Goal Orientation Profiles and Self-Concept of Secondary School Students

Cándido J. Inglés*, María C. Martínez-Monteagudo*,
José M. García-Fernández**, Antonio Valle***, and Juan L. Castejón**

*Universidad Miguel Hernández de Elche, **Universidad de Alicante, ***Universidad de A Coruña

Abstract

The objective of this study is to identify possible combinations of multiple goals that lead to different goal orientation profiles and to determine whether there are significant group differences in self-concept dimensions. The Achievement Goals Tendencies Questionnaire (AGTQ) and the Self-Description Questionnaire-II (SDQ-II) were administered to a sample of 2,022 students of Compulsory Secondary education, ranging in age from 12 to 16 years ($M = 13.81$, $SD = 1.35$). Cluster analysis identified four profiles of motivational goals: a group of students with a generalized high motivation profile, a group of students with generalized low motivation profile, a group of students with a predominance of learning goals and achievement goals, and a last group of students with a predominance of achievement goals and social reinforcement goals. Results reveal statistically significant differences among the profiles obtained regarding self-concept dimensions.

Keywords: Academic goals, motivational goal profiles, self-concept, adolescence, Secondary Education.

Resumen

El objetivo de este estudio es identificar si existen combinaciones de múltiples metas que dan lugar a diferentes perfiles de orientaciones de metas motivacionales, así como comprobar si existen diferencias significativas entre los grupos obtenidos respecto a las dimensiones del autoconcepto. El Achievement Goal Tendencies Questionnaire (AGTQ) y el Self-Description Questionnaire-II (SDQ-II) fueron administrados a una muestra de 2.022 estudiantes de Educación Secundaria Obligatoria de 12 a 16 años ($M = 13.81$; $DT = 1.35$). El análisis de conglomerados ha identificado cuatro perfiles de metas motivacionales: un grupo de alumnos/as con un perfil de múltiples metas altas, un grupo de estudiantes con un perfil de múltiples metas bajas, un grupo de alumnos/as con un predominio de metas de aprendizaje y metas de logro y un último grupo de estudiantes con predominio de metas logro y metas de refuerzo social. Los resultados revelan diferencias estadísticamente significativas entre los perfiles obtenidos con respecto a las dimensiones del autoconcepto.

Palabras clave: Metas académicas, perfiles de metas motivacionales, autoconcepto, adolescencia, Educación Secundaria.

Correspondence concerning this article should addressed to Dr. Cándido J. Inglés. Área de Psicología Evolutiva y de la Educación. Dpto. de Psicología de la Salud. Universidad Miguel Hernández de Elche. Avda. de la Universidad, s/n. 03202 Elche, Alicante. E-mail: cjingles@umh.es.

Introduction

Conventionally, the theories about academic goals considered learning and achievement goals to be mutually exclusive. However, the new perspective of multiple goals maintains that students can pursue more than one goal within their learning process (Suárez, Cabanach, & Valle, 2001; Valle et al., 2003b). In the same vein, research of multiple goals has empirically shown that, instead of adopting an exclusive goal, many students choose various goals when they engage in learning a task or content. Thus, students' choice of combining goals in concrete academic situations is usually the best option in terms of academic benefits (Valle et al., 2003b; Valle et al., 2009). The theory of multiple goals is also an attempt to synthesize the divergences of some results regarding the advantages and disadvantages of adopting certain types of goals.

On the one hand, there is some empirical corroboration that self-concept is closely related to the type of goal adopted by students. In the same vein, prior empirical evidence revealed that students with a high self-concept were oriented towards learning to a greater extent than students with a low self-concept (Valle et al., 2003a). Thus, it seems that students' active engagement in the learning process increases when they feel they have the necessary competences and high expectations of self-efficacy.

These associations were found when these goals were considered to be mutually exclusive. However, within the tenets of multiple goals, it has been observed that students with high scores in the different types of goals reflect higher levels of self-concept and self-efficacy than students with high learning goals (LG) and low achievement goals (AG) (Pintrich & García, 1991; Seifert, 1995). Thus, in general terms, a more adaptive pattern has been found in students presenting multiple goals, as this allows them to adapt to the features of the task or setting. However, research on this aspect is scarce and, moreover, most of the existing research focuses on university population. Thus, Valle et al. (2003b), using the Achievement Goal Tendencies Questionnaire (AGTQ; Hayamizu & Weiner, 1991) identified three profiles of different goals in a sample of 609 university students. They found a group of students with predominance of multiple goals, a group of students with predominance of AG and a group of students with predominance of LG. In a later investigation, also with a sample of university students, Valle et al. (2010) identified six different motivational goal profiles: (a) generalized low motivation; (b) avoidance of presenting a poor self-image to others; (c) learning-oriented; (d) oriented towards learning and avoidance of present-

