

SELF-WORTH, SCHOLASTIC COMPETENCE AND APPROACHES TO LEARNING IN UNIVERSITY STUDENTS

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Abstract

This study seeks to analyse the relationships between students' self-worth, perception of scholastic competence, approaches to learning and academic achievement, with a sample of 224 college students. Self-worth and perceived scholastic competence are evaluated through Self-Perception Profile for College Students: SPPCS and Student's Approaches to Learning through the 2nd version of Inventory of Learning Processes for University Students: IPA-u. Data are subjected to Pearson correlations and a path model, using structural equation modelling, is tested. The results reveal that global self-worth and scholastic competence are positively correlated with deep strategy and academic achievement and negatively with surface strategy. Academic achievement and the self-perception of academic competence are also positively correlated with intrinsic motivation and inversely with instrumental motivation. Nevertheless, a path analysis didn't find any mediation effects and only reveals significant path relations between self-worth and the perception of scholastic competence and of this perception and a deep approach to learning.

Keywords: SAL (student's approaches to learning); higher education; self-esteem; scholastic competence; academic achievement

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Introduction

Students' Approaches to Learning (SAL) refers to the motivation and learning strategies students use to deal with learning tasks (Entwistle, Tait, & McCune, 2000). This integration of learning strategies with different types of motivation to learn represents an important component of students' engagement (Horstmanshof & Zimitat, 2007) and significantly influences school achievement (Diseth, 2013). Previous research has consistently identified two main types of approaches to learning: the surface approach and the deep approach (Entwistle, Tait, & McCune, 2000). A surface approach refers to the integration of an instrumental motivation for learning, which means that the student's goal is to avoid failure, and a surface learning strategy, based on rote memorization. The other identified type, the deep approach, refers to a combination of an intrinsic motivation to learn, with the learner engaged in learning for pleasure, and a deep learning strategy, based on comprehension of contents. A third approach to learning, referred as the achieving approach, combines an achieving motivation (learning with the goal of getting good grades) and a learning strategy based on the management of time and resources, called an organizing strategy. Prior studies show that this achievement approach is less consistent. In fact, this approach or some of its components can be combined with the deep or with the surface approach to learning (e.g., Fox, McManus & Winder, 2001).

Theoretical models about student learning suggest that SAL are influenced by students' personal characteristics, along with learning context, thus influencing the learning products (Biggs, 1999). Additionally, several studies have shown that SAL are related to core individual differences like cognitive style (e.g., Jiyeon & Dongryul, 2015), personality (e.g., Chamberlain, McManus, Brunswick, Rankin, & Riley, 2015) or self-concept (e.g., Platow, Mavor, & Grace, 2013). Although SAL can act on the basis of specific context exigencies, they also can be therefore determined by individual characteristics, being affected by or related to other psychological variables such as personality (Diseth & Kobbeltvedt, 2010) or values (Horstmanshof & Zimitat, 2007). In this sense, they can be seen as a relatively stable ways of coping with the demands of study tasks (Biggs, Kember, & Leung, 2001; Entwistle, 1987).

Furthermore, as already mentioned, there is evidence that academic achievement might be related to students' approaches to learning. In a study

with high school students, Cano (2007) confirmed that, along with intelligence, the deep approach to learning is a good predictor of academic achievement since it correlates with higher grades. Students who orchestrated their study in a surface way presented worse scores in academic achievement. In another study, with third-year university students, Phan (2009) measured, among other variables, the impact of deep and surface processing strategies on academic performance. Through path analysis, the author found that deep processing positively predicted academic achievement while surface processing predicted it negatively. Also in a study with psychology students, Platow, Mayor and Grace (2013) found that students' deep approach to learning was positively related to their marks, while surface approach was not related or was negatively related to this same performance. Nevertheless, some studies also report a null effect of deep or surface approaches on academic performance (e.g., Phan, 2007) which has been explained on the basis of possible misalignments between assessment tasks and learning outcomes (Phan, 2009).

