

## Perceived parental involvement and children's homework engagement at the end of Primary Education: A cluster analysis

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**Abstract:** Using a person-centered approach, this study aimed (i) to analyze whether there are groups of students with similar profiles of perceived parental involvement in homework, and (ii) to study the relationship of those profiles with motivational engagement and cognitive engagement with homework. The participants were 433 students in the 5th and 6th grade in four schools in Asturias (Spain). The data were analyzed based on cluster analysis (k-means) and MANOVAS. Four profiles of perceived parental involvement were identified: high involvement of both types, low involvement of both types, mainly control, and mainly support. The higher the level of parental involvement (in both forms), the greater the students' motivational and cognitive engagement. Girls differed from boys in that they placed much more importance on parental control, as high levels of parental control were sufficient for girls to be engaged in their homework. However, for boys to demonstrate some motivational and cognitive engagement, they needed to perceive that their parents were involved, although how did not matter (control or support).

**Keywords:** Perceived parental involvement; Parental control; Parental support; Learning approaches; Self-regulation strategies.

## Implicación familiar percibida e implicación de los niños en las tareas escolares al final de la Educación Primaria: un análisis de conglomerados

**Resumen:** El presente estudio plantea, desde una perspectiva centrada en la persona, analizar (i) si existen grupos de estudiantes con semejantes perfiles de implicación parental percibida en los deberes escolares, y (ii) estudiar la relación de tales perfiles con la implicación motivacional y la implicación cognitiva en los deberes escolares, en estudiantes de los dos últimos cursos de Educación Primaria. Participaron 433 estudiantes de 5º y 6º de cuatro centros educativos del área central de Asturias. Los datos fueron analizados mediante análisis cluster (k-medias) y MANOVAS. Se identificaron cuatro perfiles de implicación parental percibida: alta implicación de ambos tipos, baja implicación de ambos tipos, principalmente control, principalmente apoyo. Coincidiendo en que a mayor nivel de implicación parental (de ambas formas) mayor implicación motivacional y cognitiva de los alumnos, hombres y mujeres se diferencian en que las mujeres dan mucha más relevancia al control parental que los hombres, ya que con niveles altos de control parental es suficiente para implicarse en los deberes escolares. Sin embargo, para que haya cierta implicación motivacional y cognitiva, los hombres necesitan percibir que sus padres se implican, aunque da igual el modo en que lo hagan (en forma de control o de apoyo).

**Palabras clave:** Implicación parental percibida; Control parental; Apoyo de los padres; Enfoques de aprendizaje; Estrategias de autorregulación.

The relationship between homework and academic performance has been thoroughly studied over many years (Bembenutty, 2011; Bembenutty & White, 2013; Rosário, et al.,

2009). The results vary from one study to the next depending on the design used (Cooper et al., 2006; Patall et al., 2008), the nature of the measures produced (general vs. specific) (Trautwein et al., 2009), the educational stage the students were in (Núñez et al., 2017), or the focus of the analysis; student variables, teaching process variables, or family context

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variables (Feng et al., 2019; Fang et al., 2017; Fernández-Alonso et al., 2015).

In general, most studies have found that completing a reasonable amount of homework each day helps students to develop study habits which make learning easier and ultimately improve academic performance (Cooper et al., 2006; Epstein & Van Voorhis, 2001; Rosário et al., 2009; Warton, 2001; Xu & Corno, 2006; Xu & Yuan, 2003). For example, in 2007, the OECD reported that countries with education policies that tended to engage students in homework demonstrated better academic results. Trautwein (2007) corroborated those results using multilevel modeling, finding that for secondary school students, doing homework was more strongly associated with academic success than for primary students, as other authors had also found (Cooper et al., 2006; Cooper & Valentine, 2001).

Assignment of homework is a socially controversial issue. Parents, students, and teachers each have differing views about the need to set homework (Valle et al., 2018). Those in favor of moderate homework being set believe that doing these types of tasks each day (i) helps to create habits of working, improvement, and personal effort, (ii) teaches students to be responsible and develop discipline, (iii) connects parents to their children's education, (iv) reinforces and contextualizes classroom learning, (v) stimulates children's reasoning and memory skills, and (vi) encourages autonomy and makes it possible for the student to learn to work on their own and therefore develop the ability to plan and seek information themselves. In contrast, those who oppose setting homework in this way argue that it (i) creates tension between parents and children, making life more difficult for families, causing conflict and leading to punishment, (ii) demotivates many children and produces added fatigue to the tiredness children accumulate during the school day, (iii) is a failure of the school system, (iv) contributes to social inequality by highlighting the family's socioeconomic and cultural level and that of their surroundings, and (v) restricts family time, time for domestic chores and children's leisure time.

