Figueira, 2014; Fuente et al., 2015; Veiga et al., 2015), school adjustment (Rodríguez-Fernández et al., 2012), school engagement (Veiga et al., 2015), psychosocial adjustment and responsibility (García & Musitu, 2001). *Social self-concept* contributed to better school adjust-

ment, among students who were rejected by their peers (Troop-Gordon & Ladd, 2005). Poor *social self-concepts* were also considered a vulnerability factor leading to the development of internalizing problems (Jacobs, Reinecke, Gollan, & Kane, 2008). Spilt, vanLier, Leflot, Onghena, and Colpin (2014) further clarified that peer rejection impeded children's *social self-concept*, which in turn affected internalizing problems development.

Consequently, self-concept enhancement is associated with many educational and social benefits, such as improved school engagement (Veiga et al., 2015), improved academic achievement and persistence (Craven & Marsh, 2008) and increased social and emotional competencies (Coelho, Marchante, & Sousa 2015). Therefore, enhancing self-concept is widely suggested as a goal of education (O'Mara et al., 2006).

Age differences

When addressing the structure of self-concept, questions concerning its stability and change over time should be taken into account. There seems to be strong support for the increasing distinctiveness of self-concept over age (Harter, 2006; Marsh & Ayotte, 2003; O'Mara et al., 2006). These authors proposed that older children were better able to distinguish between their relative strengths and weaknesses due to cognitive develop-

ment in conjunction with increasing social interactions (e.g., ability to make social comparisons, differentiation between real and idealistic self, perspective taking) that follows age, and that is reflected in their self-concept responses. More realistic self-evaluations would increase with age, but would also cause declines in the levels of self-concept (Marsh & Ayotte, 2003), this pattern was reported by several authors (Cole et al., 2001; Marsh, 1989; Wilgenbusch & Merrell, 1999). Marsh (1989) concluded that several domains of self-concept suffered reductions after the seventh grade, with *academic*, *physical* and *social self-concept* reaching their lowest levels in the eighth or ninth grade. Cole et al. (2001) concluded that self-concept tends to improve and stabilize over periods of time not interrupted by dramatic developmental, such as social, and educational transitions. These authors identified that, after an increase during grades 3 to 6 in some domains (academic, social, and physical), the transition from sixth to seventh grade (a time associated with pubertal, cognitive, and educational transitions) was associated with destabilization in most domains and sharp reductions in self-concept.

It is also important to understand the role of interventions in self-concept outcomes. Haney and Durlak (1998), in their meta-analysis, concluded that too few studies reported outcomes separately

for sex and age groups, which did not permit to clarify if programs affected younger versus older children differently. O'Mara et al. (2006), in their review, report that the existing data allows for the conclusion that there were no differences in effect sizes of the interventions due to age differences.

The literature concerning social and emotional competences also suggested that there are no reasons to believe that programs carried out in middle schools have a different effectiveness, or that elementary students are more responsive (Sklad et al., 2012). However, in most meta-analyses (Durlak et al., 2011; Haney & Durlak, 1998), studies originating from middle or secondary schools are a minority (31 and 32.5%, respectively), the exception being Sklad et al. (2012) where 63% of the studies included were conducted in secondary schools. Therefore, the issue of developmental differences in programs impact in one frequently raised in the literature, with the Collaborative for Academic, Social and Emotional Learning (2013) advocating that this potential moderating variable should be analyzed when assessing programs effectiveness.

Gender differences

Most studies conclude that there are gender differences in several dimensions of self-concept (Coelho, Sousa, & Figueira, 2014; Cole et al., 2001; Fuentes et

al., 2015; Wilgenbusch & Merrell, 1999). Wilgenbusch and Merrell (1999) reported that boys presented higher *academic* and *family self-concept* in the elementary grades, but that among middle school students, these differences were minimal. Cole et al. (2001) reported that boys had higher levels than girls in *academic self-concept* at grade 7, *physical self-concept* (physical appearance and sports competence) in grades 3, 7 and 9, concluding that gender differences appeared to be smaller in studies involving younger children and evolved consistently with gender-role stereotypes.