In sum, despite the fact that results of previous research regarding this relationship are not free from some incongruencies (Cano, 2005), in general, lower grades are positively related with the use of a surface approach and deep and achieving approaches are, usually, positively related to higher grades (e.g., Cano, 2005; Cassidy & Eachus, 2000; Diseth, 2007, 2013; Phan, 2009; Watkins, 2001).

Finally, the topic of how individual characteristics predict academic results via approaches to learning has been recently addressed by some studies. For instance, Cano (2005) revealed, through path analysis, that epistemological beliefs influenced academic achievement via students' learning approaches and Diseth (2013) showed, also through path analysis, that personality traits predicted students' approaches to learning, via course experience, therefore predicting academic achievement.

Also an important issue in the research on academic achievement, is its relations with self-esteem and academic self-concept.

According to Harter (2003), global self-worth or self-esteem, concepts that are employed "interchangeably" (p. 612), is a general evaluation of one's perceived worth or value as a person. It is an aspect of the self, being self-conceived as a theory that the individual constructs about him or herself, on the basis of both cognitive factors (e.g., level of cognitive development) and interpersonal factors (e.g., social feedback). Assuming a developmental

perspective, Harter (1999, 2003) emphasizes that the self develops through time and reflects the cognitive abilities and limitations of each development stage. The implied differences in the self-structure as a consequence of normative developmental changes - in structure, content and valence of the self-representations - justify its measurement in different life stages. The global self-evaluation that Harter (1999, 2003) refers to as global self-esteem or self-worth is separate from domain-specific evaluations that reflect the individual's sense of adequacy in specific domains, as scholastic competence, athletic competence or social competence. Nevertheless, despite individual differences, findings across countries consistently identify some domains - as scholastic competence - that are highly correlated with global self-esteem (Harter, 2003).

Harter's conception of self-representations reflecting different domains of competence can be related to self-efficacy and self-concept(s). Bandura (1977) considered self-efficacy as an important factor in both the initiation and persistence of coping behaviours and defined it as "(...) the conviction that one can successfully execute the behaviour required to produce the outcomes" (p. 193). The other self-term aforementioned, self-concept, was considered by Shavelson, Hubner, and Stanton (1976), as the image an individual has about himself or herself, which is considered as multifaceted and hierarchically organized. In the base of hierarchy, there are domain-specific perceptions of the self and in the apex there is a global self-concept. Thus, the relationships of these self-terms with Harter's concept of self-perceptions seems clear. Applying these concepts to the learning processes leads to the conclusion that academic self-efficacy and academic self-concept are particularly relevant for academic performance (e.g., Burnett, Boulton-Lewis, & Campbell, 1996; Burnett & Proctor, 2002; Guay, Marsh, & Boivin, 2003; Marsh & Martin, 2011; Schmeck, 1988; Schunk, 1984).

Considering this framework, academic self-concept can be conceived as a domain-specific perception of the self, referring to the way students feel about themselves as learners (Harter, 1999).

Specifically, meta-analytic research found a significant positive relationship between favourable self-beliefs and academic achievement (e.g., Hansford & Hattie, 1982; Valentine, DuBois, & Cooper, 2004), although the causal relationship between academic self-concept and academic achievement continues to be a critical issue in self-concept research (e.g., Guay, Marsh, & Boivin, 2003; Marsh & Martin, 2011; Pottebaum, Keith, & Ehly, 1986;

Stringer & Heath, 2008; Rezaei, 2012; Trautwein, Lüdtke, Köller, & Baumert, 2006).

Nevertheless, the reviews of studies on the effects of self-concept and self-esteem on subsequent academic achievement found inconclusive results. This may be related to the confusion in self terminology (Harter, 2003) but might also suggest that this relation is mediated by one or more variables (e.g., Baumeister, Campbell, Krueger, & Vohs, 2003; Trautwein, Lüdtke, Köller, & Baumert, 2006; Valentine, DuBois, & Cooper, 2004).

One of the goals of this study is to further explore the relationship between achievement, domain-specific academic self-concept, and self-esteem, considering the hypothesis that students' approaches to learning might include the set of these mediating variables.

