



Parental Support, Student Motivational Orientation and Achievement: The Impact of Emotions

Lourdes Mata^a, Isaura Pedro^b and Francisco J. Peixoto^a

^aInstituto Universitário, CIE – ISPA, Lisbon, Portugal

^bEscola Superior de Educação do Instituto Politécnico de Setúbal, Portugal

This paper investigates the potential effects of parental involvement at home on student motivational orientation in school work and achievement and how such effects may be mediated by the perceived emotional quality of parent-student interactions (positive and negative). The participants in the study included 631 students in the 2nd and 3rd cycle of compulsory education (5th to 9th grade) from 6 schools in the Lisbon area in Portugal. Students' age ranged from 10 to 16 years ($M=12.8$; $SD=1.64$) with 53% being female. Hierarchical analysis using structural equation modeling was carried out, taking into consideration three sets of variables (background, perceived parental involvement and emotions) to predict schoolwork self-regulation and academic achievement. Results emphasized the role of emotions, highlighting the importance of affective components in parent-child interactions in order to understand the students' motivational orientation and academic achievement.

Keywords: Parent support, student motivation, emotions

First submission 12th April 2018; Accepted for publication 6th August 2018.

Introduction

The importance of parental involvement in students' school learning and education is a well-established research field, identifying different benefits of parental involvement not only in academic achievement (e.g. Jeynes, 2007, 2012), but also in other aspects such as motivation, school behaviour, and absenteeism (e.g. Luo, Aye, Hogan, Kaur, & Chan, 2013; Sheldon & Epstein, 2002, 2004). A consensus is starting to be reached that parental involvement needs to be conceptualized as multidimensional (e.g. Bakker & Denessen, 2007; Kohl, Lengua & MacMahon, 2000). One way to differentiate parental involvement is to take into

¹ Corresponding author. Email address: lmata@ispa.pt

consideration both school based and home based involvement (Hoover-Dempsey, Walker, Sandler, Whetsel, Green, Wilkins, & Closson, 2005; Kohl, Lengua, & McMahon, 2000). School-based involvement refers to attendance in school activities and the opportunity for parents and teachers to create mutual respect and understanding (e.g. attending school meetings, supporting school events, talking to teachers or volunteering at the school). Home-base involvement refers to different forms of assisting in a child's education outside of school (e.g. homework, talking with children about what happens in class/school, responding to academic study demands). Based on this dichotomy, research sometimes focuses on one or the other type of involvement, or focuses on different practices and behaviours (e.g. Jeynes, 2007, 2012).

Researchers have proposed different theoretical models summarizing the main variables, their role, and the relationships between these variables and students' behaviour or academic achievement (e.g. Eccles & Harold, 1996; Grolnick, Benjet, Kurowski, & Apostoleris, 1997; Hoover- Dempsey & Sandler, 1995; Hoover- Dempsey et al., 2005). These have been the impulse for a wide range of studies attempting to confirm, identify or combine new variables in order to reach a broader understanding of the complexity and benefits of parental involvement in children's education.

Parental involvement and academic outcomes

Over the past fifteen years several meta-analyses have been conducted of studies on parental involvement and student achievement (e.g. Castro, Expósito-Casas, López-Martin, Lizasoain, Navarro-Asencio, & Gaviria, 2015; Hill & Tyson, 2009; Jeynes, 2007, 2012). All of these meta-analyses concluded that parental involvement had significant positive effects, although the results of the global effect size varied significantly. Variables associated with the heterogeneity of these results were wide ranging but the type of parental involvement, the characteristics of the participants (e.g. ethnicity, grade) and the type of achievement measure used (e.g. Hill & Tyson, 2009; Jeynes, 2012; Patall, Cooper & Robinson, 2008) were most frequently mentioned. A recent meta-analysis of parental supervision and control of homework and parents attending school activities found that these were unrelated to student achievement (Castro et al., 2015). However, communication with children concerning school activities and school work and the promotion of reading habits were found to be important variables in explaining the relationship between parental involvement and academic achievement (Castro et al., 2015). Patall et al. (2008) emphasize that, despite the fact that parental involvement in homework was usually positively linked to achievement, this relationship may not be a simple one taking into account the contradictory results found. The authors maintain that these differences may occur because studies on the relationship between achievement and parent involvement in homework use correlational methods and the relationship may be bidirectional (Cooper, Lindsay, & Nye, 2000; Patall et al., 2008). Thus parental involvement in homework may improve student achievement, but with differences in support and in the impact of the support. So, for example, in the case of low-achieving students, they need and may receive more parental support, and can improve their learning as a result even if their grades may not improve. Additionally this relationship can be influenced by several factors, such as the strategies used by parents, the resources and their support skills or the child's age and ability level (Patall et al., 2008). In line with these findings, Gonida and Cortina (2014) maintain that parental involvement is beneficial for learning

and achievement only under certain conditions and identify some factors as critical ones, namely the type of homework involvement (e.g., autonomy support, interference), grade level, student level and subject matter.

Parental involvement and motivation

Gonzalez-DeHass, Willems, and Holbein (2005) reviewed thirteen studies on the relationship between parental involvement and motivation. Parent involvement was analyzed in different ways (e.g. parent–teacher conferences, school activities, activities at home, homework) and motivation conceived from different frameworks (e.g. intrinsic/extrinsic, academic school engagement, mastery/performance goal orientation). Despite these differences, research revealed important relationships between parental involvement and motivation. In general, when parents are involved, students are more interested, take personal responsibility for their learning, seek challenging tasks, persist through academic challenges, report more effort and concentration, attention and have higher perceived self-efficacy. Encouragement, praise, interest and involvement are related with intrinsic motivation, and mastery goal orientation for learning. However, positive associations were not the only ones identified in these studies. When parental involvement was perceived as over-controlling, and parents used extrinsic rewards, students had more extrinsic motivation and performance-oriented goals. On the other hand, autonomy-supporting parents promoted student mastery goals resulting in better achievement (Gonida & Cortina, 2014; Gonzalez-DeHass et al., 2005; Gurland & Grolnick, 2005). These results suggest that it may be important to consider not only the different ways parents are involved but also the different styles of parent/child interactions.

