The impact of Secondary School Transition on Self-Concept and Self-Esteem

O impacto da transição escolar para o 2º ciclo sobre o autoconceito e a autoestima

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Abstract

Secondary school transition takes place earlier in Portugal than in most Western countries. This study aims to analyze the impact of this transition on the self-concept and self-esteem of Portuguese students, and to identify potential differential gender impacts. The sample included 377 students (M_{age} = 9.46; SD = 0.93; 52.8% boys). Self-report questionnaires were administered in 4th grade (middle and end) and 5th grade (beginning and end). Multilevel linear modeling with a repeated measures design was used to evaluate the evolution of self-perceptions during secondary school transition. Results show significant decreases in all dimensions of self-concept and in self-esteem during this transition. Gender differences emerged with boys showing greater decreases in *emotional self-concept* and girls in *academic self-concept*. Students retained at the end of 5th grade had greater declines in all self-perceptions. The results highlight the importance of intervention to prevent the negative impact of secondary school transition on self-perceptions.

Keywords: Secondary school transition, Self-concept, Self-Esteem, Gender differences.

Resumo

A transição para o 2º ciclo tem lugar em Portugal num momento anterior ao da maioria dos países ocidentais. Este estudo teve como objetivo analisar o impacto desta transição sobre o autoconceito e auto-estima dos alunos Portugueses, bem como identificar potenciais efeitos de género. A amostra incluíu 377 alunos (M_{age} = 9.46; SD = 0.93; 52.8% boys), aos quais foram aplicados questionários de autorrelato no 4º (a meio e no fim) e 5º ano (no início e no fim). Para avaliar a evolução das autopercepções foram utilizados modelos lineares multinível. Os resultados mostram diminuições significativas em todas as dimensões do autoconceito e na auto-estima com a transição. Existiram diferenças de género com os rapazes a apresentarem maiores reduções no *autoconceito emocional* e as raparigas no autoconceito académico. Os alunos retidos no 5º ano tiveram decréscimos maiores em todas as autopercepções. Os resultados ilustram a importância de intervenções preventivas na transição para o 2º ciclo de forma a reduzir o impacto negativo destas sobre as autopercepções.

Palavras-chave: Transição para o 2º ciclo, autoconceito, auto-estima, diferenças de género

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Introduction

One of the most difficult transitions that young people have to face is the transition one from elementary to secondary school (Eccles, 2004). Students enter new educational environments that are typically larger, less nurturing, more departmentalized (e.g., going from one classroom to another), more competitive, and more demanding academically, and so given the extensive nature of these changes transition to secondary school has been consistently associated with a decrease of academic motivation, grade-point average, academic and social self-concept, and self-esteem (Alspaugh, 1998; Cantin & Boivin, 2004; Coelho, Sousa, & Figueira, 2014; Seidman, Allen, Aber, Mitchel, & Feinman, 1994; Simmons, Carlton-Ford, & Blyth, 1987; Wigfield, Eccles, Mac Iver, Reuman & Midgley, 1991).

However, these changes could be just temporary, as suggested by studies regarding self-esteem where changes are not maintained after the transition year (Cantin & Boivin, 2004; Wigfield et al., 1991). Additionally, these findings originate from studies conducted in educational systems where the transition takes place after 6th grade, and therefore often coincides with students' entry into adolescence and the onset of puberty.

In Portugal, unlike most countries (e.g., United Kingdom or Spain), secondary school transition takes place quite earlier, as elementary school only encompasses four grades. Therefore, the scenario in which the difficulty of this transition is heightened due to its co-occurrence with other normative changes associated with early adolescence, such as the acquisition of formal cognitive operations, biological transformations of puberty, psychological shifts that accompany the emergence of sexuality does not happen in Portugal. Given the uniqueness of the Portuguese school system, the present study will focus on the question of whether the decrease in students' self-concept and self-esteem is due to transition to secondary school itself or to the physical, emotional, and cognitive changes associated with adolescence and puberty.

Secondary School Transition

Secondary school transition encompasses a broad specter of changes to student's school experience (Coelho, Marchante, & Jimerson, 2016). Academically, secondary school students are generally expected to be more independent and responsible for their own assignments. They also need to deal with the varied styles and demands of new and multiple teachers whom they perceive as being more demanding and less supportive than those in elementary school (Cantin & Boivin, 2004). Throughout the day they rotate between different teachers (Coelho et al., 2016), while also adapting to stricter grading and more social comparison (Cantin & Boivin, 2004). These adaptations may have negative consequences on students' academic and emotional self-concept (Coelho, Marchante, & Sousa, 2016).