Coelho, Sousa and Figueira (2014), in a study reporting the impact of a middle school SEL program, found a differential effect of gender in the intervention groups, with only boys showing increased levels of *emotional self-concept* ($d = 0.25$), even though they also reported higher initial levels in this dimension, while both genders increased their levels of *social self-concept* ($d = 0.54$ for boys and $d = 0.51$ for girls). Fuentes et al. (2015) reported that secondary school boys obtained higher scores in *emotional* and *physical self-concept*, while girls scored higher in *academic self-concept*.

Additional support for the need to contemplate gender differences in self-concept was provided by Fuentes, García, Gracia and Lila (2011), who reported that a positive relationship found between so-

cial self-concept and drug use disappeared after controlling for the sex (and age) of adolescents.

Present study

There is a call for the analysis of differential effects of programs by school grade and gender (CASEL, 2013; Durlak et al., 2011; Sklad et al., 2012) and a lack of effectiveness studies of SEL programs among middle school students (Durlak et al., 2011). The main purpose of this study was to compare the impact of two SEL programs on *academic, social, emotional, family and physical self-concept* between elementary and middle school students.

Given these goals the following hypotheses were formulated; (1) students of the intervention groups will present bigger improvements in their *academic, social and emotional self-concept* when compared with students of the control groups; (2) this improvement is constant over the several years of program implementation; (3) elementary and middle school students will benefit equally from the interventions; (4) the benefits of the intervention are different by gender.

Method

Participants

Student characteristics are presented in Table 1.

The sample included 2682 students (53.2% boys), 1237 were 4th grade students ($M_{age} = 9.24$; $SD = 0.72$) and 1445 were middle school (7th to 9th grade) students ($M_{age} = 13.30$; $SD = 1.32$), from 180⁺ classes (138 classes in the intervention groups and 42 classes in the control groups). All students frequented Portuguese public schools (37 elementary schools and six middle schools), from six school groupings (in the district of Lisbon), where the percentage of children who benefited from free or reduced lunches varied from 35% to 49%. In Portugal, elementary school encompasses 1st to 4th grade, while middle school covers 5th to 9th grade. Intervention and control groups were homogeneous in terms of grade level, but not in terms of gender, since boys are more numerous (as reported in Table 1 along with further information about participants).

Over the study period, 48 students dropped out of the programs because they moved to schools outside the municipality. These students did not present significant differences in the initial levels of self-concept.

Instruments

The dimensions of self-concept were analyzed through self-report, before and after program implementation, with a four month period between measurement moments.

Table 1
Student Characteristics across Groups and Waves

Characteristic	Total (%)	Control group <i>n</i> = 614 (23%)	Intervention group <i>n</i> = 2068 (77%)
Gender			
Male	1428 (53.2%)	351 (57.2%)	1077 (52.1%)
Female	1254 (46.8%)	263 (42.8%)	991 (47.9%)
		$\chi^2 (1) = 4.92; p < .05$	
Grade Level			
4 th grade	1237 (46.1%)	267 (43.5%)	970 (46.9%)
7 th -9 th grade	1445 (53.9%)	347 (56.5%)	1098 (53.1%)
		$\chi^2 (1) = 2.23; p > .05$	
Ethnicity			
Portuguese	2644 (98.6%)	606 (98.6%)	2038 (98.5%)
Brazilian	24 (0.9%)	4 (0.7%)	20 (1%)
Eastern European descent	14 (0.5%)	4 (0.7%)	10 (0.5%)
Middle School Location			
Rural	1237 (46.1%)	209 (34.0%)	1028 (49.7%)
Urban	1445 (53.9%)	405 (66.0%)	1040 (50.3%)
Year of implementation			
Year 1	203 (7.6%)	36 (6.0%)	167 (8.1%)
Year 2	586 (21.8%)	122 (19.8%)	464 (22.4%)
Year 3	684 (25.5%)	147 (23.9%)	537 (26.0%)
Year 4	598 (22.3%)	140 (22.8%)	458 (22.1%)
Year 5	611 (22.8%)	169 (27.5%)	442 (21.4%)

Note. *N* = 2682.

