Self-handicapping and self-esteem profiles and their relation to achievement goals

María del Mar Ferradás, Carlos Freire*, Susana Rodríguez, and Isabel Piñeiro

Department of Psychology, University of A Coruña, A Coruña (Spain).

Título: Perfiles de self-handicapping y autoestima y su relación con las metas de logro.

Resumen. Perfiles de self-handicapping y autoestima y su relación con las metas de logro

El presente trabajo pretende profundizar en el conocimiento del self-handicapping académico. Dos son los objetivos de este estudio: (a) identificar posibles perfiles de estudiantes a partir de la combinación del self-handicapping (conductual y alegado) y la autoestima; y (b) analizar las diferencias entre estos perfiles en cuanto a sus metas de logro (aprendizaje, aproximación al rendimiento, evitación del rendimiento y evitación del trabajo). Participaron en la investigación 1028 estudiantes universitarios. Para la obtención de los perfiles se realizó un análisis de perfiles latentes. Las diferencias entre perfiles en las metas de logro se analizaron mediante un MANCOVA, tomando como covariables el género y el curso. Se obtuvieron cinco perfiles de estudiantes: BA/ASH (baja autoestima y alto self-handicapping); BA/ASHA (baja autoestima y alto self-handicapping alegado); BA/ASHC (baja autoestima y alto self-handicapping conductual); MA/MSH (moderada autoestima y moderado self-handicapping); y MA/BSH (moderada autoestima y bajo self-handicapping). Estos perfiles se diferenciaron entre sí significativamente en cuanto a sus metas de logro. Los resultados de este trabajo contribuyen a la comprensión de las características motivacionales de los estudiantes self-handicappers. Dado lo disfuncional que resultan estas estrategias, se plantean algunas pautas psicoeducativas dirigidas a la prevención del self-handicapping en el contexto académico.

Palabras clave: self-handicapping conductual; self-handicapping alegado; autoestima; perfiles; metas de logro.

Abstract: The present work seeks to deepen the knowledge of academic self-handicapping. The two objectives of this study were (a) to identify possible profiles of students from the combination of self-handicapping (behavioral and claimed) and self-esteem and (b) to analyze the differences among these profiles in terms of their achievement goals (learning, achievement-approach, achievement-avoidance and work-avoidance). Participants in this study included 1028 university students. To obtain the profiles, a Latent Profile Analysis was conducted. The differences among profiles in the achievement goals were analyzed by means of a MANCOVA, using gender and the course as covariables. Five student profiles were obtained: LSE/HSH (low self-esteem and high self-handicapping), LSE/HCSH (low self-esteem and high claimed self-handicapping), LSE/HBSH (low self-esteem and high behavioral self-handicapping), MSE/MSH (moderate self-esteem and moderate self-handicapping), and MSE/LSH (moderate self-esteem and low self-handicapping). These profiles differed significantly from one another in terms of their achievement goals. The results of this work contribute to the understanding of the motivational characteristics of self-handicapping students. Given how dysfunctional these strategies are, some psychoeducational guidelines aimed at preventing self-handicapping in the academic context are outlined.

Keywords: behavioral self-handicapping, claimed self-handicapping, self-esteem, profiles, achievement goals.

Introduction

Due to its evaluative nature, the academic context can be threatening for many students. Considering that performing below certain achievement standards is an unequivocal symptom of inferiority and incompetence, the fear of failure leads some students to adopt complex strategies that allow them to redefine failure to protect their personal worth (De Castella, Byrne, & Covington, 2013).

Among the various self-protective strategies identified by motivational research, self-handicapping stands out for its strong prevalence in academic settings (Martin & Marsh, 2003). This anticipatory mechanism allows students to develop some excuse, real or imagined, that allows them to externalize the causes of a hypothetical failure, separating it from their personal competence (Midgley & Urdan, 2001). This strategy is functional in the short term by protecting self-esteem and alleviating anxiety (Berglas & Jones, 1978); however, it entails significant damage in the long run, notably affecting academic performance (Schwinger, Wirthwein, Lemmer, & Steinmayr, 2014).

The wide range of potential excuses that can be used for self-defeating purposes has motivated the distinction between behavioral self-handicapping and claimed self-handicapping (Leary & Shepperd, 1986). The first involves some type of direct action (e.g., reduce effort, procrastinate), whereas the second comprises the verbalization of some handicap (e.g., anxiety, fatigue) without necessarily implying an external behavior that compromises achievement (Hirt, Deppe, & Gordon, 1991). From this perspective, behavioral self-handicapping is more maladaptive than claimed self-handicapping, as some studies have demonstrated (Clarke & MacCann, 2016; Ferradás, Freire, Valle, & Núñez, 2016).

Despite its considerable long-term counterparts, the immediate benefits of self-handicapping make it quite difficult for students to be dissuaded from it (Snyder, Higgins, & Stucky, 1983). This has motivated a prolific investigation into the factors in the academic context that may be related to self-handicapping, with achievement goals and self-esteem being the most cited.

Self-handicapping and achievement goals

One of the most productive lines of work in the motivational field focuses on the students' reasons for becoming academically involved. The widely accepted 2x2 model of achievement goals (e.g., Korn & Elliot, 2016) postulates that

* **Correspondence address [Dirección para correspondencia]:**
Carlos Freire. Faculty of Educational Studies, University of A Coruña, Elviña Campus, 15071, A Coruña (Spain).
E-mail: carlos.freire.rodriguez@udc.es

students can adopt learning goals[1] if their objective is to satisfy intrapersonal standards (develop interest, increase personal competence) and performance goals if their priority is comparison with others, either to excel and demonstrate superiority (performance-approach goals) or to avoid poor grades and negative social judgments (performance-avoidance goals).

Although these different types of achievement goals are not mutually exclusive, so that they are compatible in the same student (Inglés, Martínez-Monteagudo, García-Fernández, Valle, & Castejón, 2015), each has different academic implications. Thus, in general terms, the adoption of learning goals has been associated with highly adaptive academic motivation such as intrinsic interest, effort, persistence or deep processing of information (Harackiewicz, Durik, Barron, Linnenbrink-García, & Tauer, 2008; Senko, Hama, & Belmonte, 2013; Wolters, 2004). More controversy has arisen, however, over the performance goals. Thus, performance-approach goals seem to relate positively to effort, self-efficacy or academic performance (Hulleman, Schrager, Bodmann, & Harackiewicz, 2010; Liem, Lau, & Nie, 2008) but negatively with intrinsic interest (Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997). For its part, the adoption of performance-avoidance goals is associated with a pattern of reduction of effort and persistence, high levels of anxiety and low academic achievement (Huang, 2011; Skaalvik, 1997; Van Yperen, Blaga, & Postmes, 2014). However, the concern about preserving one's social image leads students with these types of goals to maintain a certain degree of connection with academic work (Midgley & Urdan, 1995). In addition to this taxonomy, there is evidence that some students lack interest in being involved in tasks (i.e., work-avoidance goals). This kind of motivation is more maladaptive than learning and performance goals because it entails a greater degree of behavioral disaffection with academic work as well as lower achievement and emotional well-being (Harackiewicz et al., 1997; King & McInerney, 2014).

