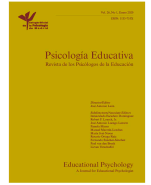




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Students' Mediator Variables in the Relationship between Family Involvement and Academic Performance: Effects of the Styles of Involvement

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ABSTRACT

The present study is aimed at observing the degree to which family support and control determine academic performance in Mathematics and Language, and at understanding how this relationship is mediated by a series of factors related to students' motivation (self-efficacy), their study habits, the learning environment perceived at school, their school satisfaction, and a history of school retention. On this premise, a study was proposed in 44 Compulsory Secondary Education (CSE) schools, selecting 1,316 students (938 enrolled in the first, and 378 in the second year). Data confirm that both parental support and control directly influence academic performance in both subjects, but also indirectly through the mediator variables, which in the case of support are environment, satisfaction, study habits and self-efficacy, whereas in the case of control they are habits and retention.

Las variables mediadoras de los estudiantes en la relación entre implicación familiar y rendimiento académico: el efecto de los estilos de implicación

RESUMEN

El presente estudio tiene como objetivo observar en qué medida el apoyo y el control de la familia determinan el rendimiento académico en Matemáticas y Lengua y comprender cómo esta relación está mediada por una serie de factores relacionados con la motivación (autoeficacia) de los estudiantes, sus hábitos de estudio, el ambiente de aprendizaje percibido en la escuela, su satisfacción escolar y su historial de repeticiones. Con esta premisa, se propuso un estudio en 44 escuelas de Educación Secundaria Obligatoria (ESO), seleccionando 1,316 estudiantes (938 matriculados en el primer año y 378 en el segundo). Los datos confirman que tanto el apoyo como el control de los padres influyen directamente en el rendimiento académico en ambas materias, pero también indirectamente a través de las variables mediadoras, que en el caso del apoyo son el ambiente, la satisfacción, los hábitos de estudio y la autoeficacia, mientras que en el caso del control son los hábitos y la retención.

The debate about family influence on school results has presented a series of actions whose positive effects on learning and academic success continue to produce studies, no matter how extensive the research trajectory may seem in this regard (Pires et al., 2017; Santos Rego, Godás, & Lorenzo, 2016; Silinskas & Kikas, 2017; Sin-Sze & Pomerantz, 2015). The term "parental involvement" is the most commonly used reference in the literature when this association is examined, which resulted in a considerable number of meta-analytic studies. They have proven the strength of this relationship, provided that the academic performance is represented by a global indicator, and not so much through records with standardized tests (Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2003, 2005, 2007, 2012, 2016).

In addition, it has been confirmed, on the one hand, that this influence goes beyond differences in the socio-economic status of families, students' gender and their ethnic group, thus affecting all groups in a similar way; on the other hand, that of all analyzed elements, parents' expectations, and socialization styles have the greatest impact on academic results (Jeynes, 2003, 2005, 2007).

Similarly, definitions of family involvement, according to Hill and Tyson (2009), provide fully nuanced evidence and thus, the type of involvement that has shown a consistent and positive correlation with academic achievement is academic socialization (Eccles & Harold, 1993; Lorenzo et al., 2017). This includes communication of parental expectations regarding achievement education values, educational aspirations promotion, learning strategies discussion,

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and availability of materials that meet the interests and goals of students and schools.

Homework-based involvement, also from the perspective of meta-analysis (Hill & Tyson, 2009; Hoover-Dempsey & Sandler, 1997), produces mixed results. It is observed that the most effective action is that in which parents provide continuous and consistent educational support, reinforcing learning, supervising school work, and providing educational resources. The same does not happen when students are helped with homework, as this limits students' autonomy, increasing their burden and causing them to become overly dependent on their parents' skills and, thus, their ability to help them.

The third definition points to school-based involvement (Comer, 1980; Epstein, 1987, 2001; Grolnick & Slowiaczek, 1994; Lareau, 1987, 2011), which prioritizes family participation in school dynamics (events, volunteering, administration, etc.). Its effectiveness has a direct impact on school functioning, which seems to direct parental support with homework, without providing them with tools, which would facilitate their involvement in these tasks (Castro et al., 2015; Hill & Tyson, 2009; Jeynes, 2016).