Self-concept. Self-Concept was assessed using the *Five-Factor Self-Concept Questionnaire* (AF-5; García & Musitu, 2001; Portuguese adaptation for children and adolescents; Coelho, Sousa, Marchante, & Romão, 2015), an instrument designed to measure five self-concept dimensions: *social* (e.g., “I make friends easily”), *academic*

(e.g., “I do my homework well”), *emotional* (reverse scored; e.g., “I am afraid of some things”), *family* (e.g., “I feel that my parents love me”), and *physical* (e.g., “I take good care of my physical health”).

The AF-5 is one of the most widely used questionnaires for multidimensional measurement of self-concept in Spanish-speaking coun-

tries (García, Musitu, Riquelme, & Riquelme, 2011). In the Portuguese adaptation for children and adolescents (Coelho, Sousa, Marchante, & Romão, 2015), the 30 items are answered on a 5-point scale, ranging from 1 (Never), to 5 (Always). The questionnaire presents appropriate internal consistency for four dimensions of self-concept: *academic* ($\alpha = .83$); *emotional* ($\alpha = .77$); *family* ($\alpha = .80$); and *physical* ($\alpha = .79$), but a modest internal consistency for one dimension *social* ($\alpha = .70$); However, the factor structure and the construct validity of this instrument have been confirmed in several studies using exploratory and confirmatory factor analysis in samples of different countries including Portugal (Coelho, Sousa, Marchante, & Romão, 2015; García, Musitu, & Veiga, 2006), Spain (Martínez, Musitu, García, & Camino, 2003; Delgado et al., 2013) and Chile (García et al., 2011).

Program

Project Positive Attitude was conceived as part of the municipal health promotion (Torres Vedras municipality), in partnership with the six public school groupings. After one year of implementation, Project Positive Attitude was asked to extend its programs to support elementary school students (4th grade; the last year in Portuguese elementary schools).

Presently, the SEL programs for both 4th grade and middle school

are universal programs composed by 13 weekly 60 minutes sessions, delivered by a trained psychologist (in the presence of the class teacher), following the program's manual which contains a detailed plan for each session (theoretical basis, methodologies and activities are described in detail in Coelho & Figueira, 2011). Both programs are based in the framework for social and emotional learning proposed by the Collaborative for Academic, Social and Emotional Learning (CASEL, 2013), use explicit SEL skills instruction employing active forms of learning that require students to practice new skills with a sequenced learning approach and focusing specific time and attention on each skill development. In elementary schools the program was applied during the regular school schedule. The middle school program was also applied during the regular school schedule as part of the curriculum of a school subject named Civic Formation.

Procedure

Control groups were established by matching classes with same characteristics (rural or urban, class size, gender distribution, and grades), within the same school grouping. Both programs are classroom-based, including all students and developed within the school curriculum. No SEL contents were developed in the control groups and all six public school groupings

were not committed to any other SEL programs. In the beginning of each school year the psychologists were present in parent meetings to explain the program and to answer any questions.

Demographic data was registered at pre-test. Test and re-test for both groups were carried out under the same conditions, with control group students filling the questionnaires in the same week as intervention groups. Questionnaire instructions were read out loud to all students by the school psychologist applying the program. If a student was not present in the class during evaluation, the questionnaires were administered in another class within a week. Only one of the school groupings utilized active informed consent, because the program was already part of the school curriculum, following national legislation.

Data analysis

T tests were performed to analyze if there were initial differences in the various dimensions of self-concept between the control and intervention groups, between genders and between grades. Multivariate Multilevel linear modeling (MLM) with a repeated measures design was used (SPSS, mixed models) to evaluate the effects of the program on self-concept. There are several advantages to MLM, compared with other analyses, such as the lack of requirement for com-

plete data across time points and the use of between-subject variance in growth curves that can be explained by subject-level predictors (Heck, Thomas, & Tabata, 2013). In a repeated measures study design, individual scores are nested within individuals, and these in turn are nested within classes. Nested data is more likely to correlate within the group, student evaluations from the same class are more likely to be highly correlated.

The Intraclass correlation (ICC) was .104, so there was sufficient unexplained variance between classes to justify the inclusion of this level in the models. Therefore, a three-level model was run to account for the 2,682 individuals being nested within two measurements, and that students were nested in 180 classes. The assumptions for linearity, multivariate normality and multicollinearity were met, multivariate outliers ($n = 5$) were removed from the analysis. There was no missing data at class level and Little's MCAR test was used to analyze the patterns of missing data at individual level. The results indicated that the missing values were MCAR (missing completely at random), $\chi^2(5) = 6.435; p > .05$.