Social networks are disrupted and students need to make new friends and integrate into a new, larger, and more complex social environment, while coping with the loss of some of their elementary school friends (Eccles, 2004; Eccles & Midgley, 1989). Additionally, students shift from being the oldest in elementary school to the youngest in secondary school (Coelho et al., 2016). The number of new peers may also make a difference, as Niesen and Wise (2004) concluded that when several elementary schools merge into one secondary school, students may perform more poorly academically than

when all students make the move from a single elementary school. All these changes may negatively impact their social and emotional self-concept and self-esteem.

Self-Concept

Self-concept, 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, has been widely studied in the field of psychology due to its direct involvement in individual self-regulation of present and future behavior (Delgado, Inglés, & Garcia-Fernández, 2013). Self-concept has been considered as central element in shaping personality (Delgado et al., 2013), a crucial indicator of satisfaction with life (Goñi Palacios, Esnaola, Rodríguez-Fernández & Ortiz de Barrón, 2015) and closely related to psychosocial adjustment in adolescence (Fuentes, Garcia, Gracia, & Lila, 2011). Other authors have shown that self-concept has a strong negative association with depressive symptoms (Kuzucu, Bontempo, Hofer, Stallings, & Piccinin, 2014) and influences the expression of psychopathological symptoms and aggression towards peers (Garaigordobil, Pérez, & Mozaz, 2008).

In Educational Psychology, self-concept is widely acknowledged as a central indicator of school adjustment (Veiga, García, Reeve, Wentze, & García 2015; Wang & Fredricks, 2014). In fact, most authors consider the mutual influence of self-concept and school achievement (Coelho et al., 2014; Fuentes, García, Gracia, & Alarcón, 2015; Marsh, 1990a). Self-concept has been linked through numerous empirical studies to other academic, social and behavioral outcomes, such as school engagement (Ramos-Díaz, Rodríguez-Fernández, Fernández-Zabala, Revuelta, & Zuazagoitia, 2016; Veiga et al., 2015), social competence (Fuentes et al., 2011) and pro-social behaviour (Inglés, Martínez-González, García-Fernández, Torregrosa, & Ruiz-Esteban, 2012). Also, academic self-concept has a close connection to achievement (Veiga et al., 2015) with low academic self-concept as one of the most important predictor factors of school failure (Zsolnai, 2002) and high academic self-concept a predictive factor of academic success and school adjustment (Inglés, et al., 2012).

Secondary school transition impact on self-concept. Wigfield et al. (1991) reported that academic and social self-concepts followed different patterns of evolution after the transition. Academic self-concept declined immediately after elementary school, and continued to decline throughout the first year of secondary school. This gradual decline may reflect a long-term effect of transition, as academic self-concepts could become increasingly negative as children progress through secondary school. Whereas social Self-concept, after having decreased immediately after the transition, increased during the first year of secondary school, the authors have suggested that, this rebound occurs, because students adjust to their new school environment and re-establish their networks over the first year of secondary school. Cantin and Boivin (2004) however have reported sudden and persistent decreases in academic and social self-concepts after the school transition.

Given that secondary school transition in Portugal occurs at an earlier age (usually at the age of nine), there may be a different effect on self-concept since Eccles (2004) says that, by age 10, children are typically far less optimistic, and during that developmental stage there is a much stronger relation between their self-ratings and their actual performance, accompanied by a high differentiation in self-concept.

Self-Esteem

Self-esteem, according to Marsh (1990a) is a more general self-perception reflecting a general self-worth feeling. This construct has been studied worldwide and cross-culturally (Bleidorn, et al., 2016), and is one of the most widely studied variables in the behavioral sciences, with student's self-esteem being a central focus of school transition research (Ryan, Shim & Makara, 2013).