The present research explores the presence of variables that mediate the effects of family involvement styles on academic outcomes. To describe the styles, we only recorded students' perception, thus avoiding social desirability bias that is observed when parents describe their way of being involved (Kyriakides et al., 2014; Trautwein & Lüdtke, 2009). We also addressed variables considered as mediators and focused on the learning context displayed by students. This outlook is consistent with the approach to educational effectiveness (Creemers, 1994), in whose frame of reference the dynamic model developed by Creemers and Kyriakides (2008) plays an important role when proposing a four-factor structure (contextual, school-related, classroom-related, and student-related) as decisive in a series of educational outcomes related to cognitive, affective, and psychomotor processes, as well as to the students' new learning experiences.

At students' level, we propose a series of factors, all of them subject to temporary changes, which would directly affect academic performance (Creemers, 1994). We refer to variables related to specific learning tasks, such as study habits, perceived self-efficacy, learning environment, and satisfaction with school (Chamorro-Premuzic & Furnham, 2003; Creemers & Reezigt, 1999; Dowson & McInerney, 2003; Fernández-Alonso et al., 2017; Lee & Shute, 2010; Yotyoding & Wild, 2014).

According to the above-mentioned dynamic model, it is appropriate to simultaneously consider both student level class level when analyzing how a student perceives his/her teacher's performance. We refer to learning environment and its relationship with perception of effectiveness at the time of solving academic tasks, as well as a high level of satisfaction with school. Both associations have a positive effect on academic performance. We also refer to structuring of learning (memorization and/or comprehension), guidance criteria in performing specific tasks, explanation of each task objectives, development of skills which allow a student to make decisions about these tasks, criteria of interaction between students, and between themselves and teaching staff, climate perceived in the classroom, promotion of active participation, time management for completing tasks, perception of support and help from teaching staff, and opportunities to organize one's own learning process (Creemers, 2006; Creemers & Kyriakides, 2008; Kosir, 2005; Kyriakides et al., 2014; Muijs & Reynolds, 2001; Paris & Paris, 2001; Rohrbeck et al., 2003).

Involvement styles included in the study are the support and control perceived by students within a context combining two definitions of family involvement: academic socialization and homework, whose reference points are continuous and consistent support, and communication of educational aspirations consistent with upcoming goals of students and school (Hill & Tyson, 2009; Wilder, 2014).

It is important to note that the research on the effects of parental control on student development has revealed the outright opposition between psychological control and autonomy (Silk et al., 2003) or, more precisely, the opposition between psychological control and behavioral control (Wang et al., 2007). It was found that the most desirable consequences, in the sense of benefiting student's functioning in the academic setting, came from the deployment of a behavioral control over activities and behaviors that provided students with clear and achievable rules, as well as a guide for their needs and interests (Conger, 2009; Fernández-Alonso et al., 2017; Gray & Steinberg, 1999; Grolnick, 2003; Grolnick & Pomerantz, 2009; Grusec, 2009; Hauser & Grych, 2013; Pomerantz & Grolnick, 2009; Soenens et al., 2009).

If we refer to consistently perceived support, it was observed that perceived control neither interfered with autonomy, allowing decision making, nor with the choice of options within the context of school work, besides having a positive impact on students' academic achievements and personal adjustment (Silk et al., 2003; Smetana & Daddis, 2002; Su & Reeve, 2011; Vansteenkiste et al., 2005; Wilder, 2014).

These types of effects were also tested in cases among Primary and Secondary Education students performing tasks whose contents relate to different academic subjects, mainly Mathematics and Reading, and in other non-academic performance contexts, where control and/or support came from teachers, with confirmatory results across different cultures (Barber, Stolz, & Olsen, 2005; Chatzisarantis et al., 2007; Santos Rego, Godás, Ferraces, et al., 2016; Shek, 2008; Simpkins et al., 2015; Zhou et al., 2009). In short, both for family and teaching staff, the styles based on behavioral control and on consistent and continuous support in academic tasks have differential effects on academic achievement and the development of autonomous behavior related to school work.