Parental involvement and emotions

Research on emotions in educational settings highlights the important role emotions play in the learning processes (e.g. Knollmann & Wild, 2007; Meyer & Turner, 2006; Peixoto, Sanches, Mata, & Monteiro, 2016; Pekrun, 2006, 2009; Pomerantz, Wang, & Ng, 2005). The Control-Value theory (Pekrun, 2006, 2009) posits that control and value appraisals are proximal determinants of achievement emotions, that is, emotions tied to achievement or outcomes. As Pekrun, Frenzel, Goetz, & Perry, (2007, p. 16) state, “individuals experience specific achievement emotions when they feel in control, or out of control, of achievement activities and outcomes that are subjectively important to them”.

Control-Value theory also maintains that these appraisals are influenced by other more distal social, cognitive and non-cognitive factors (e.g. achievement goals, beliefs, feedback, autonomy support, quality of instruction, expectancies). Emotions, motivation and self-regulation are linked to their antecedents and effects through reciprocal causation which can result from positive or negative ‘feedback loops’ (Pekrun, 2006). Therefore, the social environment shapes emotions in the same way as student emotions impact the social environment. In addition, emotions can affect learning strategies, motivation, self-regulation, learning and achievement, although achievement also influences all student appraisals and emotions (Pekrun, 2006; Pekrun et al., 2007).

Grolnick and Slowiaczek (1994) emphasised the importance of the child's perception of parent's affective and personal availability in parental involvement. Despite the positive benefits of parental

involvement, research also shows that involvement may lead to negative experiences for parents and students as it can cause tension between parents and children (Cooper, Lindsay, & Nye, 2000; Knollman & Wild, 2007; Levin, Levy-Shiff, Appelbaum-Peled, Katz, Komar, & Meiran, 1997; Patall, et al., 2008; Pomerantz et al., 2005). Levin et al. (1997) reported that mothers of weaker students helped with homework more and this increased maternal emotional cost (e.g. fatigue, frustration, disappointment) and caused tensions between mother and child, particularly when they are underachieving students. Helping decreased with grade, as did the mothers' personal gratification from helping. Evidence suggests that a positive affective relationship between parents and children is necessary for academic achievement and has long-term implications for the development of the child's self-regulation (Dearing & Tang, 2010).

The strategies of parent involvement in a home-learning context are key to supporting children's efforts and facilitating the development of academic skills and motivational resources. Parents also provide emotional safeguarding of a child's reaction to the school experience, and provide positive emotional associations that enhance the child's well-being and mental health, protecting them from internalising problems (Pomerantz, Moorman, & Litwack, 2007; Warner, 2010). The experience of positive emotions, fun and pleasure, may help children to open up to new information and ideas and help to overcome difficulties. Positive experiences may allow children to take into account other points of view and to be able to facilitate better negotiation (Rimé, 2005). However, helping children with homework can create strong negative emotions in the family that may hinder rather than support children as learners and the experience of this negative affect can undermine sense of competence and contribute to negative beliefs in oneself and self-worth over time (Pomerantz & Rudolph, 2003).

Present study

The main aim of this study is to examine the potential effects of the perceived emotional quality of parent-student interaction on students' motivational orientation for school work (autonomous/controlled) and achievement. It was hypothesised that there is a positive relationship between parental involvement not only with autonomous orientation for school work but also with academic achievement. In addition, emotions felt in parental involvement situations were expected to contribute towards explaining the relationship between parental involvement and both motivational orientation for school work and academic achievement. To test these hypotheses and the effects of the different variables in explaining the motivational orientation for school work and academic achievement variables were included in the model in several steps. Thus, the model was tested by including background variables (e.g. gender, grade and mother's academic qualification) followed by parental involvement. The last set of variables included were positive and negative emotions felt by students about parental involvement.

Method

Participants

The participants included 631 students attending the 2nd and 3rd cycle of compulsory education (5th to 9th grade) in 6 schools in Lisbon, Portugal. Students' age ranged from 10 to 16 years ($M=12.8$; $SD=1.64$), and

53% were female. 21.7% of students came from families in which mothers had a college education, 29.7% had finished secondary education, 28.8% had completed the 3rd cycle (7th to 9th grade) of compulsory education and 19.7% had done the 1st or 2nd cycle (1st to 4th and 5th to 6th grades respectively) of compulsory education.

Measures

Perceived Parental Involvement. This is a 17 item scale based on Hoover-Dempsey and Sandler's (1995) measure of parental involvement adapted for Portuguese students by Pedro (2010). It includes items related to home-based involvement, tapping both parental support for learning (e.g. "My parents help me to correct homework") and communication (e.g. "My parents talk with me about the subjects that we talk in class"). Reliability is acceptable with a Cronbach's alpha of .916.

Parent-child Involvement Emotions Questionnaire. A 15 item scale based on a previous adaptation of the Academic Emotions Questionnaire (AEQ) for Portuguese students (Peixoto, Mata, Monteiro, Sanches, & Pekrun, 2015) was used. This version focused specifically on emotions concerning parent support in their child's education, and took into consideration positive (enjoyment, e.g. "I feel good when I talk with my parents about school subjects", $\alpha = .903$) as well as negative emotions (anger, e.g. "When I talk with my parents about grades we feel anger", $\alpha = .748$ and anxiety, e.g. "I feel nervous when my parents help me in schoolwork", $\alpha = .703$). Confirmatory factor analysis confirmed the three factor structure, $\chi^2 (df = 87, N = 622) = 215.2$, CFI = .97, RMSEA = .049). Since the latent variables anxiety and anger were highly correlated (.97), it was decided to join them together into a single factor titled 'negative emotions' ($\alpha = .840$).