Secondary school transition impact on self-esteem. To date, research on the effects of secondary transition has yielded mixed results; while there are studies that found no change in children's self-esteem following transition (Hirsch & Rapkin, 1987), most reported a significant decrease in self-esteem (Cantin & Boivin, 2004; Seidman et al., 1994; Simmons et al., 1987; Wigfield et al., 1991). There are, however, differences in the pattern of evolution of self-esteem after the transition. Wigfield et al. (1991) reported that self-esteem increased during the first year of secondary school after having decreased immediately after the transition, whereas Cantin and Boivin (2004) reported that the decrease in self-esteem occurred progressively during the first 2 years of secondary school. Cantin and Boivin (2004) attribute the mixed findings on the evolution of student's self-esteem to the variation across studies in school environments (i.e., size, organizational structure), and to the lack of longitudinal studies across secondary school transition.

Gender differences in self-perceptions in Secondary school transition

The most common individual characteristic studied in secondary school transition is gender. Even though some studies did not found any gender differences in the trajectories of self-esteem and peer self-concept across transition (Seidman et al., 1994; Wigfield et al., 1991), there are several studies that found girls' self-esteem is more negatively impacted from the secondary school transition after 6th grade than boys' (Cantin & Boivin, 2004; Simmons et al., 1987). Simmons et al. (1987) reported only girls for whom the school transition coincided with the early onset of puberty presented a decline in self-esteem. As such, research evidence regarding gender differences in the development of self-perceptions across transition has remained inconclusive for transitions taking place before 6th grade.

Present study

Most studies about secondary school transition have examined changes only between two time points, an option, which according to Ryan et al. (2013), provides limited understanding of self-concept development during this phase because at least three time points are needed to document a trend. Additionally, Ryan et al. (2013) concluded that studies that assess adjustment at one point in different grades cannot disentangle within- and between-year changes. Therefore, multiple time points at each grade are necessary to examine if changes begin prior to the transition (i.e., fall to spring in elementary school), occur at the beginning of secondary school (i.e., spring to fall across the transition) or unfold during the first year in secondary school (fall to spring in secondary school). In the present study, we investigated whether Portuguese students differ in their multiple self-perceptions before and after 4th grade transition in order to gain a more complete picture regarding transition effects for Portuguese students.

Given these goals the following hypotheses were formulated; 1) students' *academic, social and emotional* self-concept and *self-esteem* will decrease from the middle of 4th grade to the end of 5th grade; 2) girls will present greater decrease in self-esteem with the secondary school transition than boys; 3) students retained at the end of 5th grade will present greater decreases in their self-perceptions.

Method

Research Design

The data for the present study were collected on four occasions over 2 years, namely at the middle of 4th grade, final year of elementary school (February: T1); at the end of 4th grade (June: T2); a month after the start of 5th grade, first year of Secondary school (November: T3); and at the end of 5th grade (June: T4). Students participating in the present study are control groups in a wider longitudinal study aimed at the development of a school adjustment program for school transitions.

Participants

Three hundred seventy-six 4th grade students from six Portuguese public school groupings (three of which had secondary schools situated in a rural setting), from the municipality of Torres Vedras (district of Lisbon) participated in this study. One hundred ninety-nine (52.8%) students were boys and all students frequented elementary school in a rural setting. Students' age ranged from 9 to 12 years (M_{age} = 9.46; SD = 0.93) at the 4th grade assessment. Data was gathered from two different cohorts, each spanning two school years. The sample is homogeneous regarding gender, χ^2 (1) = 1.55; p > .05. Regarding ethnicity, schools were extremely homogeneous students were overwhelmingly Portuguese (98.6%), below the national average of 2.6% (DGEEC, 2015) of students with different ethnic backgrounds. The total number of students per elementary school class ranged between seven and twenty-two (M = 12.99).

There was attrition due to students who changed schools during 4th grade (12 students, 3.2%), or who had to repeat 4th grade (9 students, 3.9%) and, as such were removed from the sample. An additional 19 students (5.1%) transitioned into private secondary schools or secondary schools outside the municipality and were not available for the 3rd and 4th measurement. 94.4% of students completed the first measurement, 90.4% the second measurement, 83.5% the third measurement and 85.4% the last assessment. Attrition was homogeneous regarding gender, χ^2 (1) = 3.24; p > .05, and secondary school location (rural vs. urban), χ^2 (1) = 1.73, p > .05.

