

## When Adolescents with High Self-Concept Lose their Engagement in School

Feliciano H. Veiga\*, Fernando García\*\*, Johnmarshall Reeve\*\*\*,  
Kathryn Wentzel\*\*\*\* and Óscar García\*\*

\*Institute of Education, University of Lisbon, Portugal,

\*\*Department of Methodology of the Behavioral Sciences, University of Valencia, Spain,

\*\*\*Department of Education, Korea University, Korea,

\*\*\*\*Department of Human Development, College of Education, University of Maryland, USA

### Abstract

Engagement in school and self-concept are two main constructs to explain the school adjustment. To understand how engagement might change during adolescence, we analyzed early and middle adolescents' engagement in school (cognitive, affective, behavioural, and personal agency) as a function of their level of self-concept. Participants were 685 adolescents, 296 males (43.2%) and 389 females between 11-17 years old. Among early adolescents, students with high self-concept always reported more cognitive, affective, behavioural, and personal agency engagement than students with low self-concept. However, among middle adolescents, students with high self-concept reported only higher affective and behavioral engagement than students with low self-concept. High self-concept middle adolescents reported levels of cognitive and agentic engagement that were the same as their low self-concept peers, suggesting that these high self-concept middle adolescents had lost their earlier high levels of cognitive and agentic engagement.

*Keywords:* Students' engagement in school, self-concept, early and middle adolescence.

### Resumen

La motivación escolar y el autoconcepto son dos constructos claves del ajuste académico. Para entender cómo la motivación escolar cambia durante la adolescencia, se analizó la motivación académica de adolescentes tempranos y medios (cognitiva, afectiva, conductual e implicación personal) y su autoconcepto. La muestra fue de 685 adolescentes, 296 hombres (43,2%) y 389 mujeres de 11 a 17 años. Los adolescentes tempranos con alto autoconcepto siempre indicaron mayor motivación cognitiva, afectiva, conductual e implicación personal que los de autoconcepto bajo. Sin embargo, los adolescentes medios con alto autoconcepto solo indicaron mayor motivación afectiva y conductual que los de bajo autoconcepto. Los adolescentes medios con alto autoconcepto indicaron iguales niveles de motivación cognitiva e implicación que los de bajo autoconcepto. Estos resultados sugerirían que los adolescentes medios con mayor autoconcepto habrían perdido sus niveles altos de motivación cognitiva y escolar de la adolescencia temprana.

*Palabras clave:* motivación del estudiante en la escuela, autoconcepto, adolescencia temprana y media.

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Correspondence concerning this article should be addressed to Fernando Garcia, Department of Methodology of the Behavioral Sciences, Faculty of Psychology, University of Valencia, F-102 (first floor) Av. Blasco Ibanez, 21, 46010 Valencia, Spain. E-mail: fernando.garcia@uv.es

## Introduction

Engagement in school and self-concept are two main constructs to explain students' school adjustment (Christenson, Reschly, & Wylie, 2013; Rodríguez-Fernández, Droguett, & Revuelta, 2012; Skinner, Kindermann, & Furrer, 2009). While self-concept and engagement positively predicts extent of school adjustment, the relation between self-concept and engagement may change during adolescence (Eccles et al., 1993; Ryan, 2001). This study examines the relation between students' engagement in school and students' personal self-concept, throughout adolescence.

Engagement in school has been conceptualized as the extent to which students are committed to school and motivated to learn (Simon-Morton & Chen, 2009). Since that was defined, many studies have confirmed that engaged students are more likely to perform well on several key outcomes that indicate adolescents' healthy development, positive functioning, and social adjustment (Bang, Suárez-Orozco, & O'Connor, 2011; Chase, Hilliard, Geldhof, Warren, & Lerner, 2014; Kozan, Fabio, Blustein, & Kenny, 2014; Madill, Gest, & Rodkin, 2014). Students' engagement in school has been related to a high self-concept and self-esteem of students, which are two main indicators of students' general school adjustment (García, Gracia, & Zeleznova, 2013; Pellas,

2014; Preckel, Niepel, Schneider, & Brunner, 2013).