Items on both the *Perceived Parental Involvement Scale* and the *Parent-Child Involvement Emotions Questionnaire* were answered on a 6-point Likert-type scale ranging from 1 (*Never*) to 6 (*Very Often*).

Students Homework Self-regulation Questionnaire. This 12-item scale assesses children's style of academic achievement regulation related to homework, and was adapted from the Academic Self-Regulation Questionnaire (Ryan & Connell, 1989). Items tap four types of reasons associated with the Self-Determination Theory of autonomous regulation (Ryan & Connell, 1989), with three items each: external, introjected, identified, and intrinsic. A 4-point Likert-type scale ranging from 1 (*Completely different from me*) to 4 (*Exactly like me*) was used to collect data. The four factor model did not fit the data well, which led to its reformulation as a two factor solution, namely controlled regulation (including 3 items on extrinsic and one on introjected regulation), and autonomous regulation (including the three items on both identified and intrinsic regulation. CFA for this model showed adequate fit to data, $\chi^2 (df = 33, N = 622) = 139.1$, CFI = .96, RMSEA = .072. Cronbach's alphas were .718 for controlled regulation and .852 for autonomous regulation.

Academic Achievement. School grades in Portuguese, Mathematics, History and Sciences at the end of the second term were used as indicators of academic achievement.

Demographic variables. Demographic information was collected simultaneously with the administration of the questionnaires described previously.

Data Analysis

Structural equation modelling using Amos Version 21.0 (Arbuckle, 2012) was used to address the research questions. To build the latent variables into the model, the items were parceled in groups of two or three using a balancing approach (Little, Rhemtulla, Gibson & Schoemann, 2013), in which the item with the highest factor loading is paired with the item with the lowest factor loading. The item with the second higher factor loading is then paired with the second lowest item, and so on. The sole exceptions were the variables Controlled Regulation and Academic Achievement, which comprised four single items.

The analyses were conducted using maximum-likelihood estimation. In order to assess the goodness of fit of the model, three indexes were used in addition to the chi-square test: the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), for which values below .90 mean a poor fit and values equal to 1 indicate a perfect fit (Kline, 2011); and the Root Mean Square Error of Approximation (RMSEA) which must present values close to 0. Browne and Cudeck (1993) have suggested that this value must be lower than .08. However, other authors argue that acceptable values of RMSEA must be lower than .05, with a narrow confidence interval (Raykov & Marcoulides, 2006).

Results

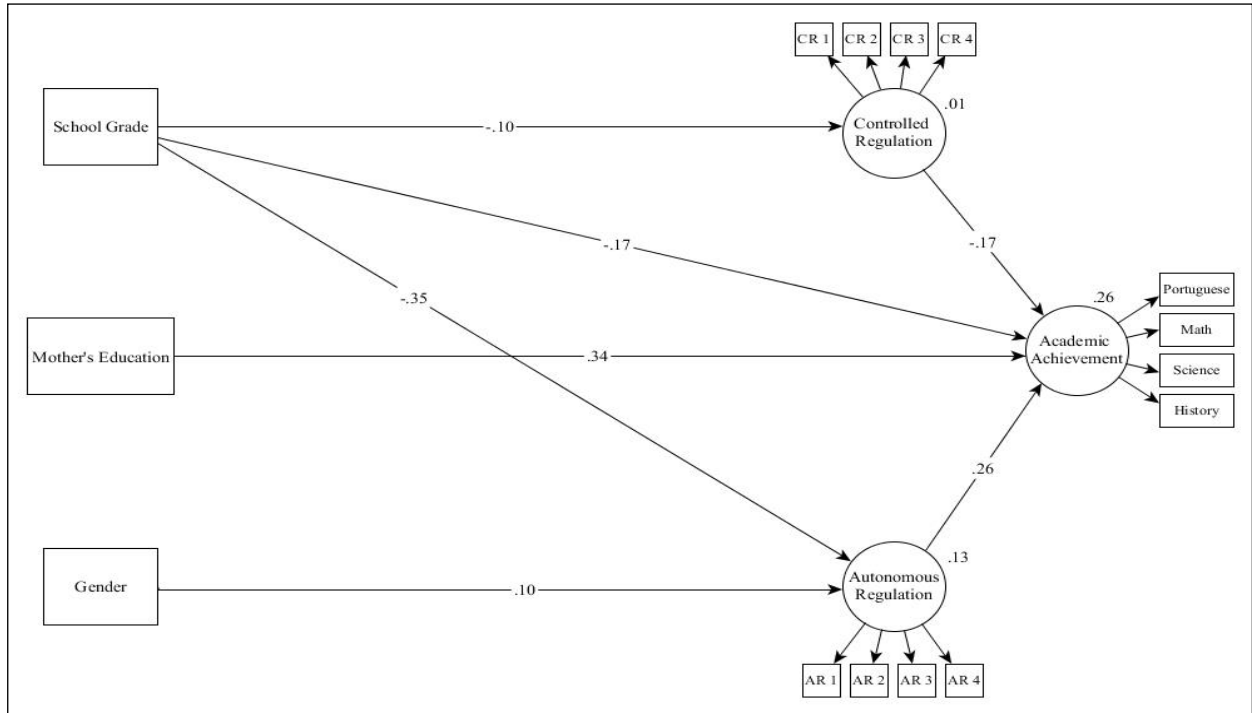
The correlation matrix of all the variables for the entire sample is shown in Table I. Results show a strong correlation between perceived parental involvement and positive emotions. Positive emotions also show strong correlations with autonomous regulation. Negative emotions correlate moderately and negatively with most of the variables in the analysis (positive emotions, internal regulation, and academic achievement), and weakly with perceived parental involvement. Academic achievement is moderately correlated with almost all variables, with the exception of controlled regulation. In addition to academic achievement, grade correlates with perceived parental involvement, positive emotions and autonomous regulation. The mother's educational background correlates moderately with parental involvement and academic achievement.