Instruments

Self-Concept. The Portuguese children and adolescents version (Coelho, Sousa, Marchante, & Romão, 2015) of the Auto-Concepto Forma 5 (AF-5; García & Musitu, 2001; García, Musitu, & Veiga, 2006) was used. The AF5 is one of the most widely used scales for the multidimensional measurement of self-concept in Spanish-speaking countries (García, Musitu, Riquelme & Riquelme, 2011). It measures five self-concept dimensions: *academic* (e.g. "I do my homework well"), *social* (e.g. "I make friends easily"), *emotional* (e.g., reverse scored, "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"). In the Portuguese children and adolescents version (Coelho et al., 2015), the 30 items are answered on a 5-point scale (ranging from 1- Never, to 5 – Always). 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 several countries including Portugal (Coelho et al., 2015; Rodrigues, Veiga, Fuentes, & García, 2013); Spain (Delgado, Inglés, & García-Fernández, 2013); and Chile (García et al., 2011). There is also a validated English version available (García, Gracia, & Zeleznova, 2013). As for internal consistency, the Cronbach's α for each dimension were adequate: *social* (.70), *academic* (.83), *emotional* (.77), *family* (.80) and *physical* (.79). The composite reliability and average variance extracted for the sample were also within appropriate values: *social* (C.R. = .75; A.V.E. = .53); *academic* (C.R. = .90; A.V.E. = .69); *emotional* (C.R. = .77; A.V.E. = .52); *family* (C.R. = .80; A.V.E. = .57) and *physical* (C.R. = .79; A.V.E. = .54).

Self-esteem. Assessed with the General Self scale from the Self-Description Questionnaire I - (SDQ I; Marsh, 1990b; Portuguese adaptation by Faria & Fontaine, 1990) for elementary students. The scale is composed by 8 items (Cronbach's α = .83, .73 in the Portuguese version; C.R. = .89, A.V.E. = .63 for the sample), that are related to general self-esteem (e.g.: "In general, I like the way I am"), answered on a five-point scale (1 – False; 5 – True).

School records. School records are official public records displaying the grades and absences of each student in each subject he/she attends during a school term (in Portugal there are 3 school terms per year). School records are quantitative varying between 1 and 5 (with grades 1 and 2 corresponding to negative scores and grades 3, 4 or 5 corresponding to adequate, good or very good achievement). School records for the 3rd term are final for that school year; they indicate students are successfully transiting to 6th grade. These records were used to obtain information about retention.

Procedure

The present study was carried out in six public school groupings, by the Académico de Torres Vedras, and supported by the Torres Vedras municipality. Each year the 4th grade classes selected to participate were chosen by the Board of the School Grouping, as each elementary schools is part of a school grouping headed by a secondary school (5th to 9th grade), with the vast majority of students remaining in the same school grouping when they make the transition to 5th grade. Parental consent forms were sent two weeks before the first measurement and received via the regular school channels. Questionnaires were applied by the same educational psychologist during 5th grade in their new classes. The present study was conducted following the national professional code of ethics for psychologists, following national legislation.

Data analysis

T tests were performed to analyze if there were initial differences in the various dimensions of self-concept between genders and between students who were retained in 5th grade and those that passed. Little's MCAR test was used to analyze the pattern of missing data, the value indicated that the missing values were MCAR, χ^2 (5) = 5.417; p > .05. Additionally, multiple imputation was used to deal with missing values. The imputed data set, composed by 5 imputations, was created and the pooled results were used. Multilevel linear modeling (MLM), with a repeated measures design, was used

(SPSS, mixed models) to evaluate the evolution of self-perceptions, across gender and 5th grade success. There are several advantages to MLM, compared with other analyses, such as the lack of requirement for complete data across time points (Heck, Thomas, & Tabata, 2013). In a repeated measures study design, individual scores are nested within individuals and these in turn are nested within classes. As nested data is more likely to correlate within the group, students' evaluations from the same class are more likely to be highly correlated. Parallel growth models were used, the advantage of this procedure is that it allows for the examination of the extent to which concurrent individual changes in the five dimensions of self-concept are mutually interrelated, as well as the extent to which changes may be explained by the hypothesized individual (gender and 5th grade success) factors in the model. Initially, a four-level model was run to account for the 376 individuals being nested within four measurements, and that the students were nested in 35 classes, which were nested in six school groupings. However, Intraclass Correlations (ICC) showed that there was no need to include the school grouping level into the models, since that there is not sufficient variance explained at that level ($ICC_{self-concept} = .004$) , following Heck at al. (2013). Accordingly, all school grouping level variables (i.e. secondary school size; secondary school location and secondary school SES) were not included in the models.