Research on achievement goals and self-handicapping suggests that this strategy is more common among those students with performance goals. However, it is not clear whether the vulnerability to self-handicapping is greater in students with performance-avoidance goals (Akin, 2014; Ntoumanis, Thogersen-Ntoumani, & Smith, 2009), in those who adopt performance-approach goals (Valle et al., 2007), or in those who combine both performance tendencies (Ferradás, Freire, Núñez, Piñeiro, & Rosário, 2017; Midgley & Urdan, 2001). There are also discrepancies between the studies that distinguish between behavioral self-handicapping and claimed self-handicapping. For example, Lovejoy and Durik (2010) suggested that the positive relationship between performance-approach goals and self-handicapping

involves only the behavioral type of self-handicapping, whereas Ferradás et al. (2016) argued that this relationship also encompasses claimed self-handicapping. Likewise, some studies positively relate the work-avoidance goals to self-handicapping (Miki & Yamauchi, 2005; Valle et al., 2007), although this relation may only involve behavioral self-handicapping (Ferradás et al., 2016).

Regarding to learning goals, it appears that they are negatively related to self-handicapping (Akin, 2014; Schwinger et al., 2014), acting as a protective factor against these strategies even in students who also pursue performance goals (Ferradás et al., 2017; Schwinger & Stiensmeier-Pelster, 2011).

Self-handicapping and self-esteem

Self-esteem is a self-reported feeling that reflects the degree to which a person loves, respects and feels competent, valuable and satisfied with himself or herself (González & Tourón, 1992). In the specific case of self-handicapping, the investigations that relate these strategies to self-esteem engendered notable controversies. Because self-handicapping is more common among those individuals who are to some degree unsure of their personal competence (Berglas & Jones, 1978), some studies determined a positive relation between these strategies and low self-esteem (e.g., Chen, Sung, & Wan, 2017; Eronen, Nurmi, & Salmela-Aro, 1998). However, other studies indicated that self-handicapping is more frequent in people with high self-esteem (e.g., Kim, Lee, & Hong, 2012; Rappo, Alesi, & Pepi, 2017), to the extent that this strategy allows safeguarding the personal worth of the individual faced with a hypothetical failure.

The present study

According to the studies reviewed, there does not appear to be a single profile of self-handicappers because both students with low self-esteem and those with high self-esteem are vulnerable to these strategies. However, the studies conducted to date do not allow this question to be empirically determined because they have analyzed the relationship between self-esteem and self-handicapping by adopting a variable-centered approach (classifying the variable self-esteem at several levels). Consequently, the first objective of this study was the identification of differentiated profiles of students from the combination of self-esteem and self-handicapping using a person-centered approach. This approach is more reliable in the motivational reality of the students (Schwinger & Wild, 2012), in this case, of those eager to protect their personal worth by self-handicapping. Based on the reviewed studies that (from a variable-centered approach) have attempted to clarify the relationship between self-esteem and self-handicapping, we expected to find four profiles of self-handicapping students: (a) low self-esteem and high behavioral self-handicapping, (b) low self-esteem and high claimed self-handicapping, (c) high self-esteem and

---

[1] In this paper, the generic term "learning goals" is used to refer to the learning approach goals of the 2x2 model. In this sense, in this study the learning avoidance goals proposed by this model have been excluded (i.e., students whose primary objective is not to lose competences previously acquired), given their scarce empirical diffusion.

high behavioral self-handicapping and (d) high self-esteem and high claimed self-handicapping.

The second objective was to determine whether the identified profiles differ in their achievement goals. This will provide a deeper knowledge about the academic motivations underlying the different groups of self-handicappers observed. Based on the studies that relate self-handicapping to achievement goals, as well as on some studies (e.g., Chen et al., 2017; Gebka, 2014) that negatively relate self-esteem to performance-avoidance goals and positively relate self-esteem to learning and performance-approach goals, our hypotheses were as follows: (a) the two profiles of high self-esteem and high self-handicapping will demonstrate a stronger positive relationship with the performance-approach goals, (b) the two profiles of high self-handicapping and low self-esteem will demonstrate a greater positive relationship with the performance-avoidance goals, (c) the profile that combines low self-esteem and high behavioral self-handicapping will be the most prone to the work-avoidance goals, and (d) the four self-handicapping profiles will be negatively related to the learning goals, there being no significant differences among them.

In this work, we have sought to statistically control for the effect of gender and the course. There is abundant evidence that men resort more than women to behavioral self-handicapping strategies (McCrea, Hirt & Milner, 2008). Likewise, it appears that both types of self-handicapping are used more frequently as university students advance in their studies (Ferradás et al., 2015).

Method

Participants

The study was conducted with students from a Spanish university. Initially, 1087 (6.3%) of the 17,227 students studying at this university were selected through convenience sampling. The initial review of the data matrix indicated that some students did not respond to a sufficient number of items in the questionnaires and were thus eliminated from the study (56 cases, 5.15%). The cases that presented a data loss of less than 20% (27 cases, 2.62%) were replaced using the FIML (full information maximum likelihood) imputation method using the MPlus 7.11 program (Muthén and Muthén, 1998-2012). Three other cases were also eliminated for presenting outliers (Mahalanobis distance method) when exceeding the critical value $\chi^2 = 5.5$ (gl = 7, $p < .001$). Consequently, 1028 students ($M_{age} = 21.36$; $SD_{age} = 3.81$) finally participated in the study. Of these, 69.9% were studying Health Sciences (Nursing, Physiotherapy and Podiatry), and 31.1% were studying Educational Sciences (Early Childhood Education, Primary Education, Social Education and Speech Therapy). Of the students, 37.2% were enrolled in first-year courses, 32.5% in second-year courses, and 30.3% in third-year courses. Regarding gender, 86.3% of the total participants were women.