In order to test the relationship between background, parental involvement and emotions with homework self-regulation and academic achievement, a hierarchical analysis was carried out using structural equation modelling. In this analysis we have taken into consideration three sets of variables. The first set, titled background variables, included gender, school grade and mother's academic qualification; the second included perceived parental involvement, and the third comprised perceived emotions (positive and negative emotions). The model tested presented acceptable fit (Step 1 of the Model: CFI-.95, TLI-.94, RMSEA - .057 [.048, .065]; Step 2 of the Model: CFI-.95, TLI-.94, RMSEA - .055 [.049, .060]; Step 3 of the Model: CFI-.95, TLI-.94, RMSEA - .049 [.045, .053]). In the model the three sets of variables (background, perceived parental involvement and perceived emotions) were found to be significant predictors of homework regulation and academic achievement. The first set (Fig. 1) including the background variables, explained 26% of the academic achievement variance, and mother's academic qualification relates significantly to academic achievement, whereas gender is related to autonomous regulation. School grade is related to regulation (both controlled and autonomous) and to academic achievement, being the main predictor of autonomous regulation.

Table I. Means, Standard Deviations, and Correlations amongst the variables in the study

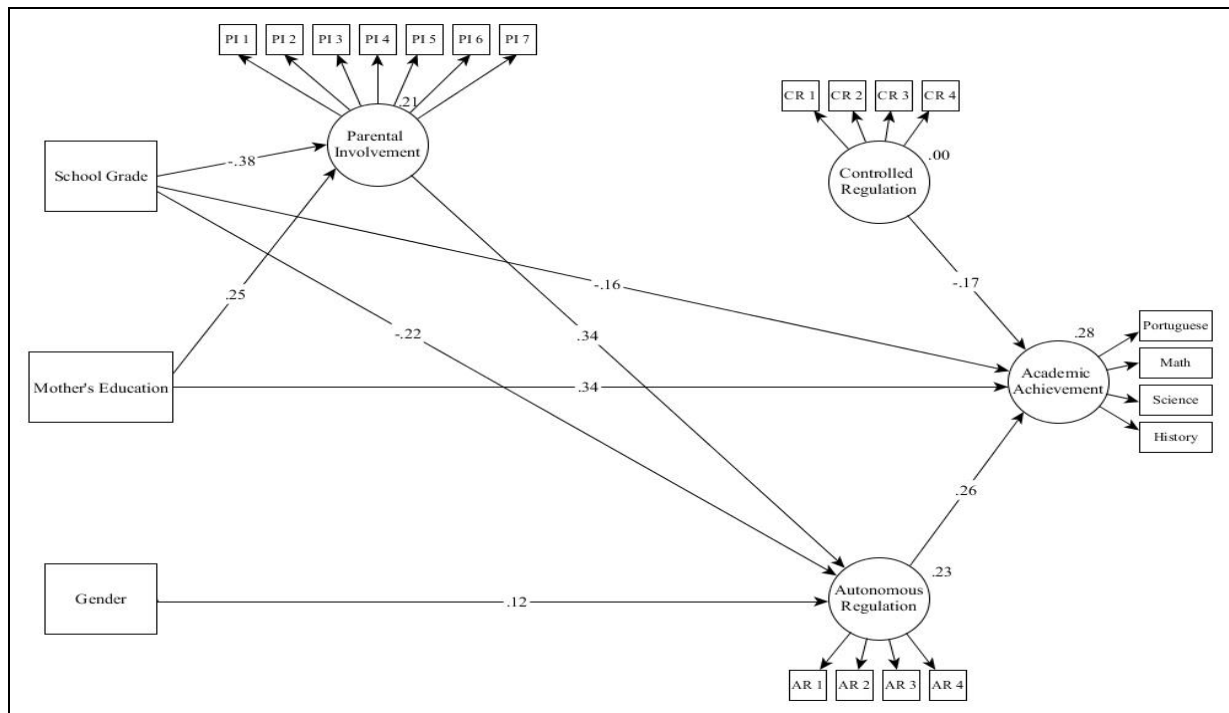
	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1 Grade	---	---	---							
2 Mother's Educational Background	---	---	0	---						
3 Parental Involvement	4.45	1.03	-0.34***	0.21***	---					
4 Negative Emotions	2.31	1.03	-0.03	-0.09*	-0.11**	---				
5 Positive Emotions	4.65	1.23	-0.31***	0.06	0.68***	-0.21***	---			
6 Internal Regulation	2.81	0.71	-0.33***	0.03	0.39***	-0.18***	0.53***	---		
7 External Regulation	2.57	0.77	-0.10**	-0.02	0.06	0.27***	-0.01	0.05	---	
8 Academic Achievement	3.07	0.66	-0.22***	0.34***	0.20***	-0.30***	0.22***	0.28***	-0.11**	---

Notes. * $p < .05$; ** $p < .01$; *** $p < .001$.



Note. Standardized model parameters are shown, all are significant at $p < .01$

Figure 1. Step 1 of the Model – Background variables.