Occasionally, homework leads to real family conflict. The burden on the family environment may also sometimes threaten family arrangements by reducing free time the family can share. In addition, families understand that many parents do not have the education to provide appropriate supervision. The various parental behaviors when trying to help children with their homework are usually associated with distinct academic and non-academic results for the children (Álvarez-Bermúdez & Barreto-Trujillo, 2020; Boonk et al., 2018; Martínez-Vicente et al., 2020). Current research (e.g., Gonida & Cortina, 2014; Gonida & Vauras, 2014; Patall et al., 2008; Pomerantz et al., 2007; Silinskas & Kikas, 2019) emphasizes two main types of parental involvement behavior, which various authors have given different labels to: *control* (aimed at the behavioral aspect of the child's involvement in homework, tending to ensure that homework is done), and *motivational and emotional support* (the objective of which is to ensure students' motivational and emotional conditions needed for when they do homework). However, as we will see below, the results of past research do not all agree (Núñez et al., 2015).

There is a long history of research into the relationship between student performance and certain family-related variables, both in general terms (see Boonk et al., 2018; Epstein, 1988; González-Pienda et al., 2002; Hill et al., 2004; Suárez-Alvarez et al., 2014; Pomerantz et al., 2007; Skaliotis, 2010) and particularly in relation to parental participation in children's homework activity (see Cooper et al., 2001; Cooper et al., 2006; Corno & Xu, 2004; Dumont et al., 2012; Patall et al., 2008).

Previous research has produced inconsistent results regarding the relationship between parental participation in homework and children's academic success. Some studies have found positive relationships (Cooper et al., 2001; Pomerantz & Eaton, 2001) and others have found negative relationships (Schultz, 1999), while other authors have found both types of relationships in different studies (Dumont et al., 2012) depending

on the nature or quality of the parental involvement. For example, whereas parent-child conflict has been negatively associated with educational results, parental competence and support have been positively related to academic performance. There were similar results from Karbach et al. (2013), who found that academic success was significantly and negatively associated with parental emphasis on control and structure (excessive control and pressure on children to complete homework, such as directives and rules about homework and schoolwork). They also found that academic success was not explained by parental behaviors that encouraged children's autonomy when doing homework, nor by parental empathy (the parents' disposition and ability to view things from their child's perspective and respond to their needs). A study by Núñez et al. (2015) found that children's perceptions of parental control regarding homework were directly and negatively related to academic achievement (the greater the perceived parental control, the worse the students' academic performance). They also found that children's perceptions of parental support demonstrated positive effects on academic performance in secondary-school children, but not in children in the last few years of primary school.

This lack of a clear relationship between perceived parental involvement and academic performance may be due to the effect of parental involvement on performance being mainly indirect, as shown in some recent studies (e.g., Núñez et al., 2019), via other child-related variables such as their motivation or how they do their homework.

Some studies have found significant relationships between different student characteristics when doing homework and their academic success. These include procrastination, frequency of homework assignment (Núñez et al., 2015; Valle, Pan, Regueiro et al., 2015), time spent on homework (Fernández-Alonso et al., 2015; Núñez et al., 2015; Trautwein et al., 2009), time management doing homework (Xu, 2010, 2011), attitudes and reasons or motivation for doing homework (Xu & Wu, 2013), effort

made in doing homework (Trautwein, Lüdtke et al., 2006; Trautwein, 2007; Trautwein, Niggli et al., 2009), and strategies for seeking help (Bembenutty & White, 2013). It is clear that these characteristics fall within one of the three typical dimensions of student involvement in school tasks (motivational, behavioral, and cognitive), although it is the behavioral (mainly time spent on homework) that has been the most studied and about which there is the most data available in homework research.

However, there is much less information available about the first part of the framework, the extent to which and how children's perceptions of parental involvement affect their motivation and how they do their homework. In general, the data currently available indicate that student engagement is significantly associated with perceived parental involvement (e.g., Núñez et al., 2019; Regueiro et al., 2015). More specifically, working with primary school students, Regueiro et al. (2015) found that the greater the perceptions of parental involvement (in any of the dimensions examined: accompaniment, support, and control), the greater the students' motivation when doing homework. More recently, Rodríguez et al. (2017) examined the responses of 897 students of similar ages to those in our study (5<sup>th</sup> and 6<sup>th</sup> grade), analyzing how the perceptions of the parents' beliefs were related to the children's beliefs, their involvement in mathematics tasks, and their performance in mathematics. Those researchers found a significant, albeit small effect of the perception of parents' help with homework on intrinsic motivation and self-efficacy.