The intercept was used as a random effect in the models, and the best model fit was achieved with scaled identity as covariance type for Levels 2 (individual) and 3 (class). A growth rate indicator variable was constructed to manage the parallel growth trajectories in outcome measures. There are different ways to code the growth rate variable, after several analyses the best fit was achieved by coding the first measurement occasion as 0 and the fourth measurement occasion as 1. As this approach allows capturing the growth that occurs, it was the procedure used to create the null model (Model 0). Model 1 was created to analyze interactions between time and self-perceptions, Model 2 was created to analyze interactions between time, gender and self-perceptions, while controlling as 4th grade class size (3rd level variable). The final Model (Model 3) was created to evaluate potential gender moderating effects, including interactions between time, self-perceptions, 5th grade success and gender, taking advantage that, in MLM, models can be adjusted simultaneously for the effects of numerous factors and covariates.

Heck et al. (2013) note that in SPSS MIXED, the reference group for a variable entered as a factor is the last category. The alpha level was set to $< .05$ and effect sizes (Cohen´s *d*) were calculated for stress levels. Cohen (1988) suggests that *d* values of 0.2, 0.5, and 0.8 should be interpreted as small, medium and large effects, respectively. IBM SPSS Statistics for Windows, Version 20 (IBM Corp, Armonk, NY) was used.

Results

Preliminary analysis

The descriptive statistics for self-concept and self-esteem along the four assessments in 4th and 5th grade are presented in Table 1.

Table 1
Self-Perceptions Descriptive Statistics and Effect Sizes for Time

	4th grade (n = 377)		5th grade (n = 258)		Effect Size
	March M (SD)	June M (SD)	October M (SD)	June M (SD)	d
Social Self-concept	24.15 (3.04)	24.04 (3.15)	23.06 (3.54)	22.84 (3.48)	-0.41
Academic Self-concept	22.75 (3.60)	22.39 (3.67)	21.06 (3.94)	20.37 (4.02)	-0.63
Emotional Self-concept	21.24 (3.98)	21.59 (3.84)	21.19 (4.22)	20.54 (4.35)	-0.18
Family Self-concept	27.15 (2.91)	27.27 (2.84)	26.88 (3.37)	26.50 (3.45)	-0.21
Physical Self-concept	22.39 (3.74)	22.27 (3.90)	21.39 (4.03)	21.14 (4.18)	-0.32
Self-Esteem	30.87 (4.36)	30.66 (4.34)	28.89 (4.56)	28.00 (4.91)	-0.62

The descriptive statistics for self-concept and self-esteem along the four assessments in 4th and 5th grade, organized by gender, is presented in Table 2 and by 5th grade success in Table 3.

Table 2
Self-Perceptions Descriptive Statistics at each Assessment, by Gender

	Boys (n = 199)				Girls (n = 177)			
	4th grade		5th grade		4th grade		5th grade	
	March (n=188)	June (n=179)	October (n=176)	June (n=180)	March (n=167)	June (n=161)	October (n=138)	June (n=141)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Social SC	23.96 (3.26)	23.95 (3.30)	22.91 (3.72)	22.83 (3.73)	24.36 (2.77)	24.14 (2.98)	23.25 (3.30)	22.85 (3.14)
Academic SC	22.07 (3.62)	21.90 (3.60)	20.53 (4.09)	19.99 (4.13)	23.51 (3.40)	22.94 (3.69)	21.74 (3.66)	20.87 (3.83)
Emotional SC	21.90 (3.60)	22.24 (3.49)	21.88 (3.91)	21.14 (4.00)	20.72 (4.30)	20.86 (4.09)	20.30 (4.44)	19.70 (4.64)
Family SC	27.02 (2.73)	27.30 (2.35)	26.56 (3.51)	26.27 (3.46)	27.30 (3.10)	27.23 (3.31)	27.28 (3.16)	26.79 (3.43)
Physical SC	22.40 (3.89)	22.48 (3.79)	21.44 (4.14)	21.44 (4.15)	22.39 (3.57)	22.04 (4.02)	21.33 (3.89)	20.74 (4.20)
Self-Esteem	30.78 (4.47)	30.62 (4.31)	28.77 (4.80)	28.24 (4.81)	30.96 (4.24)	30.71 (4.38)	29.04 (4.25)	27.69 (5.02)

Note. SC = Self-concept

There were initial gender differences in two dimensions: *academic self-concept*, $t(353) = -3.58$, $p < .001$ and *emotional self-concept*, $t(353) = 2.82$, $p < .01$. No significant differences between genders were found in *social self-concept*, $t(353) = -1.24$, $p > .05$; *family self-concept*, $t(353) = -0.92$, $p > .05$; *physical self-concept*, $t(353) = 0.02$, $p > .05$ and self-esteem, $t(353) = -0.39$, $p > .05$.