Instruments

Self-Handicapping Scale

Self-handicapping was evaluated using the Spanish adaptation (Ferradás et al., 2016) of the Self-Handicapping Scale (Martin, 1998). The instrument considers two types of self-handicapping: *behavioral self-handicapping* (e.g., "I tend not to try the tasks so I have an excuse if I do not do as well as I expected") and *claimed self-handicapping* (e.g., "I tell others that I am more exhausted than I really am when I have to do homework or exams, so if I do not do as well as I expected, I can say that's the reason"). The responses of the participants were recorded on a Likert scale (1 = *never* — 5 = *always*). The internal consistency of the scale was adequate in this study: behavioral self-handicapping ($\alpha = .84$) and claimed self-handicapping ($\alpha = .90$).

Rosenberg Self-Esteem Scale

The Spanish-adapted (Martín-Albo, Núñez, Navarro, & Grijalvo, 2007) version of the Rosenberg Self-Esteem Scale (Rosenberg, 1965) was used. This instrument (10 items, e.g., "In general, I am satisfied with myself") demonstrated adequate reliability in our study ($\alpha = .88$). Student responses were measured using a Likert scale (1 = *in total disagreement* — 5 = *totally agree*).

Goal Orientation Scale

The achievement goals were analyzed using the Goal Orientation Scale (Skaalvik, 1997) in its Spanish adaptation (Jover, Navas, & Holgado, 2014). This scale includes four types of goals: *learning* (six items, e.g., "It is important for me to learn new things in class", $\alpha = .79$), *performance-approach* (five items, e.g., "I try to get better grades than my classmates", $\alpha = .85$), *performance-avoidance* (six items, e.g., "When I answer incorrectly in class, what worries me the most is what my classmates think of me", $\alpha = .80$), and *work-avoidance* (four items, e.g., "In class, I prefer to do as little as possible", $\alpha = .76$). The responses of the participants were recorded on a Likert scale (1 = *never* — 5 = *always*).

Design and procedure

In this study, a descriptive and comparative cross-sectional design was conducted. Regarding the procedure, prior to the data collection, the corresponding permits were requested from the university departments. The application of the instruments was conducted in the classrooms in which the students developed their lessons within the academic schedule and in a single session with no time limit. At the beginning of the session, participants were informed of the purposes of the study, the voluntary nature of their participation and the anonymity and confidentiality of the information collected.

Data analysis

To obtain the latent categorical variables (profiles) that allowed the participants to group according to their characteristics of self-handicapping and self-esteem, a Latent Profile Analysis –LPA– was conducted (Lanza, Flaherty, & Collins, 2003). The statistical program Mplus 7.11 (Muthén & Muthén, 1998-2012) was used to consider, from among the set of finite models, which model best fit the data, adding successive latent classes to the target model. The optimal number of classes was determined considering the formal test of the adjusted maximum likelihood ratio of Lo, Mendell, and Rubin (2001) –LMRT–, the Akaike information criterion (AIC), the Schwarz Bayesian information criterion (BIC), the BIC adjusted for the sample size (SSA-BIC) and the value of the entropy.

The p value associated with the LMRT indicates whether the solution with more ($p < 0.05$) or fewer classes ($p > 0.05$) best fit the data. The AIC, BIC and SSA-BIC indices have a descriptive character, with the lowest values indicating a better fit of the model. These criteria should complement the information provided by the LMRT but in no case should replace it, the latter being the final arbiter. Likewise, classes that contained less than 1% of the sample were considered spurious, a condition indicative of an excessive extraction of

profiles (Hipp & Bauer, 2006). Finally, to evaluate the suitability of the potentially selectable model, using a MANOVA, the differences between the classes were analyzed with regard to the variables that were used to form them (self-esteem, behavioral self-handicapping and claimed self-handicapping). The effect size of these differences was determined by Cohen's *d*.

The relationship between the profiles of self-esteem and self-handicapping (latent classes, taken as independent variables) and achievement goals (dependent variables) was analyzed by means of a MANCOVA. As covariates, the gender and the course were incorporated into the model. The effect size was determined by the partial eta squared and Cohen's *d*: small effect, between $\eta_p^2 = 0.01$ and $\eta_p^2 = 0.059$ ($d = 0.20$); medium, between $\eta_p^2 = 0.059$ and $\eta_p^2 = 0.138$ ($d = 0.50$); and large, when $\eta_p^2 \geq 0.138$ ($d = 0.80$).

Results

Table 1 provides the descriptive statistics of the variables and the Pearson correlations. The asymmetry and kurtosis of the variables indicate that all of them presented normal distributions (see Finney & DiStefano, 2006).

Table 1. Matrix of correlations and descriptive statistics of the variables.

	1	2	3	4	5	6	7
1. BSH	—						
2. CSH	.64**	—					
3. SE	-.20**	-.16**	—				
4. LG	-.31**	-.31**	-.12**	—			
5. PApG	.09*	.09**	-.46**	-.19**	—		
6. PAvG	.21**	.22**	-.22**	-.37**	.56**	—	
7. WAG	.14**	-.02	.54**	-.52**	-.18**	.15**	—
M	2.04	1.94	3.41	3.24	3.30	3.24	2.70
SD	0.77	0.76	0.52	1.00	0.93	0.87	0.99
Asymmetry	0.96	0.88	-0.39	-0.45	-0.51	-0.60	0.18
Kurtosis	-0.05	-0.27	-1.42	-0.65	-0.71	0.05	-1.00

Note. BSH = Behavioral self-handicapping; CSH = Claimed self-handicapping; SE = Self-esteem; LG = Learning Goals; PApG = Performance-Approach Goals; PAvG = Performance-Avoidance Goals; WAG = Work-Avoidance Goals;
*$p < .01$; **$p < .001$

Self-handicapping and self-esteem profiles

Several models of latent profiles have been adjusted to the data (models from two to six classes). Model fit stopped at six classes because a non-significant LMRT was obtained (LMRT = 387.103; $p > .05$). In addition, the LMRT indicated that the five-class model provided a better fit than the four-class model (LMRT = 838.482, $p < .001$; $\text{AIC}_{M4} > \text{AIC}_{M5}$; $\text{BIC}_{M4} > \text{BIC}_{M5}$; $\text{SSA-BIC}_{M4} > \text{SSA-BIC}_{M5}$). The five-class model contains no class with a sample size of less than 1% and has higher entropy than the four-class model (entropy = .989).

Table 2 reports the accuracy of the classification in each class as well as the number of students in each of the five classes of the chosen model, both in absolute (*n*) and relative (%) terms. Two classes contained the majority of participants: Class 1 (54.67%) and Class 4 (32.88%). The other three classes contained less than 10%. The accuracy with which the subjects were classified within the classes (see diagonal of Table 2) was quite high, with values of 100% (Class 1) or quite close to this percentage (Classes 2 to 5).