ing a poor self-image to others; (e) oriented towards learning and achieving better academic results than one's classmates; and (f) generalized high motivation. In an adolescent sample, we only found reference to the study carried out by Valle et al. (2009). In this case, the authors used the "Cuestionario para la Evaluación de Metas Académicas en Secundaria" (Questionnaire for the Assessment of Academic Goals in Secondary Education; CMA; García et al., 1998), identifying four groups: (a) a learning and achievement profile, (b) a profile of generalized high motivation (high scores in all the goals assessed), (c) predominance of fear of failure, and (d) generalized low motivation (low scores in all the goals assessed). Some prior works with secondary (Valle et al., 2009) and university students (Valle et al., 2003b; Valle et al., 2010) have provided information about specific motivational goal profiles although, depending on the assessment instrument employed, the number and composition of the groups can vary. In addition, as commented above, most of these studies use a sample of university students.

This work has basically two goals. Firstly, in a sample of Spanish students from Compulsory Secondary Education (SCE), we intend to verify whether there are combinations of multiple goals leading to different motivational profiles, which could be defined as a func-

tion of the higher or lower weight of each goal within each profile. Accordingly and considering the results in the cited works, we expect to obtain evidence of the following motivational goal profiles as a consequence of the combination of three types of goals: (a) a profile with high multiple goals (high scores in all the goals assessed), (b) a profile oriented towards learning and achievement, and (c) a profile with low multiple goals (low scores in all the goals assessed). In addition, on the basis of research finding differences in students' self-concept as a function of their motivational goals (Pintrich & García, 1991; Seifert, 1995), we expect to find statistically significant differences all the profiles with regard to the self-concept dimensions analyzed. Specifically, we expect that the group with a profile of high multiple goals will present a higher self-concept than the rest of the groups assessed. This second part of the study is, in a sense, the criterial validation of the profiles found and of their utility when planning educational practices.

Method

Participants

Random cluster sampling was carried out (geographical areas of the province of Alicante and the Region of Murcia: center, north, south, east, and west), selecting

24 schools from rural and urban areas, 16 public schools and 8 private schools, so that each geographical area was represented by at least two schools. In each school, four classrooms were randomly selected with an average of 94 participants per school.

A total of 2267 students participated in this work, from 1st to 4th grade of CSE. Of these students, 116 (5.12%) were excluded because of errors or omissions in their responses, or because they did not obtain their parents' informed consent to participate in the investigation, and 129 (5.69%) were excluded because they were aliens with important deficits in the mastery of the Spanish language.

The final sample comprised 2,022 students (1033 boys and 989 girls): from 1st grade of CSE (309 boys and 267 girls), 2nd grade of CSE (251 boys and 254 girls), 3rd grade of CSE (260 boys and 242 girls), and 4th grade of CSE (213 boys and 226 girls). Age ranged between 12 and 16 years ($M = 13.81$, $SD = 1.35$). The age of the first-grade students ranged between 12-13 years $(M = 12.36$, $SD = .61)$; for the second graders, age ranged between 13-14 years $(M = 13.34$, $SD = .60)$; for the third graders, it ranged between 14-15 years $(M = 14.49$, $SD = .68)$; and for the fourth graders, between 15-16 years $(M = 15.52$, $SD = .75)$. The repeaters were excluded from the sample. The ethnic composition of the sample was: 88.9% Spaniards, 6.34% Latin American, 3.37% other Europeans, 0.75 Asian, and 0.64% Arab. Using the chi-square test to check the homogeneous distribution of frequencies, we confirmed that there were no statistically significant differences among the eight groups of Gender × Grade ($\chi^2 = 3.15$, $p = .368$).