As noted above, and as the study by Núñez et al. (2019) found with secondary-school students, it is possible that in younger children (at the end of primary education) the relationship between parental involvement and academic performance may also be indirect, and mediated by student-related variables. If that is the case, it would be extremely interesting to see how children's perceptions of their parents involvement in homework affects their motivation and study processes. In the studies we reviewed (e.g., Núñez et

al., 2019; Regueiro et al., 2015; Rodríguez et al., 2017), although there was evidence of significant effects of parental involvement on children's motivation and self-efficacy, the effects were small in each case.

Dumont et al. (2012) warned that it is essential to distinguish between the different dimensions of parental participation in homework, and not focus solely on the overall amount of participation. Because the different types of parental participation in homework may have different effects on children's engagement and motivation, research focusing exclusively on the extent of parental involvement from a general perspective may lead to erroneous conclusions about how effective it is.

Nevertheless, all of this data was produced from studies that considered the relationship of involvement variables separately on the students' motivational dimension. However, in the field of school motivation, the best approach has been shown to be person-centered (Valle et al., 2003), an approach that rather than considering the variables independently, looks at them according to how people combine them individually (e.g., Valle et al., 2010; Valle, Pan, Núñez et al., 2015; Wormington & Linnenbrink-García, 2017). More specifically, students may differentiate between not only the magnitude or level of control or support involvement provided by their parents, but in addition, and maybe more importantly, they may perceive certain combinations of the two types of parental involvement. It is possible, for example, that students who perceive high support from their parents in emotional and motivational terms may demonstrate different involvement in homework in as much as the perceived level of parental control is very different. From this perspective, it makes sense to talk about profiles of perceived parental involvement. However, as far as we are aware, there are no studies that have adopted this approach.

Therefore, our study uses this new person-centered approach. The objectives of the study are (i) to determine whether there are groups of students with similar profiles of perceived parental involvement (combinations

of control and support), and (ii) to analyze the relationship of those profiles with motivational engagement (intrinsic motivation, attitude, and anxiety) and cognitive engagement (study focus and use of self-regulation strategies) in homework in students in the last two years of primary education.

As there are no previous studies that have used a person-centered approach to parental involvement in homework, we have approached this study from an exploratory perspective.

## METHOD

### PARTICIPANTS

A total of 433 students participated in this study. They were in the last two years of primary education (5<sup>th</sup> grade:  $n = 216$ , 112 girls; 6<sup>th</sup> grade:  $n = 217$ , 109 girls) in four schools in urban locations. The schools were all state-funded, with moderate sociocultural levels. The selection of the schools was by convenience.

### INSTRUMENTS

#### PERCEIVED PARENTAL INVOLVEMENT

We evaluated two dimensions of parental involvement in homework as perceived by the children: *control* (the extent to which the children perceive their parents' involvement is limited to control) and *support* (the extent to which the children perceive their parents' involvement to be mainly based on providing motivational and emotional help and support). The items used were adapted from previous studies (e.g., Dumont et al., 2012; Trautwein & Lüdtke, 2009) and have been used in other research in the same context (Núñez et al., 2015, 2017, 2019; Rodríguez et al., 2017; Valle, Regueiro, Núñez, Suárez et al., 2016; Valle, Regueiro, Núñez, Rodríguez et al., 2016).

*PERCEPTION OF PARENTAL CONTROL.* This form of parental involvement was measured using 5 items (e.g., "My parents are very concerned

that I complete all of my homework”) using a Likert-type scale with 5 response options from 1 (*completely false*) to 5 (*completely true*). The reliability of the scale was acceptable, although limited ( $\alpha = .63$ ).

**PERCEPTION OF PARENTAL SUPPORT.** This dimension of parental involvement was measured using 3 items (e.g., “When I do my homework, my parents give me very useful explanations”). Students responded to the items on a 5-point Likert-type scale from 1 (*completely false*) to 5 (*completely true*). The reliability of the scale was acceptable ( $\alpha = .70$ ).

## STUDENT ENGAGEMENT

### *Cognitive engagement*

**STUDY PROCESS.** The homework study process was evaluated using the adaptation of the *Students’ Approaches to Learning Inventory* (Rosário, et al., 2013) to the context of homework. The scale *Students’ Approaches to Homework Inventory* has 12 items, six for each of its two dimensions: the *Superficial Approach* (e.g., “When I do my homework I don’t care if I learn or not, the only thing I think about is finishing as quickly as possible”) and the *Deep Approach* (e.g., “I am interested when I do homework because it helps me to better understand what the teacher explains in class every day”). Students respond to the items on a 5-point Likert-type scale from 1 (*completely disagree*) to 5 (*completely agree*). In our study, we used the deep approach subscale because, in addition to being more reliable than the superficial approach subscale, it provides information about the extent to which the student works to achieve deep, meaningful learning. The reliability of the subscale was good (6 items;  $\alpha = .81$ ).