The line of research followed in this work focused on the search for relationships between factors that affect academic achievement (academic performance in Mathematics and Language) and that are not alien to the intervention of families, considering involvement styles that are expressed through behavioral control and consistent support, as they are perceived by the students. Our intention is to delve deeper into the role played by the family to display these styles firmly and continuously, as well as to observe its effects on academic achievement, on the development of autonomous behaviors related to school work, and on the perception of effectiveness in the accomplishment of school tasks and welfare at school.

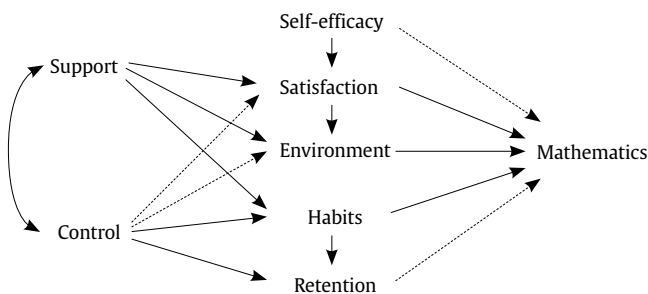


Figure 1. Conceptual Model that Illustrates the Hypothetical Relationships between Support and Family Control and the Elements that Influence Academic Performance in Mathematics (dashed lines indicate a moderate importance in the relationship).

Our study therefore has a twofold objective: 1) to observe the importance of family support and control with regard to the academic performance in the two subjects; and 2) to understand how this relationship is mediated by a series of factors related to the

students' motivation (self-efficacy), their study habits, the learning environment perceived at school, their school satisfaction, and a history of being a retained student or not (Figures 1 and 2).

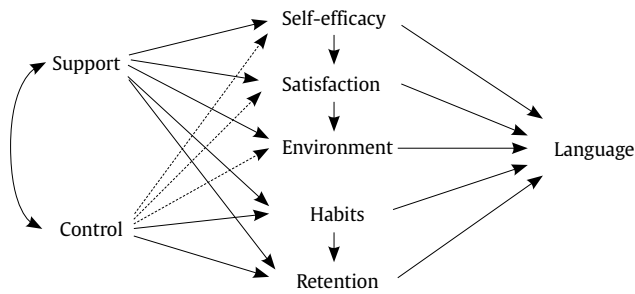


Figure 2. Conceptual Model that Illustrates the Hypothetical Relationships between Support and Family Control and the Elements that Influence Academic Performance in Language (dashed lines indicate a moderate importance in the relationship).

Method

Participants

The sample consisted of 1,316 students from 44 schools, of whom 938 (71.3%) were enrolled in first grade of Compulsory Secondary Education (CSE), and 378 (28.7%) in second grade. More than half of the sample (53.7%) were male. Their age ranged from 11 to 17 years ($M = 13.05$, $SD = .99$); 35.1% of students were retained at least once throughout their school years (6.9% in Early Childhood Education, 13.6% in Primary Education, and 14.6% in CSE). Schools had similar characteristics (they were supported by public funds, socioeconomic level of the families, presence of foreign students, etc.). Table 1 shows final results in Mathematics and Language in the school year when the questionnaire was administered.

This study was carried out in accordance with recommendations of the Bioethics Committee of the University of Santiago de Compostela (Spain). All subjects (fathers and mothers) gave written informed consent in accordance with the Declaration of Helsinki.

Table 1. Final Results in Mathematics and Language (%)

	Mathematics	Language
Poor	37.2	39.8
Fair	18.3	19.5
Good	14.5	13.4
Very Good	18.2	21.0
Excellent	11.8	6.3

Measures

A questionnaire with closed-ended and categorical questions about students' sociodemographic profile (gender, grade, age, and retention) was administered, along with a 6-point Likert-type scale (with five-response choices) to evaluate variables that may influence students' academic performance: perception of support and family control (father/mother/guardians), study habits, learning environment, satisfaction with school, and self-efficacy. Concerning its design, we started from a questionnaire already used in another research study (Santos Rego, Godás, Ferraces et al., 2016), but in line with objectives of this study. Thus, on the one hand, certain four-scale items (support, control, satisfaction, and learning environment) were eliminated and, on the other, two new scales were included (study habits and self-efficacy). Exploratory factor analysis (EFA) of each of the used scales indicated good reliability and structural validity. This is detailed below.