An autoregressive structure (AR1) was selected as covariance structure since yielded better fit for the models. Model estimation was conducted using the Maximum Likelihood method, due to its robustness of estimation when using

large samples (Heck et al., 2013). The intercept and growth-rate indicator variables were used as random effects in the models, and the best model fit was achieved with scaled identity as covariance type.

Growth-rate indicator variables were constructed to manage the parallel growth trajectories in outcome measures. There are different ways to code the growth-rate variable, after several analysis the best fit was achieved by coding the first measurement occasion (baseline) as 0 and the second measurement occasion (final) as 1. The growth that occurs is captured when using this approach. This was the procedure used to create the null model (Model 0), described by the equation below.

$$y_{itk}^* = \sum_k (\beta_{0k} \delta_k + \beta_{1k} \delta_k x_{itk} + \delta_k u_{0ik} + u_{1ik} \delta_k x_{itk} + \delta_k e_{itk})$$

A condition model (Model 1) was created by including interactions between time and condition. The final model (Model 2) included interactions between condition, grade level, and potential moderators (such as gender and year of implementation), since another advantage of MLM is that models can be adjusted simultaneously to evaluate potential moderating effects of several factors. The alpha level was set to .05 and effect sizes (Cohen's d) were calculated for assessing the effectiveness of the programs. IBM SPSS Statistics for Windows, Version 20 (IBM Corp, Armonk,

NY) was used. Cohen (1988) suggests that d values of 0.2, 0.5, and 0.8 should be interpreted as small, medium and large effects, respectively.

Results

Preliminary analysis

Descriptive data for the control and intervention groups is presented in Table 2.

There were no significant differences between control and intervention groups in any self-concept dimension; *social self-concept*, $t(1108) = 1.89$, $p > .05$; *academic self-concept*, $t(2680) = 0.20$, $p > .05$; *emotional self-concept*, $t(2680) = 1.64$, $p > .05$; *family self-concept*, $t(2680) = 1.56$, $p > .05$; and *physical self-concept*, $t(2680) = -0.67$, $p > .05$.

Elementary school students reported higher initial levels of *academic self-concept*, $t(2447) = 14.38$, $p < .001$; *family self-concept*, $t(2680) = 5.30$, $p < .001$ and *physical self-concept*, $t(2565) = 14.78$, $p < .001$; while middle school students had higher initial levels of *social self-concept*, $t(2529) = -2.11$, $p < .001$. No significant differences were found in *emotional self-concept*, $t(2439) = 0.30$, $p > .05$.

Concerning gender, boys reported higher initial levels of *social self-concept*, $t(2680) = 3.17$,

Table 2

Self-Concept Dimensions Descriptive Statistics and Effect Sizes for Interaction Group by Time

	Control Group (n = 614)		Intervention Group (n = 2068)		Effect Size
	Pre-test M (SD)	Post-test M (SD)	Pre-test M (SD)	Post-test M (SD)	d
Social self-concept	23.85 (3.06)	23.51 (3.21)	23.42 (3.42)	23.91 (3.29)	0.25
Academic self-concept	21.39 (3.96)	21.12 (4.01)	21.35 (4.21)	21.34 (4.26)	0.07
Emotional self-concept	21.19 (4.23)	20.86 (4.09)	20.78 (4.34)	21.41 (4.14)	0.23
Family self-concept	26.38 (3.19)	26.11 (3.65)	26.14 (3.50)	26.30 (3.50)	0.12
Physical self-concept	20.99 (4.02)	20.90 (4.20)	21.13 (4.54)	21.26 (4.58)	0.05

$p < .01$; *emotional self-concept*, $t(2680) = 11.43$, $p < .001$ and *physical self-concept*, $t(2680) = 8.17$, $p < .001$; while girls had higher initial levels of *academic self-concept*, $t(2680) = -6.22$, $p < .001$. No significant differences were found in *family self-concept*, $t(2680) = 0.14$, $p > .05$.