Table 2. Characterization of the latent classes and accuracy of the classification of the individuals in each class.

|	1	2	3	4	5	*n*
Class 1	1.000	.000	.000	.000	.000	562
Class 2	.000	.975	.000	.024	.001	60
Class 3	.000	.000	.988	.012	.000	33
Class 4	.005	.008	.001	.987	.000	338
Class 5	.000	.000	.000	.010	.990	35

Finally, statistically significant differences that were large in magnitude were observed among the five classes in the three variables that composed the profiles: self-esteem ($F[4,1023] = 59.206$; $p < .001$; $\eta_p^2 = 0.188$), behavioral self-handicapping ($F[4,1023] = 1751.689$; $p < .001$; $\eta_p^2 = 0.873$); and claimed self-handicapping ($F[4,1023] = 2490.892$; $p < .001$; $\eta_p^2 = 0.907$).

The mean performances of the subjects (direct and standardized scores) belonging to the latent classes of the chosen model are presented in Table 3. Figure 1 presents the graphic representation of these profiles, using the standardized scores as a reference.

Table 3. Means, standard errors and confidence intervals of the solution of latent classes

			95% Confidence interval	
	M	*S.E.*	Lower limit	Upper limit
Class 1 (MSE/LSH)				
SE	3.48 (0.12)	0.021	3.44	3.52
BSH	1.48 (-0.74)	0.008	1.46	1.50
CSH	1.36 (-0.75)	0.007	1.34	1.38
Class 2 (LSE/HSH)				
SE	2.85 (-1.11)	0.062	2.72	2.96
BSH	3.51 (1.94)	0.044	3.46	3.60
CSH	3.47 (2.03)	0.079	3.43	3.54
Class 3 (LSE/HCSH)				
SE	2.86 (-1.07)	0.068	2.70	3.02
BSH	1.58 (-0.60)	0.048	1.49	1.68
CSH	3.65 (2.24)	0.050	3.57	3.73
Class 4 (MSE/MSH)				
SE	3.53 (0.23)	0.026	3.48	3.58
BSH	2.58 (0.70)	0.029	2.55	2.61
CSH	2.50 (0.74)	0.018	2.48	2.53
Class 5 (LSE/HBSH)				
SE	2.76 (-1.25)	0.029	2.61	2.92
BSH	3.84 (2.34)	0.055	3.74	3.93
CSH	1.41 (-0.69)	0.036	1.34	1.49

Note. Class 1 (moderate self-esteem/low self-handicapping); Class 2 (low self-esteem/high self-handicapping); Class 3 (low self-esteem/high claimed self-handicapping); Class 4 (moderate self-esteem/moderate self-handicapping); Class 5 (low self-esteem/high behavioral self-handicapping); SE = Self-esteem; BSH = Behavioral self-handicapping; CSH = Claimed self-handicapping. Parentheses indicate standardized mean scores (z).
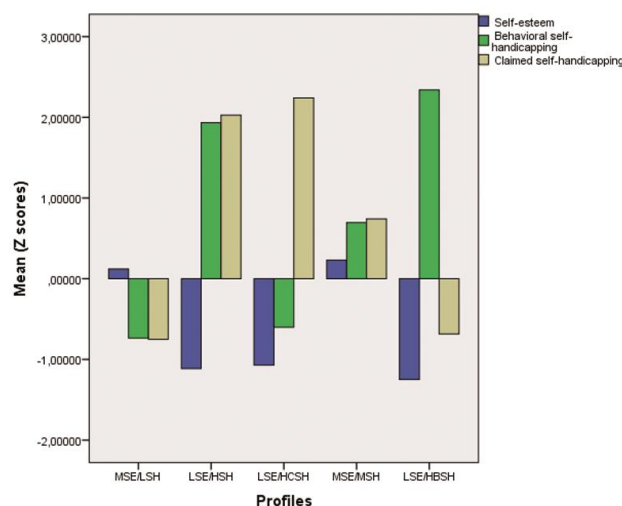
Figure 1. Graphic representation of self-esteem and self-handicapping profiles (*Z* scores).

Note. MSE/LSH = moderate self-esteem/low self-handicapping; LSE/HSH = low self-esteem/high self-handicapping; LSE/HCSH = low self-esteem/high claimed self-handicapping; MSE/MSH = moderate self-esteem/moderate self-handicapping; LSE/HBSH = low self-esteem/high behavioral self-handicapping.

In general, the two most quantitatively represented profiles (Classes 1 and 4) demonstrate moderately high self-esteem, differing from each other in self-handicapping levels. Thus, the subjects of Class 1 have low levels of behavioral and claimed self-handicapping (*MSE/LSH profile*), whereas the participants in Class 4 demonstrate moderate scores in both types of self-handicapping (*MSE/MSH profile*). The remaining three classes demonstrated low levels of self-esteem combined with a high use of self-handicapping, either behavioral only (Class 5: *LSE/HBSH profile*), claimed (Class 3: *LSE/HCSH profile*) or a combination of both (Class 2: *LSE/HSH profile*).

Relationship between self-esteem and self-handicapping profiles and achievement goals

With regard to the differences among the profiles in the achievement goals, once the effects of gender and the course were controlled for, MANCOVA results indicated the existence of statistically significant differences ($\lambda_{Wilks} = .502$, $F[4,1023] = 49.127$, $p < .001$, $\eta_p^2 = 0.158$) with a large effect size. The effect of the two covariates was also statistically significant: gender ($F[4,1027] = 2.529$, $p = 0.039$, $\eta_p^2 = 0.010$) and course ($F[4,1027] = 3.035$, $p = .017$, $\eta_p^2 = 0.012$).

Statistically significant differences were also observed between the profiles of self-esteem and self-handicapping in the four achievement goals (see Table 4): learning ($F[4,1023] = 124.412$, $p < .001$, $\eta_p^2 = 0.328$), performance-approach ($F[4,1023] = 18.723$, $p < .001$, $\eta_p^2 = 0.068$), performance-avoidance ($F[4,1023] = 41.634$, $p < .001$, $\eta_p^2 = 0.140$), and work-avoidance ($F[4,1023] = 15.762$, $p < .001$, $\eta_p^2 = 0.058$). The effect size was large in learning goals and performance-avoidance goals and medium in performance-approach goals and work-avoidance goals.

Table 4. Averages and standard deviations obtained for the profiles in the four achievement goals, together with the univariate tests for each of them.