Students' engagement in school is seen as an antecedent of their academic performance, as indicated by their school achievement and constructive behavior displayed in school and in later life (Appleton, Christenson, & Furlong, 2008; Fredricks, Blumenfeld, & Paris, 2004; Furrer & Skinner, 2003; Reeve & Tseng, 2011; Wentzel, 2012). Hence, students' lack of engagement foreshadows their future low academic achievement, conduct problems and school dropout (Finn, 1989; Kozan et al., 2014; Reeve & Tseng, 2011).

Overall, there is an agreement concerning multidimensional nature of students' engagement which is often presented as a meta-construct (Fredricks et al., 2004; Glanville & Wildhagen, 2007). Classical studies describe students' engagement in school as a construct with three related dimensions: cognitions, emotions, and behaviors (Fredricks et al., 2004; Glanville & Wildhagen, 2007; Jimerson, Campos, & Greif, 2003). Cognitive dimension refers to the students' personal involvement (Ainley, 1993), as well as to learning approaches and self-regulatory strategies (Fredricks et al., 2004). Emotional dimension is related to the affective reactions aroused by school, colleagues and teachers (Glanville & Wildhagen, 2007; Marks, 2000). Emotional refers directly to connection and sense of belonging to school (John-

son, Crosnoe, & Elder, 2001) and to the sense of identification with school (Skinner & Belmont, 1993; Voelkl, 1997). The behavioral dimension is defined by the actions and practices directed towards school, encompassing several positive conducts, such as homework completion (Finn & Rock, 1997), attendance to classes and attention during lessons (Johnson et al., 2001), effort in school tasks and in obtaining good grades (Jordan & Nettles, 2000), participation in extra-curricular activities (Finn, Panno, & Voelkl, 1995), and the absence of disruptive conducts regarding school norms (Fredricks, et al., 2004; Veiga et al., 2012). However, recent research suggests a fourth dimension of students' engagement in school: Personal agency (Reeve, 2013; Reeve & Tseng, 2011; Veiga, 2013). The agency dimension conceptualizes the student as proactive, as an agent of action, through showing initiative, expressing preferences, asking questions, making suggestions, and letting the teacher know what one needs, wants, and is interested in (Reeve, 2013; Reeve & Tseng, 2011; Veiga, 2013; Wentzel, 2012).

Numerous studies have strongly related students' engagement with different adolescent factors of student school adjustment (i.e., intelligence, cognitive functioning, social intelligence, social skill, personality traits, physical functioning) that

purportedly contribute to, or protect against, school problems (i.e., failing grades, school disruptive conducts, physically aggressive school conduct, student defiance behaviours). A central indicator of school adjustment is self-concept (Harter, 1999; Marsh & Yeung, 1997; Wang & Fredricks, 2014). Some authors describe self-concept as the best predictor of school achievement (Jones & Grieneeks, 1970; Sánchez-Oliva, Viladrich, Amado, González-Ponce, & García-Calvo, 2014). Other authors present school achievement as a determinant of self-concept (Marsh & Parker, 1984), whereas others suggest that self-concept determines school achievement. In fact, most authors consider the mutual influence of self-concept and school achievement (Coelho, Sousa, & Figueira, 2014; Fuentes, García, Gracia, & Alarcón, 2015; Garcia, Musitu, Riquelme, & Riquelme, 2011; Marsh, 1990; Marsh & Yeung, 1997; Reeve & Tseng, 2011; Veiga et al., 2012; Wentzel, 2012). Frequently, researches show the existence of a significant and persistent relationship between self-concept and engagement in school (Pellas, 2014; Preckel et al., 2013). Hence, the relevance of self-concept, as a key indicator of school adjustment, for engagement-related psychological adjustment and academic achievement has been documented in a plethora of studies (Flook, Repetti, & Ullmann, 2005; Har-

ter, 1999; Valentine, DuBois, & Cooper, 2004).