Table 3
Self-Perceptions Descriptive Statistics at each Assessment, by 5th grade success

	Retained (*n* = 39)				Not retained (*n* = 282)			
	4th grade		5th grade		4th grade		5th grade	
	March	June	October	June	March	June	October	June
	M	*M*	*M*	*M*	*M*	*M*	*M*	*M*
	(*SD*)	(*SD*)	(*SD*)	(*SD*)	(*SD*)	(*SD*)	(*SD*)	(*SD*)
Social SC	23.14	22.69	21.16	21.10	24.25	24.21	23.30	23.06
	(3.43)	(3.50)	(4.00)	(2.77)	(2.96)	(3.06)	(3.40)	(3.35)
Academic SC	21.33	20.43	17.92	17.69	22.91	22.62	21.45	20.73
	(3.14)	(3.95)	(3.92)	(3.54)	(3.61)	(3.61)	(3.73)	(3.94)
Emotional SC	21.02	21.60	20.78	20.15	21.37	21.57	21.21	20.54
	(4.18)	(4.25)	(4.14)	(5.01)	(3.98)	(3.80)	(4.20)	(4.26)
Family SC	26.60	26.10	25.00	25.21	27.23	27.43	27.12	26.67
	(3.72)	(3.69)	(4.96)	(3.67)	(2.76)	(2.65)	(3.02)	(3.39)
Physical SC	22.45	21.83	20.35	20.90	22.41	22.31	21.52	21.18
	(4.40)	(4.13)	(4.69)	(4.03)	(3.64)	(3.86)	(3.92)	(4.21)
Self-Esteem	29.31	29.79	26.32	25.85	31.05	30.75	29.21	28.28
	(5.84)	(5.52)	(5.31)	(4.87)	(4.05)	(4.10)	(4.34)	(4.84)

Note. SC = Self-concept

There were also significant differences in initial levels of self-concept between students who were retained in 5th grade and those who passed in *social self-concept*, $t(353) = -2.23$, $p < .05$; *academic self-concept*, $t(353) = -2.70$, $p < .01$ and *self-esteem*, $t(353) = -2.46$, $p < .05$, with students who were successful in the end of 5th grade presenting higher levels of self-concept and self-esteem in the first assessment (middle of 4th grade). There were no significant differences in *emotional self-concept*, $t(353) = -0.53$, $p > .05$; *family self-concept*, $t(353) = -1.33$, $p > .05$ and *physical self-concept*, $t(353) = 0.13$, $p > .05$.

Self-Concept and Self-Esteem during Transition

The evolution of self-concept dimensions during secondary school transition is reported in Table 4.

Table 4
Parallel Growth Curve Models for Self-Concept

	Model 0	Model 1	Model2
Parameter	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)
Deviance (-2*log likelihood)	35333.004	35256.565	35160.669
Deviance (AIC)	35339.044	35356.565	35166.669
Social Self-concept	24.58 (0.30)[***]	24.23 (0.49)[***]	24.29 (0.49)[***]
Academic Self-concept	23.69 (0.30)[***]	23.34 (0.50)[***]	23.40 (0.49)[***]
Emotional Self-concept	21.98 (0.30)[***]	21.64 (0.50)[***]	21.69 (0.49)[***]
Family Self-concept	27.35 (0.30)[***]	27.00 (0.49)[***]	27.06 (0.49)[***]
Physical Self-concept	23.00 (0.30)[***]	22.66 (0.49)[***]	22.71 (0.49)[***]
Social Self-concept*Time	-0.45 (0.09)[***]	-0.44 (0.10)[***]	-0.35 (0.10)[***]
Academic Self-concept*Time	-0.81 (0.09)[***]	-0.93 (0.10)[***]	-0.81 (0.10)[***]
Emotional Self-concept*Time	-0.33 (0.09)[***]	-0.11 (0.10)	-0.08 (0.10)