Program effects on self-concept

Program effects on self-concept are reported in Table 3.

The effects of condition and the interaction between condition and time were tested in the condition model (Model 1, presented in Table 3), the fit of the model improved significantly when condition was added as factor $\Delta\chi^2(10) = 62.72$, $p < .001$. The full model (Model 2) accounts for 6% of explained variance within classes and 43% of explained variance between classes. There were

significant interaction effects between condition and time for *social self-concept* and for *emotional self-concept*, but not for *academic self-concept*, *family self-concept* or *physical self-concept*. As such, program effects upon the various dimensions of self-concept were different, and the effect sizes for both *social* and *emotional self-concept* can be considered small (according to Cohen, 1998), as it can be seen in Table 2.

These effects did not differ according to year of implementation ($\beta = -0.07$, $SE = 0.04$; $p > .05$), as it can be seen in Table 3 (Model 2).

Program effects on self-concept, by grade level. Descriptive data by grade level is presented in Table 4. As presented in Table 3 (Model 2), there were differential results of the program among students from different grade levels ($\beta = -0.52$, $SE = 0.05$; $p < .001$), with bigger effect sizes stemming

Table 3
Parallel Growth Curve Models for Self-Concept

Parameter	Model 0	Model 1	Model 2
	<i>b</i> (SE)	<i>b</i> (SE)	<i>b</i> (SE)
Deviance (−2*log likelihood)	147607.454	147544.732	146822.458
Deviance (AIC)	147623.454	147590.732	146892.458
Social self-concept	23.49 (0.12)***	23.39 (0.13)***	23.50 (0.22)***
Academic self-concept	21.53 (0.12)***	21.55 (0.13)***	24.30 (0.22)***
Emotional self-concept	20.89 (0.12)***	20.77 (0.13)***	21.30 (0.22)***
Family self-concept	26.22 (0.12)***	26.17 (0.13)***	27.35 (0.22)***
Physical self-concept	21.34 (0.12)***	21.42 (0.13)***	24.20 (0.22)***
Social self-concept*Time	0.31 (0.10)**	0.51 (0.12)***	0.31 (0.14)*
Academic self-concept*Time	−0.07 (0.10)	−0.01 (0.12)	−0.73 (0.14)***
Emotional self-concept*Time	0.40 (0.10)***	0.62 (0.12)***	1.29 (0.14)***
Family self-concept*Time	0.07 (0.10)	0.17 (0.12)	−0.08 (0.14)
Physical self-concept*Time	0.08 (0.10)	0.12 (0.12)	−0.52 (0.14)***
Social self-concept*Condition(I) *Time		−0.86 (0.24)***	−0.84 (0.24)**
Academic self-concept*Condition(I)*Time		−0.25 (0.24)	−0.17 (0.24)
Emotional self-concept*Condition(I)*Time		−0.96 (0.24)***	−1.03 (0.24)***
Family self-concept*Condition(I)*Time		−0.44 (0.24)	−0.41 (0.24)
Physical self-concept*Condition(I)*Time		−0.22 (0.24)	−0.27 (0.24)
Gender			−0.50 (0.08)***
Grade			−1.21 (0.09)***
Year of implementation			−0.07 (0.04)

Note. AIC = Akaike's Information Criterion; (I) Intervention Group = 1; (G) Girls = 1.

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

from the participation in the SEL programs among elementary school students, both for *social self-concept* ($d = 0.38$ for elementary students, $d = 0.17$ for middle school students) and *emotional self-concept* ($d = 0.30$ for elementary students, $d = 0.17$ for middle school students).