However, another set of studies has noted that adolescence is critical for students' engagement in school (Darr, 2011; Marks, 2000; Wang & Holcombe, 2010). Academic engagement and success seem to be devalued by peers and to be negatively associated with students' social standing (Preckel et al., 2013). This decrease in engagement seems, however, to be related to the changes that occur in peer influence, which significantly increases during adolescence, contrary to what occurs with family influence (Janosz, Archambault, Morizot, & Pagan, 2008; Li, Lynch, Kalvin, Liu, & Lerner, 2011; Ryan, 2001). During adolescence, peer relations increase in importance and at the same time students' anti-intellectual attitude can reduce the cognitive dimension of engagement (e.g., Vannatta, Gartsein, Zeller, & Noll, 2009). Inconsistent results of these studies cast doubts on whether the observed adolescents' detriment might be related to a reduction of competence (Li et al., 2011; Vogl & Preckel, 2014), and whether it is for all dimensions of engagement (Fredricks et al., 2004; Glanville & Wildhagen, 2007; Lam et al., 2014), including the new fourth dimension of agentic engagement.

The present study examines the engagement levels of both early and middle adolescents with both high and low levels of self-concept.

To do so, we included all four main dimensions of engagement (cognitive, affective, behavioural, and personal agency). Our questions are whether or not (1) the four dimensions of engagement are lower in middle adolescences than in early adolescences and (2) level of self-concept can be related to any observed variation in adolescents' engagement in school.

## Method

### Participants

Participants in this study were 685 adolescents, 296 men (43.2%) and 389 women (56.8%), with age ranging from 11 to 17 years ( $M = 13.65$  years old,  $SD = 1.72$  years old). Each school year group had the following number of participants and percentage (in parentheses): 6<sup>th</sup> grade (138, 20.1%), 7<sup>th</sup> grade (170, 24.8%), 9<sup>th</sup> grade (197, 28.8%), and 10<sup>th</sup> grade (180, 26.3%). Early adolescents were grades 6 to 7 (308, 44.9%) and the middle adolescents were grades 9 to 10 (377, 56.1%). Data were obtained from twelve public schools in the four metropolitan area cities of Portugal (three public schools in each city) selected by simple cluster sampling. If clusters (i.e., schools) are selected randomly, then the elements within the clusters (i.e., students) are similar to those randomly selected (Kalton, 1983). All of the students who participated in this

study (94% response rate): (a) were Portuguese speaking, as were their parents and four grandparents; and (b) were students studying in the 6<sup>th</sup> to the 10<sup>th</sup> grades and ranged in age from 11 to 17 years old.

### Procedure

The sample frame was the Portuguese country. An a priori power analysis was computed to estimate the minimum sample size required to detect with a power of .95 ( $\alpha = .05$ ,  $1 - \beta = .95$ ) a medium-small effect size ( $f = .17$ , Faul, Erdfelder, Buchner, & Lang, 2009; García, Pascual, Frías, Van Krunckelsven, & Murgui, 2008) in an univariate  $F$ -test among the four groups of interaction effects for adolescence stages by self-concept, requiring a minimum sample size of 600 observations. To obtain students we contacted the heads of twelve public High Schools in Portugal. University professors of psychology administered the tests in the north (Braga), centre (Lisbon), and south of the country (Évora) as well as the islands (Azores, Ponta Delgada). Note that hundreds of kilometers separate these Portuguese regions, so the total sample is not restricted to a particular geographical area (Reise, Waller, & Comrey, 2000).

Students who participated in this study had received their parents' approval; and attended the designated classroom where the research was

conducted. Data were collected using a paper-and-pencil self-administered questionnaire, which was applied collectively to the whole class during a regular class period. The participants who did not complete the survey correctly — number and percentage in parentheses — (37, 4.55%), those who showed inconsistencies in their responses (92, 11.30%), and those who were over 17 years old (24, 2.95%) were removed from the research. The study sample size (685) was a bit higher than the minimum sample size required (600), and post-hoc power analysis (Faul et al., 2009; García et al., 2008) showed that it could detect ( $N = 685$ ,  $\alpha = \beta = .05$ ) the fixed effect size ( $f = .17$ ) with a power higher than the a priori fixed value ( $1 - \beta = .97$ ).