Instruments

The Achievement Goal Tendencies Questionnaire (AGTQ; Hayamizu & Weiner, 1991; adaptation of Inglés et al., 2009, 2011) is made up of 20 items that are rated on a five-point response scale, ranging from 1 (*Never*) to 5 (*Always*). The AGTQ allows the analysis of three tendencies or goal orientations: (a) *Learning Goals* (LG, 8 items) assess students' tendency to engage in academic tasks with the goal of learning, acquiring new knowledge, and increasing their competence; (b) *Achievement Goals* (AG, 6 items) reflect students' tendency to learn in order get good grades in the exams and to advance in their studies; and (c) *Social Reinforcement Goals* (SRG, 6 items) analyze students' tendency to learn in order to gain approval and avoid rejection by parents and teachers.

This questionnaire was used in Spanish population by García et al. (1998) with an adolescent sample, obtaining reliability coefficients similar to those reported by the original authors. In a later study,

Inglés et al. (2009) replicated the trifactorial structure proposed by the original authors, confirming the existence of acceptable temporal stability (.59 to .67), in a six-week interval, and adequate internal consistency coefficients for all three scales (.70 to .80). Recently, Inglés et al. (2011) confirmed the factor invariance of the questionnaire scores as a function of sex and academic grade in adolescent population. In the present study, the internal consistency coefficients (Cronbach's alpha) were adequate for all the subscales (.79 for LG, .71 for AG, and .74 for SRG).

The Self-Description Questionnaire-II (SDQ-II; Marsh, 1992; adaptation of Inglés et al., 2012) is a self-report measure designed to assess the self-concept of adolescents from 12 to 18 years of age. It has 102 items distributed in 11 scales, 3 academic scales (*Mathematics, Verbal*, and *General academic*) and 7 non-academic scales (*Physical skills, Physical appearance, Relations with the opposite sex, Same-sex relations, Relations with parents, Sincerity/Truthfulness* and *Emotional stability*), and it also includes a *Self-esteem scale*. Items are rated on a 6-point response scale, ranging from 1 (*false*) to 6 (*true*).

The research carried out with this questionnaire in adolescent Spanish population (Inglés et al., 2012) replicated the structure of 11 primary correlated factors of the instrument and provided support for its reliability.

In the present study, the internal consistency coefficients (Cronbach's alpha) were adequate in all the scales: .92 (mathematics), .84 (verbal), .89 (general academic), .83 (physical skills), .87 (physical appearance), .78 (relations with opposite sex), .77 (same-sex relations), .82 (relations with parents), .74 (sincerity/truthfulness), .72 (emotional stability), and .78 (self-esteem).

Procedure

First, the headmasters of the schools were interviewed to present goals of the investigation, describe the assessment instruments, request permission, and promote their collaboration. Subsequently, we requested the parents' written informed consent to authorize their children to participate in the investigation. The questionnaires were completed anonymously and collectively in the classroom, during the 2012-2013 academic course. The sets of questionnaires were handed out with instructions and a response sheet for computer correction. Next, the instructions were read out loud, emphasizing the importance of answering all the questions. The investigators were present during the administration of the tests in order to clear up any doubts that could arise. The mean administration time was 10 minutes for the AGTQ and 20 minutes for the SDQ-II.

Data analysis

In order to identify the motivational goal profiles of the participants, quick cluster analysis was performed. Motivational profiles were defined from the different combinations of the three types of goals —LG, AG, and SRG— assessed by the AGTQ, which correspond to the three above-mentioned types of goals. To eliminate the effect due to differences in the measurement of the goals (given that the number of items of each goal subscale is different) we carried out cluster analysis after standardizing the raw scores.

The criterion used to select the number of clusters was maximization of the inter-cluster differences in order to obtain the greatest possible number of groups with different combinations of goals. In addition to this criterion, we considered the theoretical feasibility and psychological meaning of each one of the groups that represented the different motivational profiles.

After establishing the different groups through cluster analysis, we performed analysis of variance (ANOVA) to analyze the statistical significance of the group differences in the dependent variable (dimensions of self-concept). As the factor is made up of more than two levels or groups, the Scheffé posthoc test was used for multiple comparisons. The corresponding effect sizes were calculated for the ANOVAs (Cohen's *d* index; standard-ized difference of means; Cohen, 1988). All the statistical analyses were performed with the SPSS 20.0 program.

Results

Identification of motivational goal profiles

We used the following procedure to make decisions concerning the appropriate number of clusters for our data. Firstly, we observed whether there was any convergent solution before reaching the 10 predetermined iterations for the hypothesized three-group model (confirmatory phase). Secondly, in addition to the statistical convergence criterion, model selection was based on the theoretical match with the formulated hypotheses and the reference theory.