**Self-regulated learning strategies.** These were evaluated using the *Self-Regulated Learning Strategies Inventory* (IPAA [*initials from the Spanish version: Inventario de Procesos de Autorregulación del Aprendizaje*]). The IPAA is based on the socio-cognitive model created by Zimmerman (2001, 2011). It is made up

of 9 items to measure the three phases of the self-regulated learning process: planning (e.g., “I make a plan before starting to work. I think about what I’m going to do and what I need to do it successfully”), execution (e.g., “When I’m doing my homework, I think about whether I’m doing what I planned to reach my objectives and what I have to change if things are not going well”), and evaluation (e.g., “I review what I did to see what mistakes I made and so to understand how to do it better next time”). The responses to the items are given on 5-point Likert-type scale from 1 (*never*) to 5 (*always*). The IPAA has been used in a variety of contexts and has been shown to be valid and reliable (e.g., Cerezo et al., 2019; Rosário et al., 2012, 2015). In our study, the reliability of the scale was good (9 items;  $\alpha = .86$ ).

### *Motivational engagement*

**INTRINSIC MOTIVATION.** Students’ intrinsic motivation towards homework (interest in homework and engagement in completing it) was measured using 6 items that have been used in previous studies (e.g., Valle, Regueiro, Núñez, Rodríguez et al., 2016). Examples include “I enjoy doing homework because it lets me learn more” and “Doing homework lets me prepare better for the next day’s class”. Students respond to the items using a 5-point Likert-type scale from 1 (*completely disagree*) to 5 (*completely agree*). The reliability in this study was good (6 items;  $\alpha = .80$ ).

**ATTITUDE TOWARDS HOMEWORK.** Students’ attitudes towards homework were assessed using three items ( $\alpha = .72$ ) which have been used in previous studies (e.g., Valle, Regueiro, Núñez, Rodríguez et al., 2016). For example, one item states: “I am in a good mood while I do my homework”. Students respond to the items on a 5-point Likert-type scale from 1 (*completely disagree*) to 5 (*completely agree*).

**ANXIETY ABOUT HOMEWORK.** This was measured with four items ( $\alpha = .76$ ) that have been used in other studies (e.g., Valle et al., Valle, Regueiro, Núñez, Rodríguez et

al., 2016). An example item is "Just thinking about homework makes me nervous". Students respond to the items on a 5-point Likert-type scale from 1 (*completely disagree*) to 5 (*completely agree*).

## PROCEDURE

The schools participated voluntarily, as did the students in each school. The students who participated had written consent from their parents. Members of the research team attended each school to apply the evaluation scales, which was done at a single time. We did not explain to the students what the objectives of the study were, we only asked them to be as accurate and honest as possible.

## DATA ANALYSIS

We analyzed the data in three phases. First, we examined the descriptive statistics, paying particular attention to the distribution of the variables. Second, we used k-means cluster analysis to produce the possible student groups according to their perceptions of parental involvement in homework. Finally, we performed multivariate analysis of variance to determine possible differences in students' motivational

and cognitive engagement in homework as a consequence of perceived parental involvement profiles. The size of the differences was interpreted based on partial eta-squared (small  $\eta_p^2 = .01$ ; medium  $\eta_p^2 = .059$ ; large  $\eta_p^2 = .138$ ).

## RESULTS

### DESCRIPTIVE STATISTICS

Table 1 shows the descriptive statistics of the variables used in this study, along with the Pearson correlations.

### PROFILES OF PERCEIVED PARENTAL INVOLVEMENT

Using k-means cluster analysis, we obtained four groups of students who had similar combinations of control and support involvement from their parents in relation to their homework. Before performing the cluster analysis, we normalized both variables ( $M = 0$ ;  $SD = 1$ ). We called the groups produced by the analysis "Perceived Parental Involvement Profiles". Table 2 gives the corresponding data for the four groups. Figure 1 is a graphical representation of the profiles.