### Measures

**Student's Engagement in School (SES, Veiga, 2013).** Adolescents reported the frequency of their engagement in school on four domains: cognitive (e.g., "When writing my work, I begin by making a plan for drafting the text"), affective (e.g., reverse scored, "My school is a place where I feel excluded"), behavioral (e.g., reverse scored, "I am absent from school without a valid reason"), and agency (e.g., "During classes, I ask questions to my teachers"). Each domain is measured with five items on a 6-point scale (1 = totally disagree, 6 = totally agree). Modi-

fications were made, changed reversed items. Scores on each dimension could range from 5 to 30, with higher scores representing greater engagement. The composite reliability (CR) and the average variance extracted (AVE) obtained were as follows: cognitive, CR = .84 and AVE = .52; affective, CR = .88 and AVE = .59; behavioural, CR = .83 and AVE = .49; and agentic, CR = .86 and AVE = .50.

**Piers-Harris Children's Self-Concept Scale (PHSCS, Piers & Herzberg, 2002).** Adolescents self-concept was reported with a 6-items Portuguese adaptation of PHSCS that measured the domain scale of intellectual and school status (Rodrigues, Veiga, Fuentes, & García, 2013; Veiga, 2006) on a 6-point scale (1 = totally disagree, 6 = totally agree). A sample item is: "I am well behaved in school". To ensure that item concepts were comparable for the English version and the Portuguese translated version, back-translation methods were used. The initial measure was translated from English into Portuguese. Three bilingual developmental researchers discussed discrepancies in content, language, and meaning. Finally, the measure was back-translated and compared to the original English version to ensure the concepts were the same. The factor structure of the Portuguese translated version was equivalent to the English version (Veiga,

2006). The obtained composite reliability (CR) was .86 and the average variance extracted (AVE) was .51. To create two groups of high versus low self-concept, we conducted a median split procedure so that the 357 students who scored 27.78 or above were placed into the high self-concept group while the 328 students who scored below 27.78 were placed into the low self-concept group (Calafat, García, Juan, Becoña, & Fernández-Hermida, 2014; Gracia, García, & Lila, 2014).

#### Plan of analysis

Prior to examining multivariate effects, multivariate normality, equality of variances and homogeneity of variance-covariance matrices of MANOVA were checked. A factorial multivariate analysis of variance (MANOVA) was applied for the four domains of engagement (cognitive, affective, behavioural, and personal agency), with a 2 (adolescent stage: early vs. middle) by 2 (self-concept: low vs. high) factorial design with interaction. Univariate follow-up *F* tests were conducted within each source of variation that had multivariate significant overall differences. Significant results on the univariate tests were followed up using Bonferroni's post-hoc tests to maintain an experiment-wise Type I error rate close to the nominal .05 (Maxwell & Delaney, 2004).

## Results

**Multivariate analyses.** In the two-way MANOVA, the main effect of adolescent stage,  $\Lambda = .961$ ,  $F(4, 678) = 6.872$ ,  $p < .001$ ,  $\eta^2 = .04$ , the main effect of self-concept,  $\Lambda = .819$ ,  $F(4, 678) = 37.450$ ,  $p < .001$ ,  $\eta^2 = .18$ , and the interaction effect for adolescent stage by self-concept,  $\Lambda = .985$ ,  $F(4, 678) = 2.532$ ,  $p = .039$ ,  $\eta^2 = .02$ , were statistically significant (Table 1).