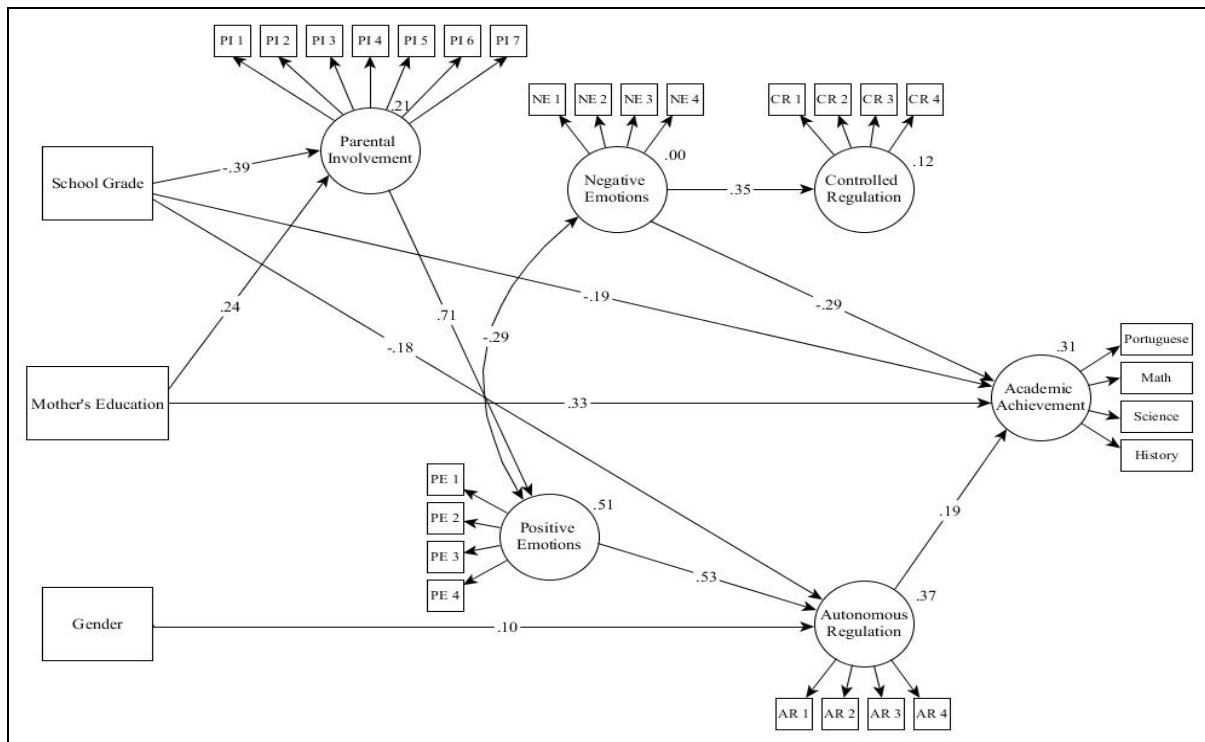


Note. Standardized model parameters are shown, all are significant at $p < .01$

Figure 2. Step 2 of the Model – Background and parental involvement variables.

Adding perceived parental involvement to the model (Set 2; Fig. 2) only adds slightly further weight to the variance of academic achievement (28%, $\Delta R^2=2\%$) but increases the variance explained in autonomous regulation to 23% ($\Delta R^2=10\%$). The only significant path is from perceived parental involvement to autonomous regulation.

When adding emotions (set 3) the model gains a further 4% in the variance explained in academic achievement ($R^2=.31$), 14% in autonomous regulation ($R^2=.37$), and 12% in controlled regulation ($R^2=.12$). Adding emotions to the model changes the relationships between perceived parental involvement and autonomous regulation which become mediated by positive emotions (the direct path from perceived parental involvement to autonomous regulation turns out to be non-significant). The relationship between emotions and academic achievement shows that the effects of positive emotions are mediated by autonomous regulation whereas negative emotions relate directly to academic achievement and controlled regulation. In the third step after introducing perceived parental involvement and emotions, the strongest effect on academic achievement was still the mother's academic qualification.



Note. Standardized model parameters are shown, all are significant at $p < .01$

Figure 3. Step 3 of the Model - Background, parental involvement and emotions.

Discussion

The main aim of this study was to investigate the role of the perceived emotional quality of parent-student interactions (positive and negative emotions) in explaining the impact of parental involvement on child motivational orientation and achievement at school. The model tested clearly provides support for this role, as no direct significant relationships were found between parental involvement and motivation or achievement.

As expected, positive relationships between perceived parental involvement and autonomous orientation for school work were found before the introduction of emotions. However with positive and negative emotions in the model, these direct links disappear and significant associations are evident, not only between parental involvement and emotions, but also between emotions and autonomous or controlled regulations. When including emotions in the model the variance explained for autonomous and controlled motivation as well as for achievement increases, highlighting the importance of emotions in understanding the effects of parental involvement practices. The results are in line with those of Pekrun and colleagues (e.g. Pekrun, 2006, 2009; Pekrun et al., 2007) concerning achievement emotions effects. Enjoyment, as a positive activating emotion, positively affects student learning and performance by strengthening motivation. In our model positive emotions are significantly related to autonomous homework regulation. Therefore, taking into account parental involvement and emotions experienced during interactions, it appears that more parental involvement would only have an important effect on autonomous motivation and achievement if children experience it as positive. These results are in line with and extend the findings of Gonida and Cortina (2014) that only under certain conditions is parental involvement beneficial for learning and achievement. One of these conditions identified in our study is the affective nature of parental involvement interactions.

Our measure of negative emotions integrates anger and anxiety items which are negative activating emotions. The control-value theory postulates that these emotions may strengthen extrinsic student motivation (Pekrun, 2006, 2009). Our findings support this issue, showing that negative emotions associated with parental involvement are also significantly related to external regulation. This reinforces the idea that negative emotions undermine intrinsic motivation, making extrinsic motivation the preferred path to enhance students' academic motivation (Pekrun, 2013; Pekrun, Goetz, Daniel, Stupnisky, & Perry, 2010).