Family control scale. The questions referred to parents' or guardians' degree of control (1 = none, 2 = little, 3 = some, 4 = enough, 5 = a lot) on 6 issues, such as timing of leaving or returning home, friends with whom children built a relationship, what they did outside the home, what they spent their money on, their class attendance, and the time spent studying every day at home. The EFA yielded a significant factor, explaining 64.45% of variance and reliability ($\alpha = .890$).

Family support scale. Made up of 10 items, this scale referred to support in terms of encouraging people to do things as well as possible, helping with problems or school work, perception of trust, respect or concern, and clear communication of expectations. Five-response choices were used (1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *almost always*, and 5 = *always*). In this case, a significant factor was also obtained, whose explained variance was 64.59%, and α reliability = .918.

Learning environment scale. Made up of 8 items with five-response choices (1 = *strongly disagree*, 2 = *somewhat disagree*, 3 = *indifferent*, 4 = *somewhat agree*, 5 = *strongly agree*), it referred to aspects such as teachers' teaching style, reinforcement strategies for students, public recognition for work well done, the use of group work, sufficient time available for homework, promotion of autonomy in students, and general assessment of classes received. Once again, a significant factor was obtained with an explained variance of 50.16% and α reliability = .781.

Study habits scale. The scale consisted of 7 statements, referring to exam preparation techniques, schedules, and factors that hinder or distort study (watching TV, listening to music). The response scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). In this case, explained variance practically reached 50% (49.97%), whereas α reliability = .640.

School satisfaction scale. The questions (6) referred to level of satisfaction with subjects studied, the way to assess them or relationships with their teachers. Students had 5-point response choices (1 = *very dissatisfied*, 2 = *quite dissatisfied*, 3 = *indifferent*, 4 = *quite satisfied*, 5 = *very satisfied*). Once again, a significant factor was obtained, with an explained variance of 49.27% and $\alpha = .827$.

Self-efficacy scale. Self-efficacy was measured using three items: "I want to finish my studies and then go to university", "It takes me a long time to overcome failure", and "I always need someone to do my homework". The response scale ranged again from 1 (*strongly disagree*) to 5 (*strongly agree*). The reliability reached $\alpha = .775$ and explained variance was 54.22%.

Academic achievement. It was obtained from the grades achieved in the academic year: poor (0-4.9), fair (5), good (5.1-6.9), very good (7-8.9), and excellent (9-10).

Procedure

For the application of the questionnaire, which is anonymous, educational authorities were instructed to initially request permission, and afterward families were informed. The questionnaire was administered collectively in the classroom, using tutors of each group especially trained, not only for this task, but also within the framework of a broader data collection for an educational research project, which involved implementation of a socio-educational program aimed at families and schools.

Data Analysis

In order to find the dimensionality of the measuring instrument, an exploratory factor analysis (EFA) was carried out, with the aim of obtaining structural validity and reliability of each scale. The results are presented in the Instruments section.

Next, a correlation analysis was performed among all the variables. The objective was to observe the type of relationship to academic

Table 2. Descriptive Statistics and Correlations among Variables ($N=1,316$)

	Mathematics	Language	Support	Control	Learning environment	Habits	Satisfaction	Self-efficacy
Mathematics								
Language	.72**							
Support	.15**	.16**						
Control	.24**	.25**	.58**					
Environment	.04	.05	.28**	.08				
Habits	.27**	.31**	.26**	.29**	.09*			
Satisfaction	.21**	.27**	.32**	.18**	.56**	.25**		
Self-efficacy	.17**	.20**	.21**	.18**	.22**	.17**	.23**	
Retention	-.40**	-.45**	-.17**	-.26**	.005	-.26**	-.17**	-.18**
M	2.50	2.32	3.97	3.65	2.24	3.34	2.28	4.24
SD	1.38	1.39	0.63	1.02	0.71	0.77	0.78	0.57
Skewness	0.440	0.416	-0.701	-0.979	0.459	-0.492	0.272	-1.092
Kurtosis	-1.104	-1.047	0.416	0.712	0.657	0.875	0.201	1.296