Program effects on self-concept, by gender. There were also program differential results by gender ($\beta = -0.50$, $SE = 0.08$;

$p < .001$), with girls reporting more gains in *emotional self-concept* ($d = 0.29$ for girls, $d = 0.20$ for boys), while boys benefited more from the program in *social self-concept* ($d = 0.32$ for boys, $d = 0.20$ for girls). Additionally there was a one dimension of self-concept (*academic*) that had a significant four-way interaction with the inclusion of gender ($\beta = -0.82$, $SE = 0.37$; $p < .05$), with intervention group girls not showing the decrease in

Table 4
Self-Concept-Descriptive Statistics for Control and Intervention Group, Pre and Post-Test, by Grade Level

	Control Group (n = 614)				Intervention Group (n = 2068)			
	4 th grade (n = 267)		7 th -9 th grade (n = 347)		4 th grade (n = 970)		7 th -9 th grade (n = 1098)	
	Pre-test M (SD)	Post-test M (SD)	Pre-test M (SD)	Post-test M (SD)	Pre-test M (SD)	Post-test M (SD)	Pre-test M (SD)	Post-test M (SD)
Social SC	23.82 (3.06)	23.08 (3.22)	23.90 (3.06)	23.84 (3.17)	23.24 (3.60)	23.78 (3.46)	23.56 (3.24)	24.03 (3.13)
Academic SC	22.59 (3.90)	22.40 (4.12)	20.47 (3.75)	20.14 (3.62)	22.57 (4.43)	22.72 (4.46)	20.28 (3.68)	20.13 (3.66)
Emotional SC	21.27 (4.43)	20.69 (4.42)	21.13 (4.08)	20.98 (3.81)	20.81 (4.75)	21.57 (4.60)	20.77 (3.95)	21.27 (3.69)
Family SC	26.79 (2.76)	26.63 (2.97)	26.07 (3.46)	25.72 (4.05)	26.51 (3.23)	26.74 (3.28)	25.81 (3.69)	25.92 (3.65)
Physical SC	22.21 (4.18)	22.00 (4.19)	20.06 (3.63)	20.04 (4.02)	22.48 (4.44)	22.64 (4.46)	19.94 (4.29)	20.04 (4.34)

Note. SC = Self-concept.

Table 5
Self-Concept-Descriptive Statistics for Control and Intervention Group, Pre and Post-Test, by Gender

	Control Group (n = 614)				Intervention Group (n = 2068)			
	Boys (n = 351)		Girls (n = 263)		Boys (n = 1077)		Girls (n = 991)	
	Pre-test M (SD)	Post-test M (SD)	Pre-test M (SD)	Post-test M (SD)	Pre-test M (SD)	Post-test M (SD)	Pre-test M (SD)	Post-test M (SD)
Social SC	24.07 (3.01)	23.54 (3.35)	23.60 (3.11)	23.47 (3.03)	23.53 (3.47)	24.05 (3.37)	23.27 (3.36)	23.77 (3.20)
Academic SC	21.04 (3.94)	20.93 (3.96)	21.86 (3.93)	21.38 (4.06)	20.85 (4.32)	20.82 (4.29)	21.90 (4.01)	21.91 (4.14)
Emotional SC	22.04 (4.05)	21.84 (3.80)	20.06 (4.22)	19.54 (4.09)	21.66 (4.34)	22.25 (3.96)	19.84 (4.14)	20.50 (4.15)
Family SC	26.47 (3.19)	26.28 (3.44)	26.27 (3.20)	25.89 (3.90)	26.12 (3.30)	26.23 (3.41)	26.16 (3.71)	26.38 (3.59)
Physical SC	21.67 (3.74)	21.56 (4.03)	20.09 (4.20)	20.0 (4.28)	21.77 (4.45)	21.90 (4.60)	20.44 (4.54)	20.56 (4.46)

Note. SC = Self-concept.

post-test that control groups girls showed. Descriptive data by gender is presented in Table 5.

Discussion

This study aimed to increase the understanding of how Social and Emotional Learning programs may impact upon the several dimensions of self-concept at different ages. Both programs had a positive effect upon the *social* and *emotional self-concept*, but not upon *academic self-concept*, partially confirming hypothesis one. The results in *emotional self-concept* are in line with Coelho, Sousa and Figueira (2014), a study that reported an intervention only with middle school students, but the present results are lower effect sizes for *social self-concept* than those reported in that study. It should be noted that intervention group students presented lower levels of *social self-concept* at baseline, which can partially explain their more positive progression since, in self-concept enhancement, as O'Mara et al. (2006) suggest, those who have lower levels of self-concept present a higher potential for improvement. The small effect sizes (according to Cohen, 1988) reported in the present study are in line with several meta-analysis (Durlak et al., 2011; Haney & Durlak, 1998), but lower than the moderate effect sizes reported by Sklad et al. (2012) in a meta-

analysis mostly focused on middle school students. Additionally, the program did not impact *family self-concept*, or *physical self-concept*, which is consistent with previous research about the impact of the Positive Attitude SEL Program (Coelho, Sousa, & Figueira, 2014).