**Univariate analyses of main effects.** The univariate  $F$  test for cognitive engagement dimension indicated that there was statistically significant main effect of adolescent stage,  $F(1, 681) = 24.170$ ,  $p < .001$ ,  $\eta^2 = .03$ , students of early adolescent stage had more cognitive engagement,  $M = 19.92$ ,  $SD = 5.11$ , than students of middle adolescent

stage,  $M = 17.66$ ,  $SD = 4.53$ . The univariate  $F$  test indicated that there were statistically significant main effects of self-concept in four domains of students engagement, cognitive,  $F(1, 681) = 16.191$ ,  $p < .001$ ,  $\eta^2 = .02$ , affective,  $F(1, 681) = 123.496$ ,  $p < .001$ ,  $\eta^2 = .15$ , behavioral,  $F(1, 681) = 30.091$ ,  $p < .001$ ,  $\eta^2 = .04$ , and personal agency,  $F(1, 681) = 16.171$ ,  $p < .001$ ,  $\eta^2 = .02$  (see Table 2). Students with low self-concept always had less cognitive ( $M = 17.74$ ,  $SD = 4.61$ , vs.  $M = 19.48$ ,  $SD = 5.06$ ), affective ( $M = 22.75$ ,  $SD = 5.07$ , vs.  $M = 26.54$ ,  $SD = 3.47$ ), behavioral ( $M = 26.09$ ,  $SD = 3.75$ , vs.  $M = 27.49$ ,  $SD = 2.82$ ), and personal agency engagement ( $M = 17.68$ ,  $SD = 5.74$ , vs.  $M = 19.49$ ,  $SD = 5.58$ ) than students with high self-concept (Table 2).

Table 1

*Two-Way Factorial MANOVA for Four Domains of Engagement: Cognitive, Affective, Behavioral, and Personal Agency*

Source of Variation	$\Lambda$	$F$	$g^l_{\text{hypothesis}}$	$g^l_{\text{error}}$	$p$	$\eta^2$
(A) Adolescent Stage	.961	6.872	4	678	<.001	.039*
(B) Self-Concept	.819	37.450	4	678	<.001	.181***
A $\times$ B	.985	2.532	4	678	.039	.015*

Note. \*small effect size,  $\eta^2 \leq .06$ ; \*\*medium effect size,  $.06 < \eta^2 \leq .14$ ; \*\*\*large effect size,  $\eta^2 > .14$ .

Table 2

*Mean and Standard Deviation for four Domains of Engagement (Cognitive, Affective, Behavioral, and Personal Agency) for Levels of Self-Concept*

Domains	Self-Concept				ANOVA		
	Low		High		$F(1, 681)$	$p$	$\eta^2$
	$M$	$SD$	$M$	$SD$			
Cognitive	17.74	4.61	19.48	5.06	16.191	<.001	.023
Affective	22.75	5.07	26.54	3.47	123.496	<.001	.154
Behavioral	26.09	3.75	27.49	2.82	30.091	<.001	.042
Agency	17.68	5.74	19.49	5.58	16.171	<.001	.023

Note. \*small effect size,  $\eta^2 \leq .06$ ; \*\*medium effect size,  $.06 < \eta^2 \leq .14$ ; \*\*\* large effect size,  $\eta^2 > .14$ .

**Univariate analyses of interaction effects.** The interaction effect for adolescent stage by self-concept was statistically significant for cognitive,  $F(1, 681) = 4.448$ ,  $p = .035$ ,  $\eta^2 = .01$ , and, personal agency engagement,  $F(1, 681) = 4.483$ ,  $p = .019$ ,  $\eta^2 = .01$ . Bonferroni post-hoc test,  $\alpha = .05$ , indicated (see Figure 1) that early adolescents with high self-concept had more cognitive engagement ( $M = 20.76$ ,  $SD = 4.98$ ) than the rest of the group, that were not statistically differentiated between one another: early adolescents with low self-concept ( $M = 18.48$ ,  $SD = 5.02$ ), middle adolescent with low self-concept ( $M = 17.32$ ,  $SD = 4.31$ ), and middle adolescents with high self-concept ( $M = 18.04$ ,  $SD = 4.75$ ). As for personal agency engagement, Bonferroni post-hoc test,  $\alpha = .05$ , indicated (see Figure 2) that early adolescents

with high self-concept had more agency engagement ( $M = 20.39$ ,  $SD = 5.43$ ) than did adolescents in the other three groups, none of whom differed significantly from the other two: early adolescents with low self-concept ( $M = 17.56$ ,  $SD = 5.82$ ), middle adolescents with low self-concept ( $M = 17.75$ ,  $SD = 5.87$ ), and middle adolescents with high self-concept ( $M = 18.50$ ,  $SD = 5.60$ ).