Despite the apparent inexistence of studies that relate SAL and Harter's concepts about the self-system, there is some research that relates approaches to learning to self-representations or self-evaluations, according to different theoretical frameworks and to the use of different self-terms.

Considering learning strategies, academic achievement and academic self-concept, McInerney, Cheng, Mok, and Lam (2012) found reciprocal relationships of these variables with each other, appearing that students who were deep learners had enhanced academic achievement in English and Mathematics, with the mediation of academic self-concept of that subject. Nevertheless, the study also revealed that having positive academic self-concepts was associated with increased use of deep learning strategies. Furthermore, still referring to academic self-concept(s), Burnett and Proctor (2002), found that elementary students' school, reading, mathematics and learning self-concepts were negatively correlated with a surface approach to learning, and positively correlated with deep approaches. Also, Platow, Mayor and Grace (2013) showed that a deep learning approach in a subject had a positive impact on this discipline-related self-concept, leading to a greater intent to continue studying in the discipline. Moreover, in a study that used path analysis, Román, Cuestas and Fenollar (2008) found that self-esteem had a positive effect on deep processing and effort, and a negative effect on surface processing.

Previous research (e.g., Abousserie, 1995; Burnett, Boulton-Lewis, & Campbell, 1996; Schmeck, Geisler-Berstein, & Cercy, 1991; Watkins & Hattie, 1990; Watkins, Regmi, & Astilla, 1991) had also described a negative

relationship between the use of a surface approach to learning and a higher academic self-esteem and a positive relationship between the use of a deep approach and self-esteem (e.g., McCarthy & Schmeck, 1988; Schmeck et al., 1991). Schmeck et al. (1991) propose that the use of a deep approach might require a significant amount of self-respect. This can be related with other results suggesting that students with a tendency to use a surface approach to learning also tended to have general feelings of inadequacy and a negative self-assessment of performance (Biggs, 1987, 1990; Entwistle & Ramsden, 1983; Entwistle & Tait, 1990; Entwistle & Wilson, 1977). In contrast, Schmeck (1988) argue that a bigger reserve of unconditional self-respect would be necessary for the student to be free from the fear he or she is not able (surface approach) and free from the need of proving he or she is able (achieving approach) to immerse him/herself in the activities that he or she finds as pleasurable (deep approach). McCarthy and Schmeck (1988) consider that high self-esteem might promote the adoption of an elaborative approach to study (e.g., translation of information in personal terminology; generation of examples from personal experience; applying information to personal life; using visual imagery to encode information).

Additionally, some studies relate achievement motivation to self-perceptions. Thus, McCarthy and Schmeck (1988) suggested that students who are motivated by achievement might behave in a self-affirmative way on the basis of lower self-esteem. As a matter of fact, as Schmeck (1988) notes, these students are dominated by the need to prove that they are capable. Nevertheless, as Watkins (1996) added, other studies found that the achieving approach to learning tends to be related to positive self-esteem and several studies observed a connection between the use of an achieving approach to learning and a more positive self-concept (Biggs, 1987; Watkins & Hattie, 1990; Watkins, Regmi, & Astilla, 1991). Going further, Ramsden and Entwistle (1981) argue that when self-concept is particularly strong, students will tend to combine the achieving approach with the deep approach to learning.

Within a different framework, the one that is centred in self-efficacy concept, the conclusions are similar: Phan (2007) revealed that the deep strategy was found to relate with students' self-efficacy beliefs and Yaratán and Suphî (2012) showed that academic self-efficacy was positively correlated with deep and negatively correlated with surface approaches. In the same vein, Watkins and Hattie (1990) and Watkins, Regmi and Astilla (1991) observed

that the use of a surface approach to learning has a negative relation to a positive self-assessment of performance. The already referred explanation of Schmeck (1988) goes in the same sense of the one of Nisbett and Shucksmith (1986) who stress that the use of riskier learning strategies (as deep learning strategies might be characterized) depends on a feeling of security in relation to the task and an absence of extreme worry about the possibility of error. Summarizing, research reported evidence that self-efficacy is positively related to the use of a meaningful (deep) cognitive strategy (e.g., Biggs, 1987, 1990; Greene & Miller, 1996; Miller, Greene, Montalvo, Ravindran, & Nichols, 1996). Finally, it's relevant to mention that several studies detected a relation between an achieving approach to learning with high levels of self-efficacy (Ramsden, 1979; Watkins & Hattie, 1990; Watkins, Regmi, & Astilla, 1991).