* $p < .05$, ** $p < .01$, *** $p < .001$.

performance in Mathematics and Language, and between them, as a previous step to the proposal of an explanatory model of performance. There were no missing values. AMOS 22 statistical package was used in this sense.

Finally, a mediational analysis was conducted, taking parental support and control as independent variables, and variables related to student learning as potential mediating variables. In this case, PROCESS procedure for SPSS (license of the University of Santiago de la, Spain), version 3.00, was used (Hayes, 2018). The bootstrap method was implemented, corresponding to AMOS 22 program, with 500 repetitions, and establishing a 95% confidence interval. We used bias corrected percentile method, which accepts that results of estimates are robust and are not therefore affected by lack of normality (Byrne, 2001).

Results

Table 2 shows means, standard deviations, skewness, kurtosis and bivariate correlations between measures. All variables, except for learning environment, correlate significantly with academic performance in Mathematics and Spanish Language.

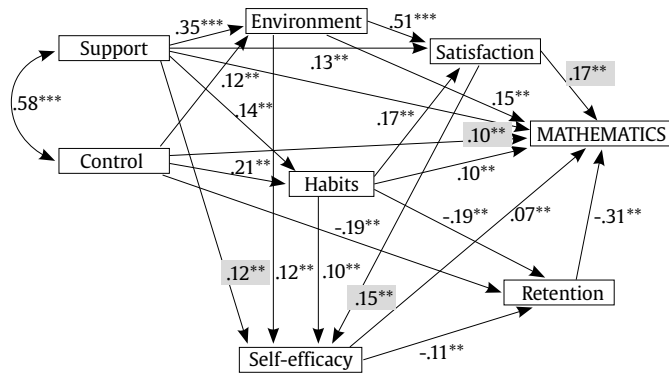


Figure 3. Structural Equation Model for Mathematics Performance. * $p < .05$, ** $p < .01$, *** $p < .001$.

It was observed that the retention variable showed a significant correlation, in the negative sense (-.40 and -.45 in Mathematics and Language, respectively), followed by study habits (.27, .31) and parental control (.24, .25) in a positive sense. In other words, the higher performance in these two subjects is related to better study habits, greater parental control, and a lower retention rate.

In view of results obtained in the correlational analysis, an explanatory model of academic performance in Mathematics and Language was proposed, taking parental support and control as independent variables and the other variables as possible mediating variables, that is, learning environment, study habits, self-efficacy, satisfaction, and retention vs. non-retention.

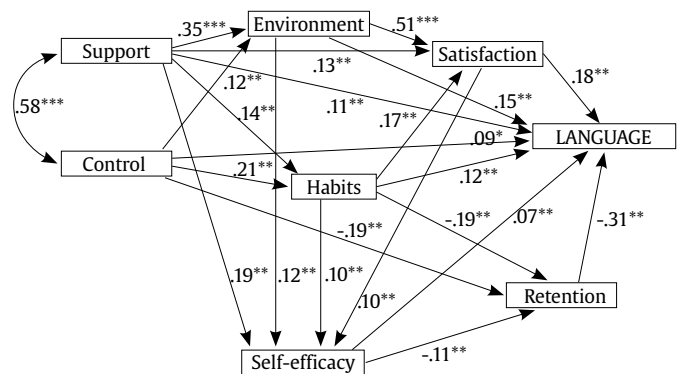


Figure 4. Structural Equation Model for Language Performance. * $p < .05$, ** $p < .01$, *** $p < .001$.