	Learning goals		Performance- approach goals		Performance- avoidance goals		Work-avoidance goals	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Group MSE/LSH	3.45	0.80	3.26	0.96	3.11	0.27	2.66	0.99
Group LSE/HSH	1.80	0.71	3.87	0.40	4.05	0.39	3.00	1.07
Group LSE/HCSH	1.71	0.59	4.04	0.33	4.17	0.33	1.72	0.76
Group MSE/MSH	3.48	0.92	3.14	0.93	3.14	0.82	2.71	0.91
Group LSE/HBSH	1.58	0.33	3.94	0.46	4.10	0.59	3.53	1.04
$F_{(4,1023)}$	124.412		18.723		41.634		15.762	
η_p^2	0.328		0.068		0.140		0.058	

Note. MSE/LSH = moderate self-esteem/low self-handicapping; LSE/HSH = low self-esteem/high self-handicapping; LSE/HCSH = low self-esteem/high claimed self-handicapping; MSE/MSH = moderate self-esteem/moderate self-handicapping; LSE/HBSH = low self-esteem/high behavioral self-handicapping; Effect size (η_p^2): small effect (< 0.059), medium effect (≥ 0.059 and < 0.138), large effect (≥ 0.138).

Table 5 presents the effect sizes of the differences among the five profiles in the four goals. In the learning goals, the post hoc contrasts revealed that the two groups that had moderately high self-esteem (MSE/LSH and MSE/MSH) adopted this goal significantly more often than did the other profiles. The effect size is large in all cases ($d \geq 1.99$). In both performance goals, the profiles with low self-esteem and high self-handicapping (LSE/HBSH, LSE/HCSH, and LSE/HSH) scored significantly higher than profiles with moderate self-esteem and low/medium self-handicapping (MSE/LSH) and MSE/MSH). The differences between groups oscillated between medium and large in the performance-approach goals ($d = 0.68$ - $d = 0.99$), whereas in the performance-avoidance goals, these differences were large in all comparisons ($d = 1.12$ - $d = 1.30$).

Regarding work-avoidance goals, post hoc contrasts indicated that profiles with high behavioral self-handicapping (LSE/HBSH and LSE/HSH) scored significantly higher in this goal. In the LSE/HBSH profile, the differences between groups were statistically significant in all cases and large in magnitude ($d \geq 0.84$). In the LSE/HSH profile, the differences were only statistically significant with regard to the LSE/HCSH group (large effect size: $d = 1.33$). In fact, the LSE/HCSH profile obtained the lowest scores in this achievement goal, differing widely ($d \geq 0.98$) from the other four profiles.

Table 5. Effect size (Cohen's *d*) of the differences among classes in the four achievement goals.

	Achievement goals			
	Learning[a]	Performance-approach[b]	Performance- avoidance[c]	Work- avoidance[d]
Class 1−Class 2	1.99	0.68	1.15	0.36
Class 1−Class 3	2.11	0.86	1.30	0.98
Class 1−Class 4	0.04	0.13	0.04	0.05
Class 1−Class 5	2.28	0.76	1.21	0.90
Class 2−Class 3	0.11	0.19	0.15	1.33
Class 2−Class 4	2.04	0.80	1.12	0.31
Class 2−Class 5	0.28	0.08	0.06	0.54
Class 3−Class 4	2.20	0.99	1.26	1.03
Class 3−Class 5	0.17	0.11	0.09	1.88
Class 4−Class 5	2.32	0.88	1.17	0.85
Non-significant comparisons (Games-Howell)	[a,b,c]1-4; 2-3; 2-5; 3-5 [d]1-2; 1-4; 2-4; 2-5			

Note. Class 1 (moderate self-esteem/low self-handicapping); Class 2 (low self-esteem/high self-handicapping); Class 3 (low self-esteem/high claimed self-handicapping); Class 4 (moderate self-esteem/moderate self-handicapping); Class 5 (low self-esteem/high behavioral self-handicapping). Effect size (Cohen's *d*): small effect (< 0.50), medium effect (≥ 0.50 and < 0.80), large effect (≥ 0.80).

Discussion and conclusions

One of the main contributions of this study is the adoption of a person-centered approach to analyze the relationship between self-esteem and self-handicapping, an unpublished approach to date. The results obtained identified four profiles of self-handicappers: three with low self-esteem and one with moderately high self-esteem. The latter, the most numerous (nearly 33% of the students), was characterized by a moderate use of self-handicapping (behavioral and

claimed). Regarding self-handicap profiles with low self-esteem, we identified a small percentage of students (just over 3%) with low self-esteem and high use of behavioral self-handicapping, another similar percentage of students with low self-esteem and high claimed self-handicapping, and a somewhat larger number of students (nearly 6%) with low self-esteem and a high utilization of both types of self-handicapping. To these four profiles was added a fifth, composing more than half of the sample, which presents moderate self-esteem and a scarce use of self-handicapping.

These results appear to support those obtained by other works that, by adopting a variable-centered approach, link self-handicapping with both high self-esteem (Kim et al., 2012; Rappo et al., 2017) and low self-esteem (Chen et al., 2017; Eronen et al., 1998). Our findings also deepen the understanding of the relationship between self-esteem and self-handicapping, to the extent that they suggest that the use of these strategies (whether behavioral, claimed, or both) is greater in profiles of students with low self-esteem, whereas in those with high self-esteem (at least, moderate), the use of self-handicapping is more modest.

However, our results did not allow us to determine the reasons that led students with low self-esteem and moderately high self-esteem to use self-handicapping, nor did these results explain why some students with moderately high self-esteem were self-handicappers (MSE/MSH profile) and others were not (MSE/LSH profile). Some studies (e.g., Tice, 1991) suggested that people with low self-esteem use self-handicapping to protect their self-esteem, whereas those with high self-esteem use self-handicapping to enhance self-esteem. Although the instruments applied in this work were not able to determine it, it cannot be ruled out that, unlike the students of the MSE/LSH profile, the self-esteem of the students of the MSE/MSH group is characterized by its instability (i.e., high at times and low at others), a characteristic that accentuates the tendency to self-handicapping (Newman & Wadas, 1997). These tentative explanations should be analyzed with more rigor in future studies.

In addition, the results of this study indicate that the profiles identified differ in the achievement goals adopted. It appears that the performance goals are the primary leitmotif of the three student profiles that most use self-handicapping (LSE/HSH, LSE/HBSH, and LSE/HCSH). Thus, these students, who are insecure about themselves (i.e., low self-esteem), face academic tasks with the double desire to demonstrate competence (performance-approach) and hide their limitations (performance-avoidance), using self-handicapping (behavioral, claimed or both) as a strategic alibi. This finding is consistent with the findings of other studies that, adopting a variable-centered approach, relate self-handicapping to both performance tendencies (Ferradás et al., 2017; Midgley & Urdan, 2001) rather than only one (e.g., Akin, 2014; Valle et al., 2007).