Table 1  
Descriptive statistics and Pearson correlations

	Gender	CON	SUP	INM	ANX	ATT	DSP	SRL
Gender	–							
CON	-.063	–						
SUP	-.024	.367**	–					
INM	.100*	.274**	.197**	–				
ANX	-.062	.090	.031	-.165**	–			
ATT	.013	.194**	.125**	.546*	-.210**	–		
DSP	.049	.336**	.187**	.689**	-.167**	.615**	–	
SRL	.026	.321**	.169**	.555**	-.066	.494**	.743**	–
M	1.50	3.88	4.00	4.07	1.59	2.86	3.67	3.53
SD	0.50	0.81	0.97	0.70	0.75	0.98	0.83	0.72
Asymmetry	-0.42	-0.74	-1.09	-1.11	1.52	0.12	-0.60	-0.36
Kurtosis	-2.00	0.11	0.73	1.77	2.06	-0.51	0.31	0.22

Gender (1 = boy; 2 = girl); CON = Perceived parental control involvement; SUP = Perceived parental support involvement; INM = Intrinsic motivation towards homework; ANX = Anxiety about homework; ATT = Attitude towards homework; DSP = Deep study processes; SRL = Self-regulated strategies for study and learning; M = Mean; SD = Standard Deviation.  
\*  $p < .05$ ; \*\*  $p < .01$

Table 2  
Scores for the groups in the cluster analysis (z scores)

	Perceived Parental Involvement Profiles			
	1 (n = 87)	2 (n = 222)	3 (n = 34)	4 (n = 90)
Perceived parental control	-1.162	0.651	-1.601	0.122
Perceived parental support	0.236	0.622	-1.835	-1.070

1 = Predominantly Perceived Parental Support; 2 = High Perceived Parental Involvement; 3 = Low Perceived Parental Involvement; 4 = Predominantly Perceived Parental Control.

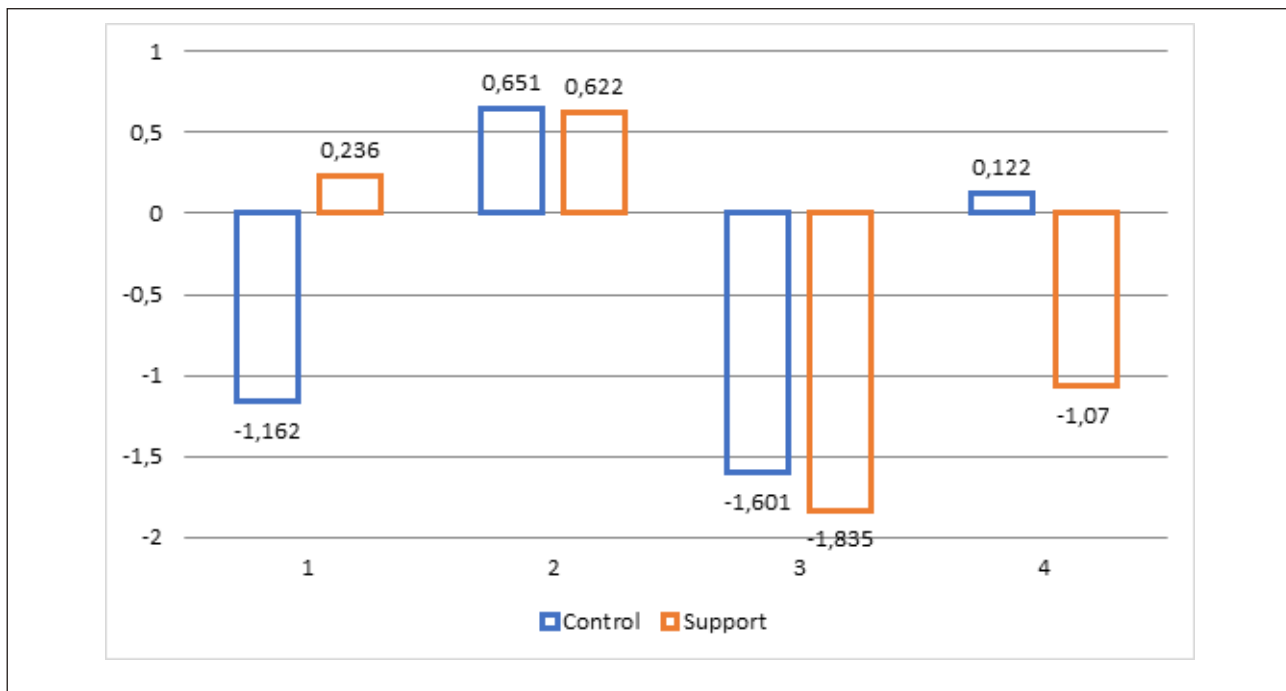


Figure 1. Profiles of perceived parental involvement in homework (z scores).