As shown in Figures 3 and 4, the models are practically the same for both subjects. Only coefficients that stand out in Mathematics model vary considerably. This is explained by the fact that in both cases what changes is the dependent variable, while the range of grades is the same.

The model interpretation was approached in three sections: model fit, analysis of most remarkable relationships among variables and, finally, the study of possible mediation.

Firstly, analysis of degree of global fit is shown in Table 3. Although χ^2 was significant, it was observed that GFI and CFI are $> .95$ in both models, RMSEA is $< .08$ also in both cases, and SRMR is below .05. Therefore, it could be concluded that the proposed model has a good fit. Based on previous analysis, an interpretation of the mathematical model was carried out, since data provided can also be extrapolated to the language model.

Secondly, in order to interpret the most remarkable relationships among variables, we first focused on control and then on support. However, we should first note (see Figure 3) that both variables are related ($\beta = .58$, $p < .001$). Thus, control and support are not incompatible for families.

Starting with control, it was observed that this variable directly influenced academic performance in Mathematics ($\beta = .10$, $p < .01$).

Table 3. Goodness-of-fit Indicators in Mathematics and Language

	χ^2	df	p	χ^2/df	GFI	CFI	RMSEA [CI]	SRMR
Mathematics	48.50	6	.000	6.06	.99	.98	.062 [.046, .079]	.022
Language	34.59	6	.000	4.94	.99	.99	.055 [.037, .074]	.019

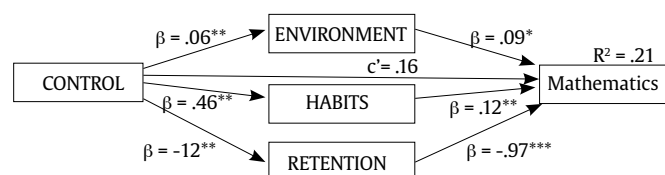
However, it also influenced learning environment ($\beta = .12, p < .01$), study habits ($\beta = .21, p < .01$), and retention or non-retention ($\beta = -.19, p < .01$). We are able to conclude that all these variables are potential mediators between parental control and academic performance in Mathematics. A mediating variable is an integral part of a cause-effect relationship, which makes it easier to understand why, or through what mechanisms, control, in this case, affects students' performance.

Conversely, it was found that support also had a direct influence on performance in Mathematics ($\beta = .09, p < .05$), learning environment ($\beta = .35, p < .001$), study habits ($\beta = .14, p < .01$), satisfaction with school ($\beta = .13, p < .01$), and perception of self-efficacy ($\beta = .12, p < .01$). As in the previous case, these variables are potential mediators between support and performance in the subject. It was noted that potential mediating variables vary for parental control and support, although learning environment and study habits are introduced in both models.

Thirdly, the study of mediation was conducted following the previously proposed scheme, that is, taking separately into account control and support variables.

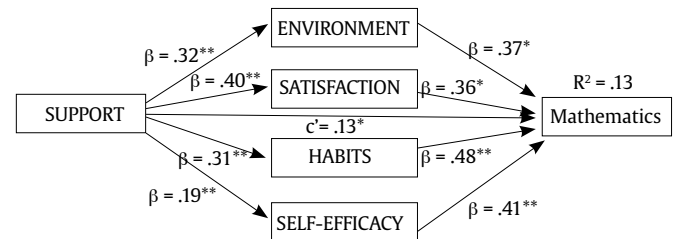
Relationship between Control and Performance in Mathematics Mediated by Environment, Habits and Retention

The analysis of mediation showed that 21% of variance in academic performance in Mathematics was explained by control and potential mediating variables, that is, environment, habits, and retention vs. non-retention. Total effect ($c = .33, 95\% \text{ CI } [.260, .401]$) and control direct effect ($c' = .16, 95\% \text{ CI } [.090, .229]$) indicated that only part of the effect of the independent variable on the dependent variable was mediated by these three, in such a way that control maintained part of its direct influence on performance. That is, control directly influences academic performance, and also indirectly, through mediating variables (Figure 5).

**Figure 5.** Diagram of the Mediator Model with Environment, Habits, and Retention as Mediators between Control and Academic Performance in Mathematics.