Family Self-concept*Time	-0.21 (0.09)[*]	-0.24 (0.10)[*]	-0.17 (0.10)
Physical Self-concept*Time	-0.42 (0.09)[***]	-0.34 (0.10)[**]	-0.31 (0.10)[**]
Social Self-concept*Gender(G) *Time		-0.03 (0.11)	-0.06 (0.11)
Academic Self-concept*Gender(G)*Time		0.29 (0.11)[*]	0.23 (0.11)[*]
Emotional Self-concept*Gender(G)*Time		-0.49 (0.12)[***]	-0.50 (0.11)[***]
Family Self-concept*Gender(G)*Time		0.06 (0.12)	0.03 (0.12)
Physical Self-concept*Gender(G)*Time		-0.21(0.12)	-0.21(0.12)
Social Self-concept*Retention(N) *Time			-0.60 (0.11)[***]
Academic Self-concept*Retention(N)*Time			-0.93 (0.11)[***]
Emotional Self-concept*Retention(N)*Time			-0.26 (0.11)[*]
Family Self-concept*Retention(N)*Time			-0.52 (0.11)[***]
Physical Self-concept*Retention(N)*Time			-0.23 (0.11)[*]

Note. AIC = Akaike´s Information Criterion; (G) Girls = 1; (N) = Not retained
[*]$p < .05$; [**]$p < .01$; [***]$p < .001$

As seen in Table 4 (model 0), there was a negative evolution of all dimensions of self-concept during the transition to secondary school (between the last half of 4th grade and the end of 5th grade). The same occurred for self-esteem, $\beta = -0.89$, $SE = 0.11$; $t = -8.03$, $p < .001$). However, effect sizes (reported in Table 1) show that not all dimensions of self-concept were similarly impacted. In the present study the negative effects of secondary school transition can be considered medium in *social* and *academic self-concept*, as well as in self-esteem, whilst they can be considered small in *emotional*, *family* and *physical self-concept* (according to Cohen, 1998). Additionally, in *emotional* and *family self-concept* this negative evolution was no longer significant when we adjusted for gender and 5th grade success (Table 4, model 1 and 2). Fourth grade class size (a 3rd level variable), was also introduced into the model, but its effects were not significant, $\beta = -0.07$, $SE = 0.08$; $t = -0.88$, $p > .05$.

Gender differences. Model 1 was created to understand if both genders presented similar evolution patterns in self-concept and self-esteem during secondary school transition. There were two dimensions of self-concept that showed different evolution patterns; *academic self-concept*, where girls had a greater decrease in the end of 5th grade than boys; and *emotional self-concept* where it was boys who showed a greater decrease. There was no significant gender by time interaction in self-esteem, $\beta = -0.19$, $SE = 0.16$; $t = -0.88$, $p > .05$)

Retention. The effects of 5th grade retention and the interaction between 5th grade retention and time were tested in the model 2 (Tables 4 and 5). The fit of the model improved significantly when retention was added as a factor: $\Delta\chi^2 (2) = 5.96$, p < .001. Significant interaction effects between retention and time were found for all dimensions of self-concept and for self-esteem, $\beta = -0.53$, $SE = 0.24$; $t = -2.18$, $p < .05$), with students who were retained at 5th grade presenting a bigger decrease in self-concept and self-esteem during secondary school transition.

Discussion

This study compared the self-perceptions of Portuguese students before and after the transition to secondary school. This transition takes place between grades 4 and 5 and, as such, occurred before the start of puberty and the entry into adolescence.

Therefore, the present study contributes to the clarification of whether the changes in students' self-perceptions across the transition to secondary school are due to the transition experience or to its coincidence of transition and puberty.

The first hypothesis is supported given that as students' progress into 5th grade there is a steep decline in self-esteem and all dimensions of self-concept when compared to their 4th grade levels. However, the decreases in *emotional self-concept* are no longer significant after we adjust for gender and the same happens with *family self-concept* after we account for 5th grade retention.