On the whole, despite some contradictory findings, it appears there might be a relevant relationship between self-esteem/self-concept both with students' approaches to learning and academic achievement.

Objectives

This study tries to contribute to a better understanding of the relationship between self-esteem/self-concept both with students' approaches to learning and academic achievement. The present research is centred in a precise theoretical framework of self-terms and aims to explore the possible mediating factor of student's approaches to learning on the impact that students' self-esteem might have on their academic achievement. Most of all, the study tries to enlighten the role, not investigated before, that approaches to learning eventually play in mediating the relationship between self-worth/scholastic competence and academic achievement. So, specifically, the aims of the present study are to investigate:

1. the relationship between university students' global self-worth (SGSW), scholastic competence (SC) and students' approaches to learning (SAL),
2. how SGSW, SC and SAL are related to academic achievement,
3. path relations between self-esteem (SGSW), scholastic competence (SC), students' approaches to learning (SAL) and academic achievement.

Method

Participants

A total of 224 college students of Business and Economics from public universities located in Lisbon, with a mean age of 19.94 and standard deviation of 1.92 participated in this study. The sample was a convenience one and was composed of 120 women (53.6%) and 104 (46.4%) men. All participants were students in their 1st to 3rd year of college.

Instruments

Self-Perception Profile for College Students (SPPCS; Neeman & Harter, 1986) - Global Self-Worth subscale and Scholastic Competence. Considering that, despite the theoretical confusion in the use of “self-terms”, methodologically, the measures of self-beliefs are unambiguous in respect to the specific aspect of self-concept(s) that is being measured (Byrne, 1996), we chose an instrument that clearly assesses the two self- variables involved in this research: global self-worth and scholastic competence. Global Self-Worth and Scholastic Competence were measured with the Self-Perception Profile for College Students (SPPCS) of Neeman and Harter (1986), a questionnaire with 54 items that assesses the self-perceptions of individuals in several specific domains, such as scholastic competence (SC), as well as a more global judgment about individuals’ own self-worth (GSW), a concept similar to self-esteem. In this study, we used the adapted version for Portuguese college students (Barros, 2012) and we only considered items referring to those two subscales - SC and GSW. Students answered using a scale from 1 to 4, where 1 represents a low perception of competence and 4 a high perception of competence. The self-worth scale included six items (e.g., “i.1. Some students like the kind of person they are BUT other students wish that they were different”) and aims to measure the general feelings about the self. Scholastic competence included four items (“i 3. Some students feel confident they are mastering their coursework BUT other students do not feel so confident”) that asks if students feel they are competent in academic work. On a study of the metrical properties of the Portuguese version of SPPCS with a sample of 683 Portuguese University students the Scholastic Competence scale and Self-Worth scale had, respectively, Cronbach alpha coefficients of .70 and .86. Although alpha de Cronbach’s coefficient of the Scholastic Competence scale

is not high, other indicators of internal consistency of the two scales reveal satisfactory psychometric properties, as all items have correlations with total of own scale (total considered if item deleted) higher than .35. Also, if any of the items was deleted, that would lower Cronbach's alpha coefficient of its scale, reassuring the relevance of each item in the scale.