The year of implementation did not prove to be a significant co-variate, which means that the program's impact did not fluctuate between several years of implementation, with no significant three-way-interactions between condition, time and year of implementation. This stability supports the effectiveness of both programs.

The third hypothesis was not supported. Although no significant four-ways interactions were found between self-concept dimensions, time, group and grade, there were higher effect sizes stemming from the intervention among elementary school students in both *social* and *emotional self-concept*, contradicting previous findings in the literature (O'Mara et al., 2006; Sklad et al., 2012). In *social self-concept*, middle school students presented higher initial levels, which may contribute to explain the bigger gains for elementary school students in this dimension. The advantage of middle school students in *social self-concept* found in the present study is in contradiction with previous literature (Marsh & Ayotte, 2003) who concluded that, as children get older they become more efficient in their self-

evaluations resulting in self-concept drops. Part of the explanation may be found in the Portuguese school systems. In Portugal, elementary schools are usually smaller units, with few classes per grade, whereas middle schools are bigger units with several classes per grade and a larger number of peers and increased opportunities for developing rewarding and meaningful peer relations. However, the initial levels of *academic*, *family* and *physical self-concept* found among middle school students were more in line with most authors (Cole et al., 2001; Marsh, 1989; Marsh & Ayotte, 2003), who reported that the lowest levels of *academic* and *physical self-concept* can be found among eighth or ninth graders.

The results of the present study support hypothesis four, results from the SEL programs were indeed different by gender; boys presented bigger gains in *social self-concept*, however girls presented bigger gains in *emotional self-concept*. Bigger gains for girls can be explained due to the fact that they had lower level at baseline, confirming the conclusions by O'Mara et al. (2006) that students who have lower levels of self-concept tend to benefit more from interventions that promote self-concept enhancement. The results also contrast with those reported in Coelho, Sousa and Figueira (2014), where only boys presented increased levels of *emotional self-concept*, while participation in the program led to increases

in the levels of *social self-concept* for both genders. In *academic self-concept*, girls presented initial higher values but there was no difference between genders in the intervention groups. These initial higher values of academic self-concept for girls even though they are consistent with the results report by Fuentes et al. (2015), contrast with several authors (Cole et al., 2001; Wilgenbusch & Merrell, 1999) who found an advantage for boys in elementary school and no gender differences in secondary school (Wilgenbusch & Merrell, 1999), or no difference between genders in elementary school and an advantage for boys in later grades (Cole et al., 2001). These results may indicate that there might be an effect from the school system in Portugal and Spain that benefits girls' *academic self-concept*. In the Portuguese school system, girls tend to have better performance, with fewer retentions and better adjustment in transition to middle school (Coelho, Sousa, & Marchante, manuscript submitted for publication), which will likely reflect on their *academic self-concept*.

The present study allowed for a comparison of SEL program results between school grades contributing for the knowledge of how to properly intervene in different ages. Since both programs were applied by the same educational psychologists, within the same school grouping and in the same settings, it can be assumed that the results

derive from developmental processes and not from individual differences between applicators or characteristics of the participants. Therefore there is a need for educational psychologists to take into account gender and developmental differences when they conceive interventions designed to enhance students' self-concept.

Limitations

Some of the major limitations of the study are related to program implementation, as it takes place in a professional context and is not intended only for research purposes, teachers and school boards pressured to have more intervention than control groups, in part because the intervention groups were perceived to have significant improve-

ments in social and emotional competencies and, as such, the number of control groups is smaller than intended.

Future directions

Future research should analyze how other characteristics (such as school grouping socioeconomic level or student's initial levels of competence) may lead to differential impacts of these programs among students of different grades.

Additionally, longitudinal research is essential to properly comprehend self-concept enhancement through childhood to adolescence, so Positive Attitude program is gathering data to implement a longitudinal study following those students who were in the elementary school in the beginning of the program.

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