For *academic self-concept*, the results indicated an overall trend of decline after the transition took place. This pattern of results is similar to several previous studies (Cantin & Boivin, 2004; Wigfield et al., 1991), which attribute the decrease in student's perception of their scholastic competence to the new demands in both the educational environment and academic demands following school transition. Parallel to the decline in *academic self-concept*, a decline in *social self-concept* was also observed. The present results show that, at this early age, the suggestion made by several authors (Cantin & Boivin, 2004; Ryan et al., 2013; Wigfield et al., 1991), that *social self-concept* may be less vulnerable to the strains associated with school transitions than the academic dimension does not apply, as there was no increase in *social self-concept* accompanying the decrease in *academic self-concept*. An explanation for this decline in *social self-concept* may be found in Wigfield et al. (1991) who suggested that a decline in social self-perceptions after transition probably reflects students' reactions to their new school environments, since they were the oldest students in their previous schools and so were likely to have the most status. This argument is also probably valid to explain the drop in *physical self-concept*, given that after secondary school transition 5th grade students are now the youngest (and probably smaller) in a school which also has students up to the 9th grade. Additionally, secondary school transition is a period of relational instability, when old friendships are dismantled, new ones are formed and students have to adapt to a larger peer group (Symonds & Galton, 2014).

A decrease in student's *self-esteem* during the transition was also observed, a finding consistent with several previous studies (Cantin & Boivin, 2004; Eccles & Midgley, 1989; Seidman et al., 1994; Simmons et al., 1987; Wigfield et al., 1991). However, the results contradict the conclusion by Symonds and Galton (2014) that *self-esteem* is essentially stable across transition, with minorities of children for whom *self-esteem* declines and increases. In the present study, *self-esteem* decreased immediately following the transition, a pattern similar to one reported by Wigfield et al. (1991). Also, they knew their previous school environment and routines well. Hence, generally the transition to secondary school seems to strongly impact self-perceptions, most likely because it leads to a re-evaluation of the preadolescent self-concept, as well as of their social situation because, in Portugal, elementary schools are usually smaller units, with few classes per grade, whereas secondary 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.

The second hypothesis was not supported given that there have not been found different trajectories in self-esteem due to gender. The present results are consistent with Seidman (1994), who reported that *self-esteem* declined across the school transition, but found no gender interaction effects with time. This lack of gender differences contradicts several studies (Cantin & Boivin, 2004; Simmons et al., 1987) that covered secondary school transition after 6th grade that found girls' *self-esteem* had

more pronounced declines along the transition. However, most authors attributed girls more negative impacts on cumulative life transitions (Simmons et al., 1987), pubertal changes or processes connected to adolescence (Symonds & Galton, 2014). The earlier timing of school transition in the present study is likely to defuse those conditions.

However, there were differences in self-perception' development between genders during the transition to secondary school in *academic* and *emotional self-concept*. Girls show a more pronounced decline in *academic self-concept*, which is likely influenced by their initial higher levels. Additionally, a very strong significant time by gender interaction was found for *emotional self-concept*. Compared to girls, boys reported a more pronounced drop in the levels of *emotional self-concept*, particularly after the second measurement. The steeper decrease in *emotional self-concept* during 5th grade for boys is preceded by an increase in this dimension during the second half of 4th grade, a period where boys are at the height of their *emotional self-concept* in elementary school (Coelho, Marchante, & Sousa, 2016). This is an important finding given the lack of prior studies analyzing the evolution of *emotional self-concept* during this school transition.

The third hypothesis was supported, given that students that were retained at the end of 5th grade had greater decreases in all dimensions of *self-concept* and in *self-esteem* during secondary school transition. This result highlights the importance of developing interventions for those students who present abrupt decreases in their self-perceptions during secondary school because they present a higher risk of retention.

In conclusion, this study makes an important contribution to the research on secondary school transition. Given that, in Portugal, this transition occurs before the onset of puberty, our results indicate that it is the transition itself (due to the changes in students' social and academic environment) that is responsible for the negative impacts on students' self-perceptions. This knowledge highlights the importance of designing interventions that prevent these declines, given the known relation between self-perceptions and educational outcomes (e.g., Ryan et al., 2013), especially because those students who present steeper drops show higher risk of retention.

Limitations

A limitation for this study resides in the fact that it only follows student during their first year in secondary school. Also, another limitation is that the findings from this study may have been limited by statistical power, particularly in the retention group.

Future Directions

Another important future direction would be to follow these students into the 6th grade, in order to clarify if the decreases in self-esteem are temporary drops corresponding to an adjustment period (as suggested by Wigfield et al., 1991), or if they reflect a long-term effect of school transition, a progressive decrease indicating enduring problems that some students encounter in adjusting to their new social and scholastic environment (as proposed by Cantin & Boivin, 2004).

Additionally, longitudinal research into the development of students' self-perception after they go into 6th grade would also to analyze students as they enter puberty and, therefore, likely to experience new upheavals in their self-perceptions.

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