Learning Processes Inventory for University Students (IPA-u; Duarte, 2007). To measure students' approaches to learning, we used a 2nd version of an inventory developed for the Portuguese context - the Inventory of Learning Processes for University Students (IPA-u; Duarte, 2007). The current used version is the 2nd revised version, studied with a sample of 1100 Portuguese University students. From now on, this Inventory will be referred to as IPA-u.v2. This instrument includes 48 items, each measured by a 5-point, Likert-type scale, ranging from 1 (*Never or rarely true to me*) to 5 (*Always or almost always true to me*). Eight factors with eigenvalues higher than 1, accounting for 57.7% of the variance, were found through a 1st order exploratory factorial analysis, followed by a *varimax* rotation. These eight factors correspond to eight scales, addressing: Intrinsic Motivation (alpha = .91; learning with the experience of positive emotions - e.g., "i.37. I take much pleasure from studying."); Deep Strategy (alpha = .88; learning by comprehending, relating information and using critical thinking - e.g., "i.4. I try to relate different contents."); Instrumental Motivation (alpha = .83; learning motivated by extrinsic pressures - e.g., "i.11. I feel I study by obligation."); Organizing Strategy 1 - Time (alpha = .80; use of time management - e.g., "i.10. I try to efficiently organize my study time."); Surface Strategy (alpha = .79; rote learning - e.g., "i.12. I try to learn most contents by memorizing by heart."); Achievement Motivation 1 - Competition (alpha = .79; competition with colleagues - e.g., "i.3. I like to compete with my peers for the best grades."); Achievement Motivation 2 - Grades (alpha = .73; seek high grades - e.g., "i.39. My main incentives to study are the high grades."); and Organizing Strategy 2 - Difficulties (personal management - e.g., "i.32 I have difficulties in organizing my work": inverted item). A 2nd order exploratory factorial analysis, also followed by a *varimax* rotation, permitted us to identify three 2nd order factors with eigenvalues higher than 1, accounting for 64,0 % of the variance, that represent three scales that measure three approaches to learning. Factor 1 - Deep approach (alpha = .92), combines Intrinsic Motivation and Deep Strategy.

Factor 2 - Surface-Achieving Approach, ($\alpha = .84$), groups Instrumental Motivation, Achievement Motivation-Competition, Achievement Motivation-Grades and Surface Strategy Finally, Factor 3 - Organizing Strategy ($\alpha = .80$), associates Organizing Strategy 1 - Time and Organizing Strategy 2 - Management.

Academic Achievement

To evaluate a student's academic achievement, we used the mean grade of each student, considering the results obtained in all subjects.

Procedure and Design

Before the application of the questionnaires, this research project was approved by the Deontological Committee of the authors' institution. Informed consent, confidentiality of the data collected and the voluntary participation of the students were explicitly considered. The administration of both questionnaires took approximately 25 minutes, with the order of presentation of the instruments being the same for all students. The study has a cross-sectional design.

To explore the relationship between university students' global self-worth (SGSW), scholastic competence (SC) and students' approaches to learning (SAL), Pearson correlations were calculated (Table 1). Additionally, to address the relationship of those variables with academic achievement, we only considered students that did not have any missing values, which included the specification of their mean grade. The Pearson correlations between SAL, SW, SC and academic achievement are presented in table 2.

To evaluate a model where self-esteem is an antecedent of academic achievement mediated by scholastic competence and approaches to learning, we tested a path model with measured variables, using structural equation modelling, with software AMOS (v22, An IBM Company, Chicago, IL). This model hypothesized a mediating effect for scholastic competence between self-esteem and the use of approaches to learning (considering the three 2nd order factors that represents SAL, as assessed by IPA-u: the deep approach, organizing strategy and surface-achieving approach) which, in turn, predict academic achievement.

Results and Discussion

The analysis of correlations between global self-worth and students' approaches to learning, strategies and motivations revealed significant positive correlations between global self-worth and organizing strategy and organizing strategy 2 - management ($p < .01$), organizing strategy 1 - time ($p < .05$), deep strategy and deep approach ($p < .05$). It also identified a negative correlation between global self-worth and surface strategy ($p < .05$). Scholastic competence has significant positive correlations with intrinsic motivation, achievement motivation grades, deep approach, deep strategy, organization strategy and organization strategy 1 - time ($p < .01$) and with organizing strategy 2 - management ($p < .05$). Negative correlations are found between scholastic competence and instrumental motivation ($p < .01$) and surface strategy ($p < .05$) (Table 1).