1 = Predominantly Perceived Parental Support; 2 = High Perceived Parental Involvement; 3 = Low Perceived Parental Involvement; 4 = Predominantly Perceived Parental Control.

The data indicated a large group of just over half of the students ( $n = 222$ ; 51.3%) with a profile characterized by perceived high parental involvement in homework both in control and support dimensions. We called this group “High Perceived Parental Involvement”. We also identified a very small group of students ( $n = 34$ ; 7.8%) who perceived low parental involvement in both control and support dimensions, which we called “Low Perceived Parental Involvement”. The other two groups were of similar size, and characterized by a predominant perception of parental involvement of one type or the other.

One group ( $n = 87$ ; 20.1%) mainly perceived support (and very little control), which we called “Predominantly Perceived Parental Support”. The final group ( $n = 90$ ; 20.7%) was students who mainly perceived control (and very little support), which we called “Predominantly Perceived Parental Control”.

The differences between the groups in the two variables were very large, indicating the importance of each variable for characterizing the profile: perception of control ( $F_{(3429)} = 325.892$ ;  $p < .001$ ;  $\eta_p^2 = .695$ ) and perception of support ( $F_{(3429)} = 356.937$ ;  $p < .001$ ;  $\eta_p^2 = .714$ ). There were no differences in the

numbers of boys or girls in each group, except for in the "Low Perceived Parental Involvement" group, in which there were more girls than boys (41.2% boys; 58.8% girls). Lastly, although the perceived parental involvement profiles were very different, there were no statistically significant differences between the groups in the amount of homework assigned daily by schools ( $F_{(3,429)} = 2.004$ ;  $p = .113$ ;  $\eta_p^2 = .014$ ) or in the time spent each day doing homework ( $F_{(3,429)} = 2.043$ ;  $p = .107$ ;  $\eta_p^2 = .014$ ).

## MULTIVARIATE ANALYSIS OF VARIANCE

### MOTIVATIONAL ENGAGEMENT

Table 3 gives the descriptive statistics, by group and gender, of the three motivational engagement variables (intrinsic motivation, attitudes towards homework, and anxiety about homework).

The multivariate-level data (taking the three dependent variables together) suggest a statistically significant effect of Group (perceived profiles of parental involvement) ( $\lambda_{\text{Wilks}} = .904$ ;  $F_{(9,1029)} = 4.850$ ;  $p < .001$ ;  $\eta_p^2 = .033$ ) and of Gender ( $\lambda_{\text{Wilks}} = .982$ ;  $F_{(3,423)} = 2.654$ ;  $p < .05$ ;  $\eta_p^2 = .018$ ), but not of the interaction Group\*Gender ( $\lambda_{\text{Wilks}} = .985$ ;  $F_{(9,1029)} = 0.771$ ;  $p > .05$ ;  $\eta_p^2 = .005$ ).

Table 4 gives the inferential statistics for each of the three dependent variables separately. The data indicates that the levels of intrinsic motivation and attitudes towards homework were different depending on the subjects' profiles (Group), but not depending on anxiety. There was also a relationship between Gender and intrinsic motivation but not with anxiety or attitudes towards homework. Lastly, the interaction between Group and Gender was not statistically significant in any of the three dependent variables.

Table 3  
Descriptive statistics of student motivational engagement with homework by interaction of group and gender.

			<i>Intrinsic Motivation</i>		<i>Anxiety</i>		<i>Attitude</i>	
Group	Gender	n	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1	Boy	43	3.860	0.825	1.545	0.719	2.678	0.941
1	Girl	44	3.987	0.629	1.504	0.595	2.762	0.932
2	Boy	111	4.197	0.622	1.725	0.841	3.028	1.061
2	Girl	111	4.253	0.566	1.591	0.812	2.930	0.876
3	Boy	14	3.440	0.674	1.517	0.541	2.142	0.993
3	Girl	20	3.828	0.800	1.642	1.007	2.316	0.888
4	Boy	44	3.828	0.924	1.581	0.616	2.780	1.036
4	Girl	46	4.162	0.641	1.460	0.609	3.085	0.940

Group 1 = Predominantly Perceived Parental Support; Group 2 = High Perceived Parental Involvement; Group 3 = Low Perceived Parental Involvement; Group 4 = Predominantly Perceived Parental Control.



*Table 4*  
Differences in motivational engagement with homework by group, gender, and interaction.