Conversely, the two profiles that demonstrate higher self-esteem and less self-handicapping (MSE/LSH and MSE/MSH) represent the students who are the most in-

clined to adopt learning goals. This finding offers a double interpretation. On the one hand, consistent with previous research (e.g., Chen et al., 2017; Gebka, 2014), it appears that self-esteem, even at moderately high levels, is positively related to an interest in learning and vice versa; this interest decreases when self-esteem is low. Conversely, the moderate use of self-handicapping does not appear to diminish the students' interest in adopting learning goals. However, the high use of self-handicapping (profiles LSE/HSH, LSE/HBSH, and LSE/HCSH) leads to a significant decrease in the desire to learn, a fact that confirms the negative relationship between self-handicapping and learning goals evidenced by other works (Akin, 2014; Schwinger et al., 2014).

Finally, along the lines suggested by Ferradás et al. (2016), it is necessary to consider that the two profiles that stand out for the high utilization of behavioral self-handicapping (LSE/HBSH and LSE/HSH) are those that significantly adopt work-avoidance goals. These data confirm the importance of differentiating between claimed self-handicapping and behavioral self-handicapping (e.g., Clarke & MacCann, 2016) because the high use of the latter (either exclusively or in combination with the claimed self-handicapping) entails more dysfunctional achievement motivations in the academic context (King & McInerney, 2014).

Overall, the results obtained contribute to the understanding of academic self-handicapping. Our study allows the identification of unpublished profiles of self-handicapping students with low and moderately high self-esteem and their respective achievement goals.

These findings have important psychoeducational implications. Although self-handicapping appears to yield substantial short-term benefits for the student, its habitual use entails significant academic losses (Schwinger et al., 2014). Therefore, it is necessary to promote learning contexts that reduce the need to adopt these strategies. Assuming that anxiety and low perception of control increase vulnerability to self-handicapping (Cano, Martin, Ginns, & Berbén, 2017; Stewart & De George-Walker, 2014), teachers can reduce the incidence of these factors by providing clear, contingent and consistent feedback on students' academic performance (Martin, Nejad, Colmar, Liem, & Collie, 2015). It would also be wise for teachers to promote learning environments that encourage students to trust in their own abilities and focus on personal improvement objectives, which would improve their self-determined motivation (Méndez-Giménez, Cecchini, Méndez-Alonso, Prieto, & Fernández-Río, 2018) and their academic involvement (Miñano, Gilar, & Castejón, 2012).

The contributions of this work, however, should be considered in light of the limitations of the study conducted and for its implications for future research. First, the correlational and cross-sectional nature of the proposed design does not allow causality relations to be inferred among the variables of the study. Therefore, it would be interesting if future studies adopted experimental designs that would allow the

directionality of this relationship to be clarified. Second, the analyzed sample only includes students in educational and health fields, which restricts the generalizing of the results to the entire university population. Third, with respect to gender, there is a clear preponderance of female students (86.3%) among the participants of the present study. Although we have attempted to statistically control for the possible effect of gender by adopting it as a covariate, our results indicate that this variable had a statistically significant effect (medium effect size). Thus, another possible line of future research should be directed toward the study of the differences between women and men in the relationship between the profiles of self-handicapping and self-esteem and the adoption of achievement goals. This issue may be particularly important if one considers the solid evidence supporting gender differences in the use of self-handicapping (e.g., Ferradás et al., 2016; McCrea et al., 2008). Fourth, the data were collected using self-report instruments. Assuming the possibility that some students were unaware that they used self-handicapping strategies or were not willing to acknowledge their use (Martin, 2010), the results obtained from these instruments may be partially biased. Therefore, a more rigorous characterization of the motivational reality of the participants requires complementary evaluation tests such as in-depth interviews or classroom observation. This would also allow, for example, the analysis of differences in the use of self-handicapping depending on the task or subject, a relevant issue considering the high situational specificity of this strategy (Schwinger, 2013). Fifth, this study did not examine other achievement goals that are not strictly academic, such as the students' desire to adapt socially and integrate with their peers (Esteban, Bernardo, Tuero, Cerezo, & Núñez, 2016). This complementarity between academic and extra-curricular goals would allow a more precise definition of student achievement behaviors (Wentzel, 2001), in this case, of the different profiles of self-handicappers with low and moderately high self-esteem identified in this work.

Finally, in the same manner in which the achievement goals considered in this study are not the only ones that can be adopted by students, self-handicapping is not the only strategy used for self-protection purposes (Martin, 2010). Therefore, it is possible that the profiles of identified self-handicappers may combine these self-defensive strategies with others such as defensive pessimism or helplessness, which could expand the spectrum of student profiles that, regardless of their self-esteem level, prioritize the protection of their personal worth. Future research should consider this question.

References

Akin, U. (2014). 2x2 achievement goal orientations and self-handicapping. *Ceskoslovenska Psichologie, 58*(5), 431-441.

Berglas, S., & Jones, E. (1978). Drug choice as a self-handicapping strategy in response to noncontingent success. *Journal of Personality and Social Psychology, 36*(4), 405-417. doi:10.1037/0022-3514.36.4.405

Cano, F., Martin, A. J., Ginns, P., & Berbén, A. B. G. (2017). Students´ self-worth protection and approaches to learning in higher education: Predictors and consequences. *Higher Education.* doi:10.1007/s10734-017-0215-0

Chen, Z., Sung, K., & Wang, K. (2017). Self-esteem, achievement goals, and self-handicapping in college physical education. *Psychological Reports.* doi:10.1177/0033294117735333

Clarke, I. E., & MacCann, C. (2016). Internal and external aspects of self-handicapping reflect the distinction between motivations and behaviours: Evidence from the Self-handicapping Scale. *Personality and Individual Differences, 100*, 6-11. doi:10.1016/j.paid.2016.03.080

De Castella, K., Byrne, D., & Covington, M. V. (2013). Unmotivated or motivated to fail? A cross-cultural study of achievement motivation, fear of failure, and student disengagement. *Journal of Educational Psychology, 105*(3), 861-880. doi:10.1037/a0032464

Eronen, S., Nurmi, J., & Salmela-Aro, K. (1998). Optimistic, defensive pessimistic, impulsive, and self-handicapping strategies in university environments. *Learning and Instruction, 8*(2), 159-177. doi:10.1016/S0959-4752(97)00015-7