## Discussion

The present work analysed engagement in school as a function of the self-concept of early and middle adolescents. As expected, adolescents with higher self-concept always reported high cognitive, affective, behavioural, and personal agency engagement than did adoles-



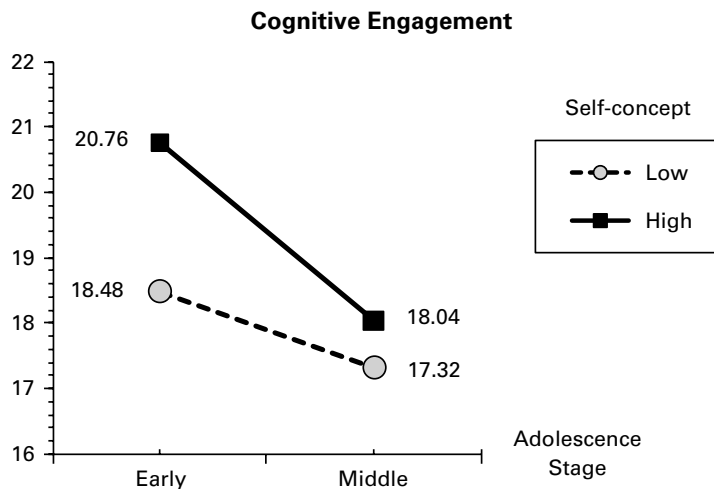


Figure 1. Means of adolescence stage by self-concept in cognitive student engagement in school

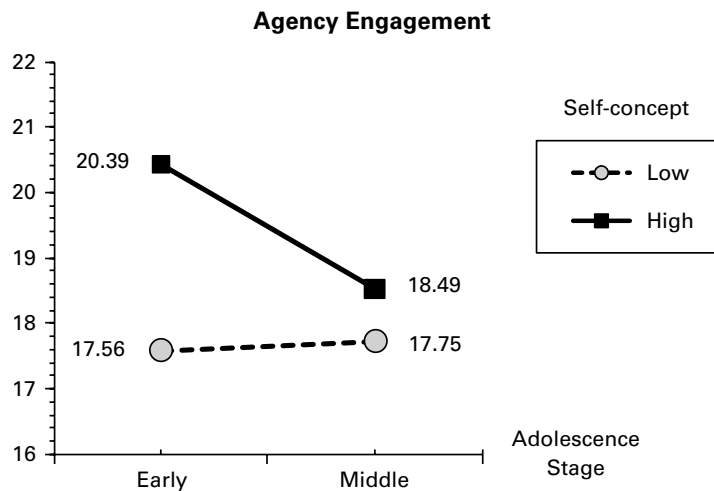


Figure 2. Means of adolescence stage by self-concept in agency student engagement in school.

cents with lower self-concept. These results confirmed a previously wide plethora of studies (Flook et al., 2005; Garcia, et al., 2011; Harter, 1999; Marsh, 1990; Marsh & Yeung, 1997; Reeve & Tseng, 2011; Rodríguez-Fernández et al., 2012; Veiga, 2006; Veiga et al., 2012). In addition, early adolescents reported higher cognitive engagement than did middle adolescents, though the two adolescent groups did not differ in their reports of behavioral, affective, or personal agency engagement. These results confirmed that adolescence is critical for students' engagement in school (Darr, 2011; Marks, 2000; Wang & Holcombe, 2010), though this statement is limited only to the cognitive dimension of engagement.