An interesting finding of this study is that, with regard to motivation, only autonomous regulation is associated directly with academic achievement. Therefore, this lack of relationship to controlled motivation shows that students with more external orientation can have different levels of academic achievement. This can sometimes come about because extrinsic motivational orientation can be associated with effort and investment in order to avoid failure, resulting in success (Pekrun, 2006, 2009) and because some students achieving success may simultaneously show different types of motives when engaging in academic tasks (e.g. mastery/performance; intrinsic/extrinsic) (Peixoto, Pipa, Mata, Monteiro & Sanches, 2017; Pulkka & Niemivirta, 2013). Therefore, external motivational orientations do not necessary imply lower levels of performance. However, negative emotions are negatively associated with academic achievement showing that they can be detrimental to performance.

The literature maintains that variables such as gender, school grade and socio-economic level are important in understanding parental involvement, motivational orientation and achievement (e.g. Lepper, Corpus, & Iyengar, 2005; Perry & McConney, 2010). The importance of these variables was taken into account when they were introduced into the model as background variables. Results showed that in the first step of the model, 26% of the variance of academic achievement, 13% of autonomous regulation and less than 1% of controlled regulation, were explained by these background variables. Their effect was evident even

when perceived parental involvement and emotions were introduced in the second and third steps of the model, mainly in the effects of school grade and mother's qualifications.

The mother's qualification is an indicator of SES and research repeatedly shows that SES is strongly associated with the academic performance of the students (e.g. Sirin, 2005; White, 1982). This relationship is probably the result of parents' school experience and their knowledge of the school system and demands, allowing them to modulate their interactions with children when supporting their school-related tasks (Lareau & Calarco, 2012) and influencing their values and competence in communicating and helping their children (Eccles & Davis-Kean, 2005). Parents' school experience, knowledge of school demands, competence and resources may explain why, in our research, the educational level of the mother, besides being associated with students' academic performance, is also related to perceived parental involvement. These results are in line with a number of studies that show differences in involvement practices depending on parents' SES (e.g. Green, Walker, Hoover-Dempsey, & Sander, 2007; Grolnick, Kurowski, Dunlap, & Hevey, 2000).

The grade of students was also related to academic achievement, with older students achieving lower results. This negative association can be explained by school demands being progressively higher, resulting in a wider spectrum of student marks. In the different steps of the model, school grade always shows negative relationships with autonomous regulation for schoolwork and with parental involvement practices. Research has pointed to a decrease in engagement and intrinsic motivation with schooling as students grow older, which is similar to our data (Eccles, O'Neill, & Wigfield, 2005; Lepper, et al., 2005). This decrease can arise from two sources: the child's development and the characteristics of school tasks, practices and demands. It is commonly assumed that cognitive functioning and capabilities of younger students are limited (Harter, 2012; Wigfield, 2000) and therefore are not as rigorous and acute in their evaluations and comparisons. Consequently, self-perceptions of competence and motivation are usually higher among the younger students (e.g. Eccles, et al., 2005; Mata, Monteiro, & Peixoto, 2009). Pedagogical practices and tasks used by teachers often focus too strongly on evaluation, promoting competition among students, which may lead to a decline in intrinsic motivation (Wigfield, 2000).

In summary, the model tested, while not discounting the importance of background variables (gender, school year, mother qualification), highlights two main features in the understanding of parental involvement in student education. Firstly, the role of student motivation in relationship with parental involvement and academic achievement was confirmed. In the model tested in this study, parental involvement only has an indirect effect on student achievement through student motivational orientation, namely through their homework autonomous regulation.. Secondly, the findings highlight the central importance of the emotional quality of parental involvement for a better understanding of the dynamics and the effects of parental involvement practices on student motivation and performance as they are mediated by positive and negative emotions.

Conclusion

The main findings of this research highlight the importance of parent-child interactions in students' academic achievement and the relevance of the perceived emotional quality of parent-child interactions (positive and

negative emotions). The results emphasize the role of emotions in the relationship between parental involvement and the students' motivational orientation. These findings however, need to be considered in the light of the study's limitations. Firstly, the cross-sectional and correlational nature of the study does not allow for any conclusions to be drawn on causal relationships. Although the model tested posits that negative emotions predict more controlled regulation, whilst positive emotions predict autonomous regulation for school work which predicts academic achievement, other paths can be taken. Control-value theory assumes that the dynamic relationships between emotions and motivation are sustained by reciprocal causation over time (Pekrun et al., 2007). The link between perceived parental involvement and emotions must also be considered in a dynamic way as these practices can promote negative and/or positive emotions. These emotions can also open up or close down new opportunities for parental involvement. Therefore, when promoting parental involvement, just proposing some practices or activities or inviting participation in school meetings or events is not enough. It is important to understand the affective characteristics of the parent/child interactions and to create mechanisms which emphasize positive support and communication. As this research has shown, emotions perceived in parental involvement are important, and positive affect may be critical, not only for student motivation and achievement, but also to empower children to find ways to overcome less positive affect.

Acknowledgement

This research was authorized by Portuguese Ministry of Education (Ministério da Educação- Direção Geral de Educação n.º 0374900001) and considered to follow adequate procedures for research in schools. This research was supported by Fundação para a Ciência e Tecnologia [FCT grant number UID/CED/04853/2016].