The results obtained show that the three-group model fulfilled the convergence criterion before reaching the 10 iterations (see Figure 1). Nevertheless, the hypothesized three-group model did not correspond to the three-group solution obtained. The three-cluster model included a group of students (Cluster 1) with predominance of high multiple goals, a group (Cluster 3) with low multiple goals, and a group (Cluster 2) with predominance of low AG and SRG.
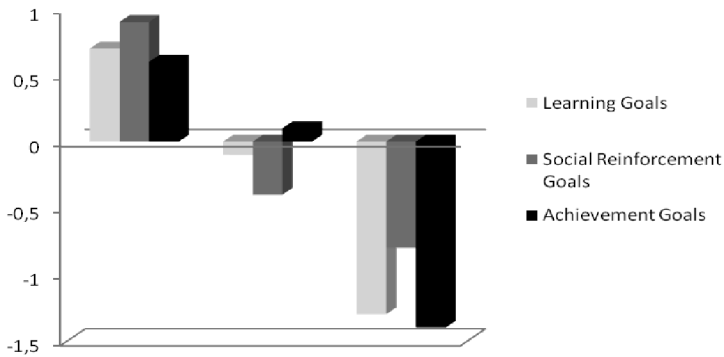
Figure 1. Graphic representation of the three-cluster model.

Note. Cluster 1 (high multiple goals); Cluster 3 (low multiple goals); Cluster 2 (low learning and social reinforcement goals).
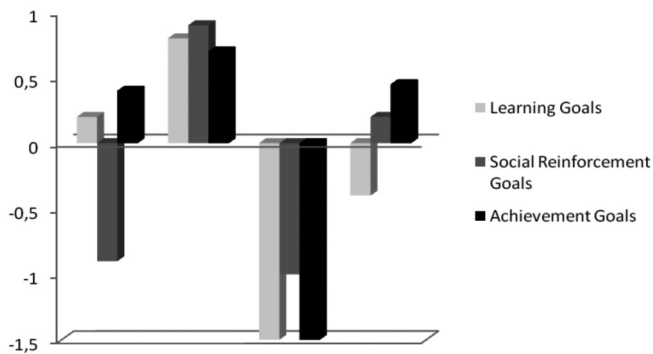

Figure 2. Graphic representation of the four-cluster model.

Note. Cluster 2 (high multiple goals), Cluster 3 (low multiple goals), Cluster 1 (Learning goals and achievement goals), Cluster 4 (achievement goals and social reinforcement goals).

Taking into account that two of the profiles do coincide with those we had hypothesized, we subsequently tested a four-cluster solution (exploratory phase). The results obtained show that the four-group model fulfills the convergence criterion before reaching the 10 iterations (see Figure 2). In this case, the four-cluster solution shows evidence of the three hypothesized groups: a group of students (Cluster 2) with predominance of high multiple goals (HMG group), a group of stu-
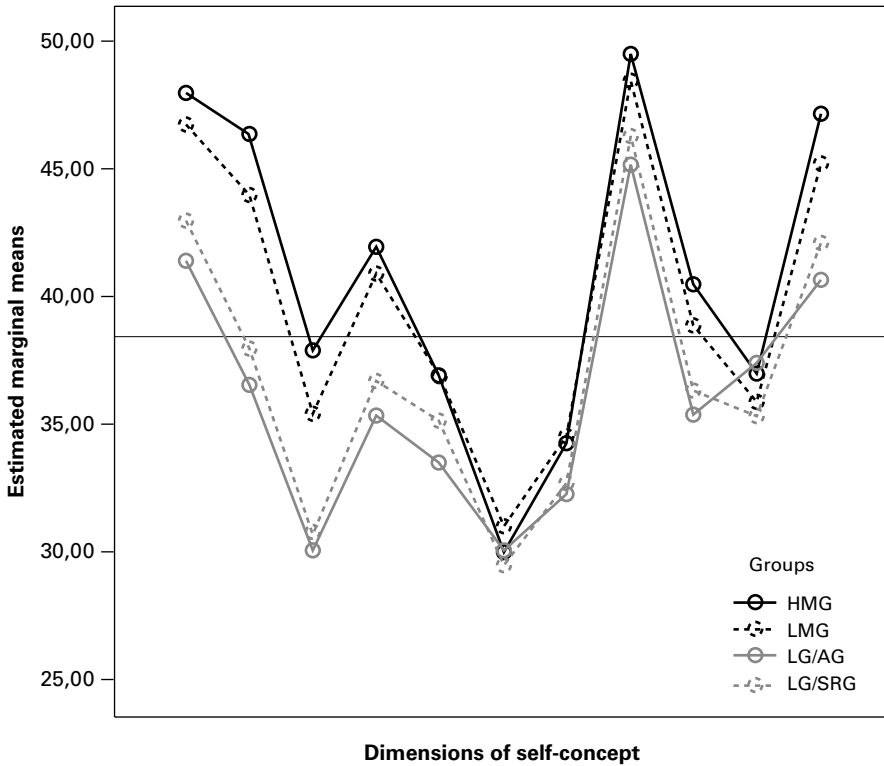
Figure 3. Self-concept profiles.