While these main effects were interesting, the goal of the study was to investigate the interaction effect of adolescent stage by level of self-concept. Early adolescents with high self-concept reported higher cognitive and personal agency engagement than did early adolescents with low self-concept, middle adolescents with high self-concept, and middle adolescents with low self-concept. What is striking about this interaction effect is that middle adolescents with high self-concept had the same low level of cognitive and personal agency engagement as did the early and middle adolescents with low self-concept. Self-concept was an engagement-fostering asset for early adolescents, while it was

not an engagement-fostering asset for middle adolescents.

Our findings reinforce the set of studies that have claimed adolescence to be critical for students' engagement in school (Darr, 2011; Marks, 2000; Rodríguez-Fernández et al., 2012; Rodríguez-Hidalgo, Ortega-Ruiz, & Zych, 2014; Wang & Holcombe, 2010). Cognitive and agency engagement seem to be devalued by peers and to be negatively associated with students' social standing (Preckel et al., 2013), suggesting that this decrease seems to be related to the changes that occur in peer influence, which significantly increases during adolescence, contrary to what occurs with family influence (Janosz et al., 2008; Li et al., 2011; Ryan, 2001). As the importance of peer respect and peer norms increase from early to middle adolescence, this peer influence seems to undermine high self-concept middle adolescents' willingness to cognitively and to agentially engage themselves in the classroom. High self-concept is clearly an engagement-fostering asset for adolescents, but this asset may be undermined in middle adolescence by a growing value for peer respect and norms.

The present study is limited by its cross-sectional research design. As such, we are not able to draw conclusions about causal or longitudinal relations between the study's variables. Further research using, at least, quasi-experimental designs and, at best, experimen-

tal or longitudinal research designs would deepen the analysis of these relationships (Coelho et al., 2014; Veiga, García, Neto, & Almeida, 2009). The present study also did not explicitly measure students' perceived importance of peer respect, norms, values, or behaviours. Given our results, including such a measure in future studies seems warranted. Despite these

two limitations, our results highlight merits of studying student engagement as a multidimensional construct, including self-concept as an engagement-fostering personal resource, and investigating the social dynamics during middle adolescence that may undermine the robust predictive power that self-concept otherwise has on engagement in school.

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Feliciano H. Veiga, PhD, is Full Professor of Educational Psychology at the Institute of Education of the University of Lisbon (IEUL), Portugal. His research interests include Educational Psychology, engagement in schools, self-concept. He coordinates research projects on personal development, motivation in school and academic achievement. He is the author of several Scales of psycho-educational assessment of students and teachers. He is responsible for the PhD in Education, Educational Psychology, in IEUL.

Fernando Garcia, PhD, is Professor of Psychological Methods and Design of Research Studies in the Department of Methodology of the Behavioral Sciences at the University of Valencia, Spain, where he pursues a research agenda on methodology themes —robust statistics, power analysis and confidence intervals— and measurement techniques of self-esteem and family socialization. He also has conducted research examining the cross-cultural validity of the four-typology model of parental socialization.

Johnmarshall Reeve, PhD, is a Professor in the Department of Education at Korea University in Seoul, Korea. His research interests center on the empirical study of all aspects of human motivation and emotion with particular emphases on teachers' motivating styles toward students, students' motivation and engagement during learning activities, the neuroscience of intrinsic motivation, and empirical tests of self-determination theory. Since 2011, he has served as Editor-in-Chief of the journal *Motivation and Emotion*.

Kathryn Wentzel, PhD, is a Professor in Department of Human Development, College of Education, at University of Maryland. She received Ph.D., Psychological Studies in Education Program, in Child and Adolescent Development, at Stanford University. Wentzel's research interests center on the empirical study of students' motivation and engagement in schools. She is Editor-in-Chief of the *Journal of Applied Developmental Psychology*. She coordinates research projects and guides research on personal development, motivation and learning, and academic achievement.

Oscar Garcia is a PhD student in Psychology in the University of Valencia, Spain. His research and writing are focused on methodology themes—robust statistics, power analysis and confidence intervals—, and measurement techniques of personal development, self-esteem and family socialization. He had collaborated with many research projects, specialty with Students engagement in schools: Differentiating and Promoting.

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