References

- Arbuckle, J. (2012). Amos (Version 21.0) [Computer Program]. Chicago: SPSS.
- Bakker, J., & Denessen, E. (2007). The concept of parent involvement. Some theoretical and empirical considerations. *International Journal about Parents in Education, 1*, 188-199.
- Browne, M., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.
- Castro, M., Expósito-Casas, E., López-Martín, E., Lizasoain, L. Navarro-Asencio, H., & Gaviria, J. (2015). Parental involvement on student academic achievement: A meta-analysis. *Educational Research Review 14*, 33-46. doi:10.1016/j.edurev.2015.01.002
- Cooper, H., Lindsay, J., & Nye, B. (2000). Homework in the home: How student, family, and parenting-style differences relate to the homework process. *Contemporary Educational Psychology, 25*, 464-487. doi: 10.1006/ceps.1999.1036
- Dearing, E., & Tang, S. (2010). The home learning environment and achievement during childhood. In S. Christenson & A. L. Reschly (Eds.), *Handbook on school-family partnerships* (pp.131-157). New York: Routledge.

- Eccles, J. S., & Davis-Kean P. E. (2005). Influences of parents' education on their children's educational attainments: the role of parent and child perceptions. *London Review of Education*, 3, 191-204.
- Eccles, J. S., & Harold, R. (1996). Family involvement in children's and adolescents' schooling. In A. Booth, & J. Dunn (Eds.), *Family-School links: How do they affect educational outcomes* (pp. 3-34). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Eccles, J., O'Neill, S., & Wigfield, A. (2005). Ability self-perception and subjective task values in adolescents and children. In K. Moore & L. Lipman (Eds.), *What do children need to flourish? Conceptualizing and measuring indicators of positive development* (pp. 237-249). New York: Springer.
- Gonida, E. N., & Cortina, K. S. (2014). Parental involvement in homework: Relations with parent and student achievement-related motivational beliefs and achievement. *British Journal of Educational Psychology*, 84, 376-396. doi: 10.1111/bjep.12039
- Gonzalez-DeHass, A. R., Willems, P. P., & Holbein, M. D. (2005). Examining the relationship between parental involvement and student motivation. *Educational Psychology Review*, 17, 99-123. doi:10.1007/s10648-005-3949-7
- Green, C. L., Walker, J. M. T., Hoover-Dempsey, K. V., & Sandler H. M. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parent involvement. *Journal of Educational Psychology*, 99, 532-544. doi:10.1037/0022-0663.99.3.532
- Grolnick, W. S., & Slowiaczek, M. (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model. *Child Development*, 65(1), 237-252.
- Grolnick, W. S., Benjet, C., Kurowski, C. O., & Apostoleris, N. H. (1997). Predictors of parent involvement in children's schooling. *Journal of Educational Psychology*, 89, 538-548. doi:10.1037/0022-0663.89.3.538
- Grolnick, W. S., Kurowski, C. O., Dunlap, K. G., & Hevey, C. (2000). Parental resources and the transition to junior high. *Journal of Research on Adolescence*, 10, 465-488. doi:10.1207/SJRA1004_05
- Gurland, S. T., & Grolnick, W. S. (2005). Perceived threat, controlling parenting, and children's achievement orientations. *Motivation and Emotion*, 29(2), 103-121. doi:10.1007/s11031-005-7956-2
- Harter, S. (2012). *The construction of the self: Developmental and sociocultural foundations* (2nd ed.). New York, NY, US: Guilford Press.
- Hill, N., & Tyson, D. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology*, 45, 740-763. doi: 10.1037/a0015362
- Hoover-Dempsey, K., & Sandler, H. (1995). Parental involvement in children's education: why does it make a difference? *Teachers College Record*, 97, 310-331.
- Hoover-Dempsey, K., Walker, J., Sandler, H., Whetsel, D., Green, C., Wilkins, A., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *The Elementary School Journal*, 106, 105-130. doi: 10.1086/499194

- Jeynes, W. (2007). The Relationship between parental involvement and urban secondary school student academic achievement: A Meta-Analysis. *Urban Education, 42*(1), 82-110.
- Jeynes, W. (2012). A meta-analysis of the efficacy of different types of parental involvement programs for urban students. *Urban Education, 47*, 706-742. doi:10.1177/0042085912445643
- Kline, R. (2011). *Principles and practice of structural equation modeling* (3rd Ed.). New York: Guilford Press.
- Knollmann, M., & Wild, E. (2007). Quality of parental support and students' emotions during homework: Moderate effects of students' motivational orientations. *European Journal of Psychology of Education, 22*, 63-76. doi:10.1007/BF03173689
- Kohl, G., Lengua, L., & McMahon, R. (2000). Parent involvement in school conceptualizing multiple dimensions and their relations with family and demographic risk factors. *Journal of School Psychology, 38*, 501-523. doi:10.1016/S0022-4405(00)00050-9
- Lareau, A., & Calarco, J. (2012). Class, cultural capital and institutions: the case of families and schools. In S. Fiske & M. Hazel (Eds.), *Facing social class: How societal rank influences interaction* (pp. 61-86). New York: Russell Sage Foundation.
- Lepper, M., Corpus, J., & Iyengar, S. (2005). Intrinsic and extrinsic motivational orientations in the classroom: Age differences and academic correlates. *Journal of Educational Psychology, 97*, 184-196.
- Levin, I., Levy-Shiff, R., Appelbaum-Peled, T., Katz, I., Komar, M., & Meiran, N. (1997). Antecedents and consequences of maternal involvement in children's homework: A longitudinal analysis. *Journal of Applied Developmental Psychology, 18*, 207-227. doi:10.1016/S0193-3973(97)90036-8
- Little, T. D., Rhemtulla, M., Gibson, K., & Schoemann, A. M. (2013). Why the items versus parcels controversy needn't be one. *Psychological Methods, 18*, 285-300. doi:10.1037/a0033266
- Luo, W., Aye, K. M., Hogan, D., Kaur, B., & Chan, M. C. Y. (2013). Parenting behaviors and learning of Singapore students: The mediational role of achievement goals. *Motivation and Emotion, 37*, 274-285. doi: 10.1007/s11031-012-9303-8
- Mata, L., Monteiro, V., & Peixoto, F. (2009). Motivação para a leitura ao longo da escolaridade [Reading motivation throughout schooling]. *Análise Psicológica, 27*, 563-572. doi:10.14417/ap.248
- Meyer, D., & Turner, J. (2006). Re-conceptualizing emotion and motivation to learn in classroom contexts. *Educational Psychology Review, 18*, 377-390. doi: 10.1007/s10648-006-9032-1
- Patall, E. A., Cooper, H., & Robinson, J. C. (2008). Parent involvement in homework: A research synthesis. *Review of Educational Research, 78*, 1039-1101. doi:10.3102/0034654308325185
- Pedro, I. (2010). *Funções parentais no processo educativo e de escolarização dos filhos* [Parental roles in children's educational process and schooling]. Doctoral dissertation, University of Porto.
- Peixoto, F., Mata, L., Monteiro, V., Sanches, C., & Pekrun, R. (2015). The Achievement Emotions Questionnaire: Validation for pre-adolescent students. *European Journal of Developmental Psychology, 12*, 472-481. doi:10.1080/17405629.2015.1040757