Note. 1 = Self-esteem; 2 = General academic self-concept; 3 = Mathematical self-concept; 4 = Verbal self-concept; 5 = Physical skills; 6 = Physical appearance; 7 = Relations with opposite sex; 8 = Same-sex relations; 9 = Relations with parents; 10 = Emotional stability; 11 = Sincerity.

dents (Cluster 3) with predominance of low multiple goals (LMG group), a group of students (Cluster 1) with predominance of learning goals and achievement goals (LG/AG), in addition to a fourth group (Cluster 4) made up of students with predominance of learning goals social reinforcement goals (LG/SRG).

Consequently, we decided that the four-cluster solution was the most useful to study the relationship between motivational profiles and the dependent variable considered in this study (self-concept dimensions). Thus, the four-cluster solution was made up of a first group (Cluster 2) compris-

ing 740 students (36.60% of the participants), characterized by high scores in all the goals assessed, that is, a profile with high multiple goals (HMG group). The second group, Cluster 3, was made up of 274 students (13.55% of the participants) and was characterized by low predominance of all the goals analyzed, that is, a profile with low multiple goals (LMG Group). The third group (Cluster 1) was made up of 455 students (22.50% of the participants), characterized by predominance of LG and AG (LG/AG Group), that is, a motivational goal profile oriented towards learning and high academic achievement. The fourth group (Cluster 4) comprised 553 students (27.35% of the participants), characterized by predominance of AG and SRG (AG/SRG Group), that is, a motivational profile oriented toward academic achievement and gaining approval and avoiding parents' and teachers' rejection.

Profile analysis

In our study, profile analysis, equivalent to a multivariate repeated measures analysis, is performed in order to verify whether the self-concept profiles corresponding to the four groups identified through cluster analysis: (a) are parallel, (b) have the same level, and (c) present flatness. Figure 3 shows the graphic representation of the profiles. A horizontal line is included as reference only, showing the mean of the profiles. We note that the skewness and kurtosis of the variables included in the profiles are acceptable (skewness between $-.869$ and $.037$, kurtosis between $-.888$ and $.445$) and that the sample size of the smallest cell in the analysis is larger than the number of dependent variables (self-concept dimensions) included in the analysis.

The parallelism hypothesis is frequently the most interesting in the analysis of profiles. This is because this type of analysis is commonly used in experimental designs to confirm whether the effect of treatment is equivalent in all the treated groups. In our case, the profile is not a repeated measure of the same variables but instead different measures of the same construct (self-concept). The parallelism test determines whether each segment of the profile is the same across groups. In our study, the data provided by the MANOVA indicate a statistically significant interaction between the two factors included in the analysis, $\lambda_{Wilks} = .87$, $F_{(30, 5897)} = 9.29$, $p < .001$, $\eta_p^2 = .84$, Group (the four motivational goal profiles) and Time (the 11 measures of the construct self-concept). Therefore, it can be stated that, although visually, there appears to be parallelism, at the statistical level, this hypothesis is not confirmed. These data suggest that the groups' profiles of self-concept are different, although this test does not inform about which part(s) of the profile are different.

Although, as mentioned, the analysis of the parallelism hypothesis is usually the most interesting, the other two hypotheses (level, flatness) should also be examined. With regard to the flatness hypothesis, like the parallelism test, this is a multivariate test to compare the multiple segments of the profile. The null hypothesis is that the slope of each one of the segments that make up each profile is zero (and therefore the profile is flat). The results of repeated measures MANOVA indicate that the flatness of the profiles is statistically different from zero, $F_{(3, 2754)} = 35,00$, $p < .001$, $\eta_p^2 = .049$, and, therefore, they are not flat. In our case, the data suggest that there are statistically significant differences among the scores of the self-concept dimensions.