Esteban, M., Bernardo, A. B., Tuero, E., Cerezo, R., & Núñez, J. C. (2016). El contexto sí importa: identificación de relaciones entre el abandono de titulación y variables contextuales [The context does matter: Relationship between abandoning a university degree and contextual variables]. *European Journal of Education and Psychology, 9*(2), 79-88. doi:10.1016/j.ejeps.2015.06.001

Ferradás, M. M., Freire, C., Núñez, J. C., Piñeiro, I., & Rosário, P. (2017). Motivational profiles in university students. Its relationship with self-handicapping and defensive pessimism strategies. *Learning and Individual Differences, 56*, 128-135. doi:10.1016/j.lindif.2016.10.018

Ferradás, M. M., Freire, C., Regueiro, B., Piñeiro, I., Rodríguez, S., & Valle, A. (2015). Estrategias de self-handicapping en estudiantes universitarios. Diferencias entre cursos [Self-handicapping strategies in university students. Differences between courses]. *Revista de Estudios e Investigación en Psicología y Educación, Extr. 1*, 63-66. doi:10.17979/reipe.2015.0.01.345

Ferradás, M. M., Freire, C., Valle, A., & Núñez, J. C. (2016). Academic goals and self-handicapping strategies in university students. *Spanish Journal of Psychology, 19*. doi:10.1017/sjp.2016.25

Finney, S. J., & DiStefano, C. (2006). Non-normal and categorical data in structural equation modelling. In G. R. Hancock & R. O. Mueller (Eds.), *Structural equation modelling. A second course* (pp. 269-314). Greenwich, CT: Information Age Publishing.

Gębka, B. (2014). Psychological determinants of university students´ academic performance: An empirical study. *Journal of Further and Higher Education, 38*(6), 813-837. doi:10.1080/0309877X.2013.765945

González, M. C., & Tourón, J. (1992). *Autoconcepto y rendimiento académico. Sus implicaciones en la motivación y en la autorregulación del aprendizaje [Self-concept and academic performance. Its implications for motivation and self-regulated learning].* Pamplona: EUNSA.

Harackiewicz, J. M., Barron, K. E., Carter, S. M., Lehto, A. T., & Elliot, A. J. (1997). Predictors and consequences of achievement goals in the college classroom: Maintaining interest and making the grade. *Journal of Personality and Social Psychology, 73*(6), 1284-1295. doi:10.1037/0022-3514.73.6.1284

Harackiewicz, J. M., Durik, A. M., Barron, K. E., Linnenbrink-Garcia, L., & Tauer, J. M. (2008). The role of achievement goals in the development of interest: Reciprocal relations between achievement goals, interest, and performance. *Journal of Educational Psychology, 100*(1), 105-122. doi: 10.1037/0022-0663.100.1.105

Huang, C. (2011). Achievement goals and achievement emotions: A Meta-analysis. *Educational Psychology Review 23*(3), 359-388. doi:10.1007/s10648-011-9155-x

Hulleman, C. S., Schrager, S. M., Bodmann, S. M., & Harackiewicz, J. M. (2010). A meta-analytic review of achievement goal measures: Different labels for the same constructs or different constructs with similar labels? *Psychological Bulletin, 136*(3), 422-449. doi:10.1037/a0018947

Hipp J. R., & Bauer D. J. (2006). Local solutions in the estimation of growth mixture models. *Psychological Methods, 11*(1), 36–53. doi:10.1037/1082-989X.11.1.36

Hirt, E. R., Deppe, R. K., & Gordon, L. J. (1991). Self-reported versus behavioral self-handicapping: Empirical evidence for a theoretical distinction. *Journal of Personality and Social Psychology, 61*(6), 981-991. doi:10.1037/0022-3514.61.6.981

Inglés, C. J., Martínez-Monteagudo, M. C., García-Fernández, J. M., Valle, A., & Castejón, J. L. (2015). Goal orientation profiles and self-concept of secondary school students. *Revista de Psicodidáctica, 20*(1), 99-116. doi:10.1387/RevPsicodidact.10023

Jover, I., Navas, L., & Holgado, F. P. (2014). Goal orientations in the students of the Education Faculty of Alicante. *International Journal of Developmental and Educational Psychology, 1*(2), 575-584.

Kim, H., Lee, K., & Hong, Y. (2012). Claiming the validity of negative in-group stereotypes when foreseeing a challenge: A self-handicapping account. *Self and Identity, 11*(3), 285-303. doi:10.1080/15298868.2011.561560

King, R. B., & McInerney, D. M. (2014). The work avoidance goal construct: Examining its structure, antecedents, and consequences. *Contemporary Educational Psychology, 39*, 42-58. doi:10.1016/j.cedpsych.2013.12.002

Korn, R. M., & Elliot, A. J. (2016). The 2x2 standpoints model of achievement goals. *Frontiers in Psychology, 7*, 742. doi:10.3389/fpsyg.2016.00742

Lanza, S. T., Flaherty, B. P., & Collins, L. M. (2003). Latent class and latent transition analysis. En J. A. Schinka, & W. F. Velicer (Eds.), *Handbook of Psychology: Research Methods in Psychology* (pp. 663-685). Hoboken, NJ: Wiley.

Leary, M. R., & Shepperd, J. A. (1986). Behavioral self-handicapping vs. self-reported handicaps: A conceptual note. *Journal of Personality and Social Psychology, 51*(6), 1265-1268. doi:10.1037/0022-3514.51.6.1265

Liem, A. D., Lau, S., & Nie, Y. (2008). The role of self-efficacy, task value, and achievement goals in predicting learning strategies, task disengagement, peer relationship, and achievement outcome. *Contemporary Educational Psychology, 33*(4), 486-512. doi:10.1016/j.cedpsych.2007.08.001

Lo, Y., Mendell, N. R., & Rubin, D. B. (2001). Testing the number of components in a normal mixture. *Biometrika, 88*, 767-778.

Lovejoy, C. M., & Durik, A. M. (2010). Self-handicapping: The interplay between self-set and assigned achievement goals. *Motivation and Emotion, 34*, 242-252. doi:10.1007/s11031-010-9179-4

Martin, A. J. (1998). *Self-handicapping and defensive pessimism: Predictors and consequences from a self-worth motivation perspective* (Doctoral thesis, Western Sidney). Accessed from http://researchdirect.westernsydney.edu.au/islandora/object/uws:587

Martin, A. J. (2010). *Building classroom success: Eliminating academic fear and failure.* Sydney: Bloomsbury Publishing.