* $p < .05$, ** $p < .01$, *** $p < .001$.

As observed in Table 4, habits and retention mediate the effect of control on academic performance in Mathematics, the retention variable having the highest degree of importance and in the negative sense ($\beta = -.97, p < .001$), that is, the more control the fewer students' retention. The environment does not finally act as a mediating variable between control and academic performance.

**Figure 6.** Diagram of the Mediator Model with School Satisfaction, Habits, and Self-efficacy as Mediators between Support and Academic Performance in Mathematics.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Relationship between Support and Performance in Mathematics Mediated by Satisfaction with School, Environment, Self-efficacy, and Habits

The analysis of mediation indicated that 13% of the variance in academic performance in Mathematics was explained by support and potential mediating variables, that is, environment, satisfaction with school, habits and self-efficacy. Total effect ($c = .32, 95\% \text{ CI } [.208, .441]$) and support direct effect ($c' = .13, 95\% \text{ CI } [.011, .252]$) proved that support directly influences academic performance and, indirectly, through mediating variables (Figure 6).

In this case (Table 5), environment, satisfaction with school, habits and self-efficacy mediate the effect of support on academic performance in Mathematics, with the habit variable being the most significant ($\beta = .48, p < .001$). Thus, the more support the better habits and the higher performance. It is followed by self-efficacy ($\beta = .41, p < .001$), environment ($\beta = .37, p < .01$) and satisfaction with school ($\beta = .36, p < .01$).

Discussion

The present study was based on students' perceptions regarding styles of parental involvement, assuming that these perceptions are most adequate for the objectives we pursue, thus joining the line of research that these indicators used for describing quality of one's own parenthood (Fernández-Alonso et al., 2017; Skinner et al., 2005).

The obtained data showed that both support and control directly influence academic performance in the two basic instrumental subjects of our study program, subject of our analysis, that is, Mathematics and Language (Van Voorhis et al., 2013). In any case, it was also found that the effects of both styles were practically the same for the two subjects (Miñano et al., 2012).

If each of the independent variables is examined, it can be stated that, considering data (see Table 5), support directly influences academic performance and, indirectly, through mediating variables, influences satisfaction, environment, study habits, and perception of self-efficacy. However, the variable that most mediates the effect of support on academic performance in Mathematics and Language, is study habits. Thus, the greater the amount of support the better habits and the higher performance. In the area of Language, Pires et al. (2017) concluded, with a sample of Portuguese children, that parental support influences children's achievement in their native language, although the degree thereof differs according to gender.

Table 4. Total, Direct and Indirect Effects of Control and Academic Performance Mediated by Environment, Habits, and Retention

	Effect	Boot SE	Below 95% CI	More than 95% CI	p
Total effect of X on Y (c)	.33	.04	.260	.401	.001
Direct effect of X on Y (c')	.16	.03	.090	.229	.001
Indirect effects					
Environment	.05	.04	.010	.077	ns
Habits	.06	.01	.034	.082	.003
Retention	.12	.02	.090	.149	.001

Table 5. Total, Direct and Indirect Effects of Support and Academic Performance Mediated by Environment, Habits, and Retention

	Effect	Boot SE	Below 95% CI	More than 95% CI	p
Total effect of X on Y (c)	.32	.03	.208	.441	.001
Direct effect of X on Y (c')	.13	.03	.011	.252	.033
Indirect effects					
Environment	.12	.02	.110	.170	.030
School satisfaction	.16	.01	.026	.106	.001
Habits	.11	.02	.070	.153	.001
Self-efficacy	.05	.01	.030	.081	.001

Similarly, control (see Table 4) not only has a direct influence on performance in Mathematics, but also does so through two variables that act as mediators (retention and study habits). That is, greater control by the parents leads to better study habits and lower retention rate, which implies higher school performance. On the other hand, the results obtained by Alvarez et al. (2015) suggested that family involvement was mainly indirectly related to academic performance (mediated by students' self-concept).