Lastly, the level test determines whether the group means of the measures that make up the profile (self-concept dimensions, in our case) are statistically different. The results of the univariate test (a grand mean is created for each group based on the specific measures that make up the profile) indicate that the group levels are statistically different, $F_{(3, 2018)} = 88,37$, $p < .001$, $\eta_p^2 = .116$. Figure 3 indicates the existence of four levels, but the subset test suggests that there are no statistically significant differences between profiles LG/AG and AG/SRG (Scheffé = .230), which leads to the conclusion of three differ-

ent profiles (HMG, LMG and LG/AG-AG/SRG).

As the results at the profile level involve all the scores that make up the profile, we analyzed the group differences for each score. Although, as noted, the homogeneous subset test suggested three different profiles (groups), in the inter-group analysis, four groups were taken into account because some of the self-concept dimensions could reveal significant differences between LG/AG and AG/SRG.

Inter-group differences in the self-concept dimensions

Table 1 presents the inter-group differences in the self-concept dimensions analyzed.

Differences were found among the four clusters in all the self-concept scales ($p < .001$) (see Table 1). The post hoc contrasts showed that the students from the HMG group obtained significantly higher scores in mathematical self-concept than students from the LMG, the LG/AG, and the AG/SRG groups, with effect sizes ranging between low and moderate ($d = .19-.64$). Students from the LMG group obtained significantly higher scores in mathematical self-concept than students from the LG/AG and the AG/SRG groups, with a small effect size ($d = .42$ and $.35$, respectively). No statistically significant differences were obtained between the LG/AG and AG/SRG groups.

Table 1

*Means and Standard Deviations Obtained by the Four Groups and the Eta Square Values
(η^2) for Each Self-Concept Dimension*

	Group HMG		Group LMG		Group LG/AG		Group AG/SRG		$F_{(3, 2018)}$	η^2
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Mathematics	37.90	12.97	35.39	13.41	30.06	10.99	30.73	12.84	37.34	.053
Verbal	42.03	9.97	40.91	10.08	35.40	8.70	36.73	9.48	46.26	.064
General academic	46.34	9.18	43.99	11.25	36.57	9.84	37.95	10.54	87.49	.115
Physical skills	36.89	8.10	36.97	8.51	33.51	8.22	35.11	8.17	15.48	.022
Physical appearance	30.08	8.78	31.04	9.75	30.18	7.84	29.52	8.94	3.10	.005
Relations with oppo-site sex	34.25	7.19	34.57	7.78	32.24	6.72	32.71	7.54	10.93	.016
Same-sex relations	49.48	7.07	48.45	8.33	45.15	8.36	46.28	8.35	24.27	.035
Relations with parents	40.50	7.01	38.90	7.67	35.40	8.17	36.38	8.47	36.60	.052
Sincerity/Truthfulness	47.14	7.15	45.19	8.11	40.65	7.59	42.05	8.07	58.01	.079
Emotional stability	37.02	8.66	35.87	9.04	37.42	7.95	35.25	8.24	5.81	.009
Self-esteem	48.00	7.44	46.70	8.50	41.45	8.32	42.98	8.25	58.75	.080

Note. HMG= High multiple goals; LMG = Low multiple goals; LG/AG = Learning goals and Achieve-ment goals; AG/SRG = Achievement goals and Social reinforcement goals.

In verbal self-concept, students from the HMG and LMG groups obtained significantly higher scores than students from the LG/AG and AG/SRG groups. The effect sizes ranged between small and moder-ate (*d* = .43 to .70). No statistically significant differences were ob-tained between the HMG and LMG groups, or between the LG/AG and AG/SRG groups.

The HMG group obtained sig-nificantly higher scores in general academic self-concept than the stu-dents from the LMG, LG/AG, and AG/SRG groups, with effect sizes between low and high (*d* = .22 to 1.04). The students from the LMG group obtained significantly higher scores in general academic self-con-cept than the students from the LG/AG and AG/SRG groups, with mod-erate effect sizes (*d* = .68 and .55, respectively). No statistically signif-icant differences were obtained be-tween the LG/AG and the AG/SRG groups.

With regard to physical skills, the students from the HMG and LMG groups obtained significantly

higher scores than students from the LG/AG and AG/SRG groups, with a small effect size ($d = .22$ to .41). The differences between groups HMG and LMG were nonsignificant.