- Peixoto, F., Pipa, J., Mata, L., Monteiro, V., & Sanches, C. (2017). "To learn, or to be the best?": Achievement goal profiles in pre-adolescents. *Análise Psicológica*, 35, 499-511. doi: 10.14417/ap.1182
- Peixoto, F., Sanches, C., Mata, L., & Monteiro, V. (2016). How do you feel about math? Relationships between competence and value appraisals, achievement emotions and academic achievement. *European Journal of Psychology of Education*, 32. doi:10.1007/s10212-016-0299-4
- Pekrun, R. (2006). The control-value theory of achievement emotions: Assumptions, corollaries, and implications for educational research and practice. *Educational Psychology Review*, 18, 315-341. doi:10.1007/s10648-006-9029-9
- Pekrun, R. (2009). Global and local perspectives on human affect: Implications of the controlvalue theory of achievement emotions. In M. Wosnitza, S. A. Karabenick, A. Efklides, & P. Nenninger (Eds.), *Contemporary motivation research: From global to local perspectives* (pp. 97–115). Cambridge, MA: Hogrefe.
- Pekrun, R. (2013). Emotions, motivation, and self-regulation: Common principles and future directions. In N. Hall & T. Goetz (Eds.), *Emotion, motivation, and self-regulation: A handbook for teachers* (pp. 167-188). Bingley, UK: Emerald Group Publishing limited.
- Pekrun, R., Frenzel, A., Goetz, T., & Perry, R. (2007). The control-value theory of achievement emotions: an integrative approach to emotions in education. In P. A. Schutz & R. Pekrun (Eds.), *Emotion in Education* (pp. 13–36). Amsterdam: Academic Press.
- Pekrun, R., Goetz, T., Daniel, L., Stupnisky, R., & Perry, R. (2010). Boredom in achievement settings: Exploring control–value antecedents and performance outcomes of a neglected emotion. *Journal of Educational Psychology*, 102, 531–549. doi:10.1037/a0019243
- Perry, L., & McConney, A. (2010). Does the SES of the school matter? An examination of socioeconomic status and student achievement using PISA 2003. *Teachers College Record*, 112 (4), 1137-1162.
- Pomerantz, E. M., & Rudolph, K. D. (2003). What ensues from emotional distress? Implications for competence estimation. *Child Development*, 74, 329-345. doi:10.1111/1467-8624.7402001
- Pomerantz, E. M., Moorman, E. A., & Litwack, S. D. (2007). The How, whom, and why of parents' involvement in children's academic lives: More is not always better. *Review of Educational Research*, 77, 373-410. doi:10.3102/003465430305567
- Pomerantz, E., Wang, Q., & Ng, F. (2005). Mothers' affect in homework context: The importance of staying positive. *Developmental Psychology*, 41, 414-427. doi:10.1037/0012-1649.41.2.414
- Pulkka, A., & Niemivirta, M. (2013). Adult students' achievement goal orientations and evaluations of the learning environment: A person-centred longitudinal analysis. *Educational Research and Evaluation*, 19(4), 297-322. doi:10.1080/13803611.2013.767741
- Raykov, T., & Marcoulides, G. A. (2006). *A first course in structural equation modelling* (2nd Edition). Mahwah, NJ: Lawrence Erlbaum Associates.
- Rimé, B. (2005). *Le partage social des émotions* [The social sharing of emotions]. Paris: PUF - Presses Universitaires de France

- Ryan, R., & Connell, J. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, 57, 749-761. doi:10.1037/0022-3514.57.5.749
- Sheldon, S. B., & Epstein, J. L. (2002). Improving student behavior and school discipline with family and community involvement. *Education and Urban Society*, 35, 4-26. doi:10.1177/001312402237212
- Sheldon, S. B., & Epstein, J. L. (2004). Getting students to school: Using family and community involvement to reduce chronic absenteeism. *School Community Journal*, 14(2), 39-56.
- Sirin, S. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research*, 75, 417-453. doi:10.3102/00346543075003417
- Warner, C. H. (2010). Emotional safeguarding: Exploring the nature of middle-class parents' school involvement. *Sociological Forum*, 25, 703-724. doi:10.1111/j.1573-7861.2010.01208.x
- White, K. (1982). The relation between socioeconomic status and academic achievement. *Psychological Bulletin*, 91(3), 461-481. doi:10.1037/0033-2909.91.3.461
- Wigfield, A. (2000). Facilitating children's reading motivation. In L. Baker, M. Dreher, & J. Guthrie (Eds.), *Engaging young readers – Promoting achievement and motivation* (pp. 140-158). New York: Guilford Press.