Following the same line of research, Rodríguez et al. (2017), using a sample of Primary Education students, concluded that perceived parental involvement contributed to children's motivation in Mathematics by transmitting confidence in their abilities and by showing interest in their progress and school work. In addition, this parental attitude could mean a more effective contribution to their children's motivation than helping them directly in academic tasks in terms of supervision of homework or study time at home.

However, the study conducted by Fernández-Alonso et al. (2017) with second-grade secondary students concluded by appealing for less parental control and more communication. These authors stated that the way parents were involved in their children's education had differential effects on their academic performance. Contrary to our findings, they argued that control correlated negatively with academic achievements, communicative style being positively related.

Our study showed that the relationship between both styles was very consistent, indicating that they were family activities connected in different situations. Curiously, Fernández-Alonso et al. (2017) came to the same conclusion when stating that the two styles (control and communication) were neither independent, nor correlate positively, nor are stable. Students who perceived greater parental control also reported that they had better communication with their parents about school issues, suggesting to the authors the need to find an appropriate balance between the amounts of direct help that parents give their children, support, and promotion of autonomy.

Sin-Sze and Pomerantz (2011) examined parental participation in the learning process of their children in the United States and China. Children reported on their parents' involvement in their learning process, as well as on their support and psychological control every six months until the end of eighth grade. Parental involvement was less associated with control and more with their support for autonomy. In any case, the greater participation of parents the greater prediction of commitment and school success of their children in the two countries (Sin-Sze & Pomerantz, 2015).

Similarly, Santos Rego, Godás, Ferraces et al. (2016) found a significant direct relationship, both in families and children, between control of hours spent studying at home and help requested in school tasks. Absence of psychological control and presence of granted autonomy have positive effects on adolescents' functioning in the academic setting (Wang et al., 2007). In addition, there are data that indicate that behavioral control and support for autonomy are strongly associated with adolescents' academic achievement and behavioral adjustment (Barber et al., 2005).

One should bear in mind that children's invitation for their parents to participate in their academic tasks had a particularly great impact on the model proposed by Hoover-Dempsey and Sandler (1997). Its importance for and impact on performance in Mathematics and students' study habits were established as an antecedent of the parental style based on autonomy and perception of interest among parents, always from students' perspective, regarding school issues and homework (Green et al., 2007; Yotyoding & Wild, 2014).

On the contrary, Silinskas and Kikas (2017), in a longitudinal study carried out in an Estonian school, examined the association between children's perception (enrolled in 3rd to 6th degree) of control and support of their parents in the Mathematics homework tasks as well as their performance and motivation in this subject. Results showed that perceived support was related to an increase in task persistence during homework, whereas parental control was particularly detrimental to task persistence and mathematical self-concept.

In short, our results suggest that family control and support influence students' performance in Mathematics and Language, but also through students' variables. Despite this, it should be noted that performance is more closely correlated to control than to support as shown by data. This may be related to subjects' age in the sample and to the control measure used in this study which places particular emphasis on perception of supervision vs. parents' monitoring or directivity-monitoring of students' academic performance.

Educational Implications and Study Limitations

This research supports the need to establish family education programs in schools, in collaboration with the community (Epstein, 2001). The aim is to help families to be effectively involved in the education of their adolescent children. And, even if it is clear that one of their tasks is to provide them with support, this should not be incompatible with control and should not substantially impair their autonomy.

However, this research has limitations. As stated in the title, our study focused on variables which analyzed relationships between family involvement and academic performance. Although our model explained a significant percentage of performance in Mathematics and Language, considering the number of influential variables (individual, contextual, family-related, etc.), it would also be interesting to include, in further research on the subject, variables that can act as moderators in a model of mediation similar to the one proposed (which is known in methodological literature as “moderate mediation”). This refers to sociodemographic variables and other variables, including some of a stable nature, such as time available for parental involvement.

In addition, one should bear in mind that mediation results of this research may vary if we used a longitudinal study instead of a cross-sectional study. In any case, for future research we can divide the sample into two equal parts and compare results of one sample to results of the other sample.

Conflict of Interest

The authors of this article declare no conflict of interest.

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