With regard to physical appearance, the post hoc contrasts showed that only the students from the LMG group presented significantly higher scores than the AG/SRG group, with a small effect size ($d = .16$). The remaining comparisons were not statistically significant.

With regard to relations with the opposite sex, students from the HMG and LMG groups obtained significantly higher scores on this scale than students from the LG/AG and AG/SRG groups. The effect sizes were small ($d = .21$ to .31). No statistically significant differences were found between the HMG and LMG groups, or between the LG/AG and AG/SRG groups.

The same results were found with regard to same-sex relations. Students from the HMG and LMG groups obtained significantly higher scores than students from the LG/AG and the AG/SRG groups. The effect sizes ranged between small and moderate ($d = .26$ to .57), and no statistically significant differences were obtained between the HMG and LMG groups or between the LG/AG and AG/SRG groups.

With regard to Relations with parents, the HMG group presented significantly higher scores on this scale than the LMG, LG/AG, and AG/SRG groups, with the effect sizes ranging between small and moderate ($d = .22$ to .68). Likewise, students from the LGM group obtained significantly higher scores in Relations with parents than students from the LG/AG and AG/SRG groups. The effect size these differences was small to moderate ($d = .31$ to .45, respectively). No significant differences were found between students from the LG/AG and AG/SRG groups.

The students from the HMG group obtained significantly higher scores in Sincerity/truthfulness than the LMG, the LG/AG, and the AG/SRG groups, with effect sizes ranging between small and high ($d = .25$ to .89). Students from the LMG group scored significantly higher in Sincerity/truthfulness than students from the LG/AG and the AG/SRG groups. The effect size of these differences was small to moderate ($d = .57$ to .39, respectively). No statistically significant differences were obtained between students from the LG/AG and the AG/SRG groups.

Regarding emotional stability, students from the HMG group presented significantly higher scores on this scale than students from the AG/SRG group, with a small effect size ($d = .21$). Students from the LG/AG group also scored higher in emotional stability than the AG/SRG group, although these significant differences had a small effect size ($d = .27$). The remaining comparisons were not statistically significant.

Lastly, with regard to self-esteem, students from the HMG and the LMG groups obtained significantly higher scores on this variable than students from the LG/AG and the AG/SRG groups. The effect sizes ranged between small and high ($d = .44$ to $.84$). No statistically significant differences were obtained between the HMG and LMG groups, or between the LG/AG and the AG/SRG groups.

Discussion

The main goal of this work was to analyze the different combinations of goals and to define the motivational profiles in a sample of Spanish students from Compulsory Secondary Education. We also analyzed the interaction among the orientations (different intra-group variables and the same inter-group variables) by means of the flatness and parallelism tests, respectively. Subsequently, we determined whether there were significant group differences with regard to the self-concept dimensions. Thus, by means of cluster analysis, we identified four different motivational goal profiles, instead of three, as stated in the first hypothesis. A first group with a profile of high multiple goals (HGM), a second group with a profile of low multiple goals (LGM), a third group with a motivational profile oriented towards learning goals and achievement goals (LG/AG), and lastly, a group with a profile oriented towards achievement goals and social reinforcement goals (AG/SRG).

The four-cluster solution reflects a scenario that is more coherent with prior research of motivational goal profiles at different educational stages and, probably, more in accordance with the developmental stage of these students. Thus, for example, Cluster 4 profile of motivational goals clearly illustrates the important role of achievement-related motives at this educational stage, but also of motives more closely related to one's social rating.

These results are consistent with the research carried out on different motivational profiles (Valle et al., 2003b; Valle et al., 2009). Thus, most of the studies have found a common profile: students oriented towards multiple goals. That is, instead of adopting an exclusive goal, students choose various goals when engaging in learning. The results of this study also coincide with other investigations finding profiles of students with high scores in all the goals, profiles of students with low scores in all the goals, and profiles where one of the goals predominates (Suárez et al., 2001; Valle et al., 2010).