	<i>Intrinsic Motivation</i>			<i>Anxiety</i>			<i>Attitude</i>		
	<i>F</i>	<i>p</i>	$\eta_p^2$	<i>F</i>	<i>p</i>	$\eta_p^2$	<i>F</i>	<i>p</i>	$\eta_p^2$
Group	10.039	<.001	.066	1.057	.367	.007	6.572	<.001	.044
Gender	7.710	.006	.018	0.221	.639	.001	1.004	.317	.002
Group*Gender	1.242	.294	.009	0.324	.808	.002	1.003	.391	.007

*Table 5*  
Descriptive statistics for student cognitive engagement with homework by interaction of group and gender.

Group	Gender	n	<i>Study focus</i>		<i>Self-regulated learning strategies</i>	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1	Boy	43	3.442	0.790	3.190	0.755
1	Girl	44	3.375	0.746	3.279	0.624
2	Boy	111	3.860	0.777	3.728	0.724
2	Girl	111	3.883	0.715	3.685	0.691
3	Boy	14	2.857	0.771	3.006	0.510
3	Girl	20	3.275	1.053	3.259	0.876
4	Boy	44	3.481	1.021	3.431	0.704
4	Girl	46	3.811	0.651	3.597	0.597

Group 1 = Predominantly Perceived Parental Support; Group 2 = High Perceived Parental Involvement; Group 3 = Low Perceived Parental Involvement; Group 4 = Predominantly Perceived Parental Control.

## COGNITIVE ENGAGEMENT

Table 5 gives the descriptive statistics, by group and gender, for the two variables of cognitive engagement with homework (study focus and use of self-regulated learning strategies).

At the multivariate-level, the data suggest a statistically significant effect of the Group (perceived parental involvement profiles) ( $\lambda_{Wilks} = .891$ ;  $F_{(6,848)} = 8.420$ ;  $p < .001$ ;  $\eta_p^2 = .056$ ), but not of Gender ( $\lambda_{Wilks} = .992$ ;  $F_{(2,424)} = 1.718$ ;  $p > .05$ ;  $\eta_p^2 = .008$ ) or the

interaction of Group\*Gender ( $\lambda_{Wilks} = .983$ ;  $F_{(6,848)} = 1.207$ ;  $p > .05$ ;  $\eta_p^2 = .008$ ).

Table 6 gives the inferential statistics for each of the two dependent variables separately. The data indicate that only the Group (perceived parental involvement profiles) was found to be significantly associated with both study focus and the use of self-regulated learning strategies. Neither Gender nor the interaction between the two variables produced differences in the levels of cognitive engagement.

*Table 6*  
Differences in cognitive engagement with homework by group, gender, and interaction.

	<i>Study focus</i>			<i>Self-regulated learning Strategies</i>		
	<i>F</i>	<i>p</i>	$\eta_p^2$	<i>F</i>	<i>p</i>	$\eta_p^2$
Group	14.412	<.001	.092	13.557	<.001	.087
Gender	3.437	.064	.008	1.948	.164	.005
Group*Gender	1.582	.193	.011	0.794	.498	.006

## DISCUSSION

In this study, we aimed to examine the effect that children's perceptions of parental involvement in homework could have on their engagement with homework (motivational and cognitive). Through cluster analysis, we identified four groups of students with profiles of parental involvement that were very different from each other. We found students with perceived high levels of parental involvement in both dimensions (control and support), a group that perceived very low levels of parental involvement, a group who perceived predominantly support involvement, and lastly a group who perceived predominantly control involvement. Once we had identified these profiles, we looked at the potential relationships between the profile types and students' motivational and cognitive engagement with their homework, the relationship with gender and its relationship with student engagement, and finally, the interaction between the two factors (profile and gender) and its effect on motivational and cognitive engagement behaviors.

The data from our study of the relationship between students' perceptions of their parents' involvement in their homework and their engagement with it, from a person-centered approach, agree to some extent with findings from other studies using task-centered approaches (e.g., Valle, Pan, Regueiro et al., 2015; Valle, Regueiro, Núñez, Suárez et al., 2016). For example, Valle, Pan, Regueiro et al.

(2015) found a notable relationship between parental support involvement, as perceived by students, motivational engagement (principally intrinsic motivation), and cognitive engagement (deep study focus) with homework. The effect on attitude was significant but limited.

However, examining the perceptions of parental involvement from a person-centered approach, via cluster analysis, our study provides information that had previously been lacking, as we are unaware of any study that has used this approach.

In general terms, although just over half (around 50%) of the students in our sample perceived high levels of parental involvement in their homework, meaning both support and control, the other half had different perceptions. There were students who hardly saw involvement from their parents, although they were the smallest group, and there were students who perceived only one type of involvement (support or control). On subsequently analyzing the relationship with the students' own engagement, we found that this also varied depending on the profile, and depending on the student engagement variable.