Table 1. Correlations between global self-worth, scholastic competence and student's approaches to learning, strategies and motivations (N=224)

	Global self-worth	Scholastic Competence
Deep approach	.16*	.33**
Surface-Achieving Approach	-.05	-.09
Intrinsic Motivation	.12	.35**
Instrumental Motivation	-.10	-.20**
Achievement Motivation 1- Competition	.06	-.04
Achievement Motivation 2- Grades	.12	.23**
Deep Strategy	.16*	.22**
Surface Strategy	-.13*	-.15*
Organizing Strategy	.21**	.24**
Organizing Strategy 1 - Time	.17*	.20**
Organizing Strategy 2 - Management	.45**	.17*

Note: * $p < .05$; ** $p < .01$

Table 2. Correlations between academic achievement, global self-worth, scholastic competence and student's approaches to learning, strategies and motivations (N=138)

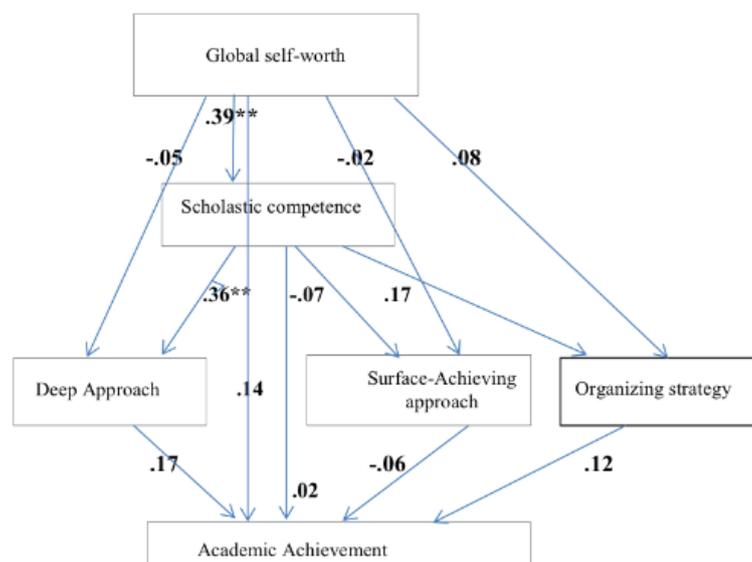
	Academic achievement
Global self-worth	.19*
Scholastic competence	.39**
Deep approach	.21**
Surface-Achieving Approach	-.08
Intrinsic Motivation	.20*
Instrumental Motivation	-.28**
Achievement Motivation 1-Competition	.26**
Achievement Motivation 2-Grades	.13
Deep Strategy	.17*
Surface Strategy	-.10
Organizing Strategy	.20**
Organizing Strategy1-Time	.17*
Organizing Strategy2-Management	.05

Note: * $p < .05$; ** $p < .01$

Table 2 shows correlations between global self-worth, scholastic competence, student approaches to learning, strategies, motivations and academic achievement. Academic achievement is positively correlated with global self-worth, intrinsic motivation, organizing strategy 1 - time and deep strategy and negatively correlated with surface strategy ($p < .05$). At a significance level of $p < .01$, we also find positive correlations with scholastic competence, the deep approach, organizing strategy and achievement motivation and negative correlations with instrumental motivations.

To further explore the relationships between perceptions of self-worth and scholastic competence and student's approaches to learning and academic achievement, and some mediation relations, we hypothesized the model represented by figure 1, considering only the participants for which we had data about their academic achievement ($n=138$). The result, with a $\chi^2(3)=13.36$, $p=.004$, is significant and model fit indicators ($CFI = .80$; $RMSEA= 0.02$) don't support the model. The analysis of the standardized regression weights reveals that the only significant path relationships are found between global self-worth and the perception of scholastic competence (.39, $p < .01$) and between scholastic competence and deep approach (.36, $p < .01$). There is no significant path relations between self-worth or scholastic competence and academic

achievement, and so, mediation relations, based on deep approach, organizing strategy or surface-achieving approach couldn't be expected.