The results revealed statistically significant differences in all the groups with regard to the self-concept dimensions analyzed in this study. These data not only support the validity of the different motivational profiles, they also contribute

relevant aspects to our understanding of the relationship between students' goals and their self-concept. In general, it has been confirmed that HMG students present a higher self-concept than students with either a combined LG/AG profile or a combined AG/SRG profile in all the assessed dimensions of self-concept. Similar results were found by other researchers (Pintrich & García, 1991; Seifert, 1995). Nevertheless, we note that the HMG students present higher scores than the LMG group in some of the self-concept dimensions (mathematical self-concept, general academic self-concept, relations with parents, sincerity/truthfulness, and emotional stability), but both groups have similar scores in the remaining scales (verbal self-concept, physical skills, physical appearance, relations with the opposite sex, same-sex relations, and self-esteem). In this sense, some investigations relate students' low motivation to their psychosocial adjustment in the academic setting (Ugartetxea, 2002), describing these students as being rejected by their classmates. When these students are sure that they cannot achieve a positive appraisal because they feel incapable of performing the tasks successfully, they develop alternative behaviors to maintain their level of self-concept and self-esteem in certain settings. This is a possible explanation of the results. Nevertheless, this result should be analyzed in more depth in future research.

Moreover, LMG students present a higher self-concept in almost all the self-concept dimensions than students with a combined LG/AG profile and students with a combined AG/SRG profile. According to several investigations, this type of motivational pattern (LMG) may negatively affect students' academic self-concept and self-esteem (Valle et al., 2003b; Weiner, 2004). These results have generally been found when comparing this profile with HMG students or with LG students. In the same vein, our results coincide with these investigations, because the HMG group generally presents a higher self-concept than the LMG students. However, both the AG/SRG group and the LG/AG students present low mean scores in this type of goals, indicating that self-concept is closely related to the HMG orientation and, especially, to the LG orientation.

The present investigation also reveals that, in order to analyze goals, it is necessary to consider the different motivational profiles found, not the study of students' mutually exclusive goals. This provides a more objective and accurate view of the reality of the classroom. The results of this work confirm other investigations finding higher self-concept related to a predominance of multiple goals (Pintrich & García, 1991; Seifert, 1995), which guarantee some degree of flexibility for the students to adapt efficaciously to diverse school setting situations. In

addition, the utilization of these multiple goals as a function of the situation optimizes the teaching-learning process because students who implement different motivational goals need a high level of confidence in their possibilities and capacities, among other factors (adaptive causal attributions, use of learning strategies, etc.).

Although prior investigations have underlined this observation, especially in the university setting, it is difficult to compare the different investigations, partly because they use different measurement instruments, which provide different motivational goal profiles. Moreover, most investigations have focused on students' academic self-concept, ignoring other self-concept dimensions. In any event, in spite of these limitations, the present work offers a more complete view of the motivational profiles of Spanish students of CSE, and this information can be used for the development of preventive strategies or in-terventions in the classroom. Hence, it is necessary to promote the use of high multiple goals because this pattern leads to students' higher self-concept. Therefore, a future objective is to continue to investigate the relation between students' goals and their self-concept.

Acknowledgements

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Cándido J. Inglés holds a Ph.D. in Psychology and is a Tenured Lecturer of Educational Psychology in the Area of Developmental and Educational Psychology of the University Miguel Hernández of Elche. His academic activity includes the direction of 10 doctoral theses and the publication of more than 60 articles, half of them with an impact factor (JCR). His research areas include, among others, the study of social interaction styles and their relation with cognitive-motivational variables and academic achievement in Secondary Education.

María del Carmen Martínez Monteagudo holds a Ph.D. in Psychology and is a professor in the area of Developmental and Educational Psychology in the University Miguel Hernández of Elche. She has participated in research projects financed by the Ministry of Education and Science for the study of variables related to education in adolescence.

José M. García-Fernández holds a Ph.D. in Psychology and is a Tenured University Lecturer in the Department of Developmental Psychology and Didactics of the University of Alicante. His research focuses mainly on school anxiety and its relation with cognitive-motivational variables and academic achievement in children and adolescents. He is coauthor of 6 books and has published 22 articles with impact factor (JCR).

Antonio Valle is Full University Professor of Educational Psychology and Director of the Department of Developmental and Educational Psychology of the University of A Coruña. His main lines of research are focused on academic motivation, study strategies, and self-regulated learning.

Juan Luis Castejón Costa is Full University Professor in the area of Developmental and Educational Psychology of the University of Alicante and Director of the Department of Developmental Psychology and Didactics of this University. He has collaborated with Professor R. J. Sternberg and was a visiting lecturer at Yale University (USA), as well as a Consultant of the European Union for topics concerning educational research. His lines of research revolve around the study of intelligence, emotional intelligence, motivation, and academic underachievement.