Martin, A. J., & Marsh, H. W. (2003) Fear of failure: Friend or foe? *Australian Psychologist, 38*(1), 31-38. doi:10.1080/00050060310001706997

Martin, A. J., Nejad, H. G., Colmar, S., Liem, G. A. D., & Collie, R. (2015). The role of adaptability in promoting control and reducing failure dynamics: A mediation model. *Learning and Individual Differences, 38*, 36-43. doi:10.1016/j.lindif.2015.02.004

Martín-Albo, J., Núñez, J. L., Navarro, J. G., & Grijalvo, F. (2007). The Rosenberg Self-Esteem Scale: Translation and validation in university students. *Spanish Journal of Psychology, 10*(2), 458-467. doi:10.1017/S1138741600006727

McCrea, S. M., Hirt, E. R., & Milner, B. J. (2008). She works hard for the money: Valuing effort underlies gender differences in behavioral self-handicapping. *Journal of Experimental Social Psychology, 44*(2), 292-311. doi:10.1016/j.jesp.2007.05.006

Méndez-Giménez, A., Cecchini, J. A., Méndez-Alonso, D., & Prieto, J. A., & Fernández-Río, J. (2018). Efecto de las metas de logro y las estructuras de metas de clase 3x2 en la motivación autodeterminada: un análisis multinivel en educación secundaria [Effect of 3x2 achievement goals and classroom goal structures on self-determined motivation: A multilevel analysis in secondary education]. *Anales de Psicología, 34*(1), 52-62. doi:10.6018/analesps.29.3.178511

Midgley, C., & Urdan, T. C. (1995). Predictors of middle-school students´ use of self-handicapping strategies. *Journal of Early Adolescence, 15*(4), 389-411. doi:10.1177/0272431695015004001

Midgley, C., & Urdan, T. C. (2001). Academic self-handicapping and achievement goals: A further examination. *Contemporary Educational Psychology, 26*(1), 61-75. doi:10.1006/ceps.2000.1041

Miki, K., & Yamauchi, H. (2005). Perceptions of classroom goal structures, personal achievement goal orientations, and learning strategies. *Shinrigaku Kenkyu: Japanese Journal of Psychology, 76*(3), 260-268. doi:10.4992/jjpsy.76.260

Miñano, P., Gilar, R., & Castejón, J. L. (2012). A structural model of cognitive-motivational variables as explanatory factors of academic achievement in Spanish Language and Mathematics. *Anales de Psicología, 28*(1), 45-54.

Muthén, L. K., & Muthén, B. O. (1998–2012). *Mplus user's guide* (6th ed.). Los Angeles, CA: Muthén & Muthén.

Newman, L. S., & Wadas, R. F. (1997). When the stakes are higher: Self-esteem instability and self-handicapping. *Journal of Social Behavior and Personality, 12*(1), 217–232.

Ntoumanis, N., Thogersen-Ntoumani, C., & Smith, A. (2009). Achievement goals, self-handicapping and performance: A 2x2 achievement goal perspective. *Journal of Sports Sciences, 27*(13), 1471-1482. doi:10.1080/02640410903150459

Rappo, G., Alesi, M., & Pepi, A. (2017). The effects of school anxiety on self-esteem and self-handicapping in pupils attending primary school. *European Journal of Developmental Psychology, 14*(4), 465-476. doi:10.1080/17405629.2016.1239578

Rosenberg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ: Princeton University.

Senko, C., Hama, H., & Belmonte, K. (2013). Achievement goals, study strategies, and achievement: A test of the "learning agenda" framework. *Learning and Individual Differences, 24*, 1-10. doi:10.1016/j.lindif.2012.11.003

Schwinger, M. (2013). Structure of academic self-handicapping - Global or domain-specific construct? *Learning and Individual Differences, 27*, 134-143. doi:10.1016/j.lindif.2013.07.009

Schwinger, M., & Stiensmeier-Pelster, J. (2011). Prevention of self-handicapping - The protective function of mastery goals. *Learning and Individual Differences, 21*(6), 699-709. doi:10.1016/j.lindif.2011.09.004

Schwinger, M., & Wild, E. (2012). Prevalence, stability, and functionality of achievement goal profiles in mathematics from third to seventh grade. *Contemporary Educational Psychology, 37*(1), 1-13. doi:10.1016/j.cedpsych.2011.08.001

Schwinger, M., Wirthwein, L., Lemmer, G., & Steinmayr, R. (2014). Academic self-handicapping and achievement: A meta-analysis. *Journal of Educational Psychology, 106*(3), 744-761. doi:10.1037/a0035832

Skaalvik, E. M. (1997). Self-enhancing and self-defeating ego orientation: Relations with task avoidance orientation, achievement, self-

María del Mar Ferradás et al.

perceptions, and anxiety. *Journal of Educational Psychology, 89*(1), 71-81. doi:10.1037/0022-0663.89.1.71

Snyder, C. R., Higgins, R. L., & Stucky, R. J. (1983). *Excuses: Masquerades in search of grace*. New York: Wiley-Interscience.

Stewart, M., & De George-Walker, L. (2014). Self-handicapping, perfectionism, locus of control and self-efficacy: A path model. *Personality and Individual Differences, 66,* 160-164. doi:10.1016/j.paid.2014.03.038

Tice, D. M. (1991). Esteem protection or enhancement? Self-handicapping motives and attributions differ by trait self-esteem. *Journal of Personality and Social Psychology, 60*(5), 711-725. doi:10.1037/0022-3514.60.5.711

Valle, A., Núñez, J. C., Cabanach, R. G., Rodríguez, S., González-Pienda, J. A., & Rosário, P. (2007). Metas académicas y estrategias motivacionales de autoprotección [Academic goals and self-protection motivational strategies]. *Electronic Journal of Research in Educational Psychology, 13*(5), 617-632.

Van Yperen, N. W., Blaga, M., & Postmes, T. (2014). A meta-analysis of self-reported achievement goals and nonself-report performance across three achievement domains (Work, Sports, and Education). *PLOS One, 9*(4), e93594. doi:10.1371/journal.pone.0093594

Wentzel, K. R. (2001). Metas sociales y relaciones sociales como motivadores de la adaptación a la escuela: un análisis motivacional [Social goals and social relationships as motivators of school adaptation: A motivational analysis]. In J. Juvonen & K. R. Wentzel (Eds.), *Motivación y adaptación escolar* [*Motivation and school adaptation*] (pp. 269-294). Mexico: Oxford University Press.

Wolters, C. (2004). Advancing achievement goal theory: Using goal structures and goal orientations to predict students' motivation, cognition and achievement. *Journal of Educational Psychology, 96*(2)*,* 236-250. doi:10.1037/0022-0663.96.2.236