More specifically, looking at the association between the perceived parental involvement profile and intrinsic motivation, we found that students with a profile high in both types of parental involvement demonstrated the highest levels of intrinsic motivation, that profiles with one or other type of involvement

predominating had similar levels of motivation, and that the group with the lowest perceived levels of parental involvement had the lowest levels of motivation. In other words, the important thing for motivation is for the child to perceive either type of involvement (control or support) and the worst situation is to perceive very little involvement; perceiving mainly control or mainly support involvement seems not to matter. However, when gender was taken into consideration, we found that the pattern applied only to boys, girls were a little different. For both genders the most important thing was to perceive both kinds of involvement, but when that was not the case, it was more important for girls to perceive control than support. We concluded that for girls, the control dimension of involvement was more important, motivationally speaking, and that a lack of perceived parental involvement affected their motivation less.

In terms of attitudes towards homework, we found the same general pattern we saw for girls and motivation. Higher levels of motivation were associated with a profile of both types of parental involvement, albeit very similar to levels associated with perceptions of predominantly control involvement, followed by profiles perceiving mostly support, and lastly, those who perceived little parental involvement. Once again, the most important factor was the control component of parental involvement in homework.

We found no relationship between perceived parental involvement profiles and levels of anxiety about homework. Anxiety levels were the same regardless of profile.

With the variables related to cognitive engagement with homework, both measures (study focus and self-regulated learning processes) demonstrated broadly similar patterns, with the same details already noted for motivational engagement. Firstly, higher levels of deep engagement in homework, and greater personal control of the study process occurred when children perceived high levels of parental involvement, of both types. Students had the lowest cognitive engagement when they perceived little parental involvement (of both types). Secondly, despite that, it seems that

for boys, it was enough to perceive either kind of parental involvement to sustain a moderate level of cognitive engagement with homework, whereas for girls, parental control was more important, so much so that perceived parental support involvement was almost irrelevant to girls' cognitive engagement with homework. The levels of cognitive engagement were similar in girls who perceived both types of parental involvement and in those who perceived high levels of control and little support. This was also apparent comparing the group who perceived low levels of both kinds of parental involvement with the group who mainly perceived support, for the girls those two profiles were associated with similar, very low levels of cognitive engagement with homework.

In conclusion, it seems that *more is more* when it comes to the relationship between perceived parental involvement and students' motivational and cognitive engagement with homework, although there are some differences between boys and girls. For both genders, the higher the level of parental involvement (of both kinds), the greater the students' motivational and cognitive engagement. Boys and girls differ in that girls place much more importance on parental control than boys, as high levels of parental control alone are enough to engage girls with homework. This goes so far as to say that even very low levels of support would not affect girls' motivational and cognitive engagement. However, for boys to have a certain level of motivational and cognitive engagement, they need to perceive their parents being involved, regardless of the type of involvement (control or support).

The data from our study indicate that at these early ages (i) perceived parental involvement is important for motivational and cognitive engagement with homework, but (ii) it seems that control is the most effective type of parental involvement, and the perception of support is much less important. However, (iii) this is the case for girls, as for boys, the type of involvement is not important. This need for control may be because the children are still young and need help to effectively manage their study processes. Finally, (iv) we

found that, both in motivational and cognitive engagement, in the students in groups where the perception of parental involvement was low or predominantly control type, boys had lower intrinsic motivation than girls to do homework and had more negative attitudes, and possibly as a consequence of that, had more superficial study processes (with more repetitive, less elaborate learning strategies) and made less use of self-regulation strategies in their study.

Although the data from our study are interesting, they should be taken with a certain amount of caution for a number of reasons. Firstly, the sampling of students that produced the data was by convenience, which means it is possible for a different sample to lead to different conclusions from those we have drawn. It would be useful, therefore, for other studies with independent samples to examine the relationship between parental involvement and children's engagement with homework using a person-centered approach. Secondly, the data from our convenience sample came from self-report instruments. Although the vast majority of research on this subject has used self-reports as measuring instruments, these types of instruments are well known to have significant limitations, both in terms of validity and reliability. Although the measures of reliability in this study were acceptable (all except one were greater than  $\alpha = .70$ ), it would be interesting for future research to approach the objective of our study using evaluation procedures that are complementary to self-reports (e.g., recorded work sessions, observation rubrics for parents, etc.). Lastly, in this study we approached the object of study from a general perspective. Nonetheless, it is well known that results can be different depending on the knowledge domain of the homework (mathematics, English, language, etc.). For this reason, our conclusions should be taken with caution until studies in specific domains can provide more detail or complementary data.

- **Conflict of interest.**

The authors declare no conflict of interest.

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