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

Figure 1. Path analysis: Standardized Regression Weights. Self-worth, scholastic competence, SA and academic achievement ($N=138$)

The significant positive correlation between global self-worth, scholastic competence and the deep approach to learning (as well as with the deep strategy) confirms the tendency, found in previous studies (Román et al., 2008; Watkins, 1996), of a relationship between positive self-esteem and such an approach. This result can be interpreted in different ways. First, perhaps the involvement in learning tasks with genuine interest and attempts to comprehend depends on a perception of oneself as fairly competent in learning (as the deep approach is more difficult to implement than a surface approach), that would derive from a self-perception of oneself as someone with global value. Second, it might be that the use of a deep approach to learning, by increasing the probability of better grades, as suggested by results of this study and by

previous documented significant correlation between these two variables (Cano, 2005; Diseth, 2007, 2013; Watkins, 2001), consolidates the perception of the self as competent in learning and therefore (as the participants are college students) as someone with global value.

In opposing terms, the significant negative correlation between global self-worth, scholastic competence and the surface learning strategy points toward academic self-esteem negatively predicting surface processing (Román et al., 2008). Perhaps a more negative global self-image dictates less confidence in the possibility or utility of a higher learning profile, therefore activating a surface strategy as a defensive behaviour.

The significant positive correlation between global self-worth and organizing strategy aligns with results of previous studies (e.g., Watkins, 1996), that found a relationship between positive self-esteem and an achieving approach to learning, which involves such a type of learning strategy. It might be that an organized involvement in learning tasks depends on a higher positive perception of oneself as learner and as a person. It might also be that the use of an organizing strategy, by raising the chance of academic achievement, as suggested by the significant correlation between these two variables, consolidates that positive perception.

Concerning the relationship between global self-worth and academic achievement, results of the path analysis suggest that there isn't a direct effect from global self-worth or scholastic competence to academic achievement. Although the model proposed is not supported by model fit indicators, it seems like it includes two different models within it: one that reveals significant path relations between the perception of global self-worth and the perception of competence as a student, and another one that reveals significant path relations between this perception and the deep approach to learning. Considering these results, this might indicate that self-esteem, even when "articulated" in a domain-specific (e.g., academic) sense of competence (i.e., scholastic competence) doesn't have a direct impact on academic achievement. However, when also taking in account correlations coefficients, we can be hypothesized that generally valuing oneself and having a sense of scholastic competence, could be important elements for a deep learning. Moreover, the significant positive correlation coefficient between the deep approach to learning and academic achievement, found in the current study, replicate a well-documented

relationship that stresses the potential value of that approach for the learning product (Cano, 2005; Diseth, 2007, 2013; Watkins, 2001).

Conclusions and limits of the research

Despite some methodological limitations, the current study allows us to better clarify the relationship between academic achievement and variables that previous research rarely mixed, in the same study: SAL and self-perceptions. Nevertheless, this research is cross-sectional with no experimental control and the path analyses, whereby permitting to clarify some effects and relationships between the abovementioned variables, didn't allow us to conclude about mediation. The use of self-reported measures of approaches to learning and academic achievement could also be mentioned as a limitation of this study.

As a main practical implication, results of present research, revealing positive relations between academic achievement, global self-worth, deep approach and scholastic competence, consolidate a line of thought that suggests the importance of developing students' global self-worth and sense of academic competence and of promoting the use of a deep approach to learning to increase their academic achievement. Overall, results can imply the importance of teachers' valorisation of their students' performances and encouraging of their deep approaches to learning.

Lastly, future research in this area could focus on larger and more diverse samples, with students from different courses and students who are at different points in their education. Furthermore, collecting observational data about the approaches to learning that students use could overcome some limitations due to the use of self-reported measures of SAL. Qualitative methods could also enrich this type of research, permitting us to better understand the meaning of the relationships found in this study.

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Received July 6, 2016
Revision September 12, 2016
Accepted September 23, 2016